



آغا خان یونیورسٹی  
THE AGA KHAN UNIVERSITY

# *8th Health Sciences Research Assembly*



## *Abstract Book*



*December 11 and 12, 2013*



8th Health Sciences Research Assembly  
December 11 & 12, 2013

**INAUGURAL SESSION**

**Wednesday, December 11, 2013 | 8:30 – 9:30**

- Tilawat
- Introduction  
*Dr Hammad Ather, Chair Organising, Committee, 8th HSRA*
- Remarks by  
*Dr Keith Cash, Dean, School of Nursing & Midwifery*
- Remarks by  
*Dr Farhat Abbas, Dean, Medical College*
- Remarks by  
*Dr El-Nasir Lalani, Dean of Research & Graduate Studies*
- Vote of thanks  
*Shela Hirani, Co-Chair, 8th HSRA*
- Inauguration of Scientific Exhibition (Posters)

**Message from  
Chair/Co-Chair, Organising Committee**

Health Sciences Research Assembly is an essential milestone of Aga Khan University. It is an avenue where faculty, fellows, residents, nurses, students, and alumni of Aga Khan University unite at one platform. The gathering helps to disseminate research and share research ideas with the interdisciplinary and multidisciplinary group of health care professionals.

HSRA not only plays a pivotal to promote research culture within the university but also encourage the novice researchers to flourish their research career, come up with innovative researches, and recognize the power of collaborative researches.

We are hopeful that in coming year we all will recognize the impact of such events beyond the boundaries of AKU. Considering the impact of past years' HSRAs, one can say it with conviction that this platform will strengthen the research capacities of many novice researchers to an extent that in coming years they can better serve this society and bring positive changes in the health indicators worldwide.

We congratulate each one of you for your attendance and active participation in this year's research assembly.

Best wishes,

**Dr Hammad Ather**  
Chair, Organising Committee  
8th HSRA

**Shela Hirani**  
Co-Chair, Organising Committee  
8th HSRA

**Message from  
Dean, School of Nursing and Midwifery**

These days knowledge is not confined to the narrow boundaries of individual disciplines. On the contrary, for a university to be active in the creation of new knowledge and the application of existing knowledge, we need cross-fertilization between disciplines. A good example is the collaboration of a physicist and a biologist, using the findings of a crystallographer and competing with a chemist, that lead to the modeling of DNA by Crick and Watson. This way of working is not easy and needs structures that can support it, as well as the will to work in this way.

One way of encouraging and supporting it comes from meetings like the 8th Health Sciences Research Assembly, which lets faculty and students share their work and ideas in a collegial environment where connections can be made and new ideas emerge. Collaboration needs the opportunity to meet and talk.

The organizers of this celebration of the exciting research culture in AKU are to be congratulated on their work and their initiative in creating this event.

**Dr Keith Cash**  
Dean and Professor  
School of Nursing and Midwifery  
Aga Khan University

**Message from  
Dean, Medical College**

As scholarship and discovery continue to take on increasing importance for all leading academic institutions the world over, the Aga Khan University-in its pursuit of making AKU a truly research-led institution of the 21st century-continues to foster and underpin its research culture while forging new multi- and interdisciplinary collaborations.

AKU's first Health Sciences Research Assembly was held in 2005 and was amongst the first steps towards making research the cornerstone of AKU's existence. Over the last eight years the Health Sciences Research Assembly has become an integral component of AKU's academic and scholarly activities with abstract submission and participation surpassing expectations year after year.

To continue this exchange and dissemination of learning, ideas and work, both completed and in progress, to provide greater opportunities for collegial efforts across disciplines and specialties, we announce the 8th Health Sciences Research Assembly, as a two-day event on December 11 and 12, 2013. I encourage all faculty, fellows, residents and students to actively participate in the event, in an effort to make meaningful contributions to the contemporary knowledge-based society and for making a sustainable impact on the intellectual landscape. I take this opportunity to convey my appreciation to Dr. Hammad Ather and the Organizing Committee of the 8th Health Sciences Research Assembly. I wish you all the best and hope the event meets unprecedented success.

**Dr Farhat Abbas**  
Dean, Medical College  
Aga Khan University

**Message from  
Dean of Research and Graduate Studies**

The Aga Khan University is committed to innovative trans/multi-disciplinary undergraduate and postgraduate education, and research. The University aims to achieve this by offering students a rich educational experience, an experience connecting individual curiosity, intellectual rigor and trans-disciplinary breath. Research is an integral and essential part of this experience.

The thematic research focus of the Faculty of Health Sciences is “Social and Economic Determinants of Health” with six sub-themes: **a.** Maternal, Newborn & Child Health; **b.** Non-Communicable Diseases; **c.** Infection, Immunity and Inflammation; **d.** Human Development; **e.** Neurosciences and **f.** Stem Cell Research.

These sub-themes are underpinned by the drive and intellectual inquisitiveness of individuals who traverse departments, faculties and other AKU campuses. Their collective aim is to bring forth new knowledge and solutions addressing local challenges and to inform regarding policy and practices. AKU’s close collaborations with extraordinary external collaborators and university partners offer an added wealth of research options. The University’s efforts are supported through donations, gifts, extra and intramural competitive grants and international aid agencies.

The concept of an annual research assembly was an important bold step that has become part of the University’s calendar. The 8th Health Sciences Research Assembly provides a unique forum for faculty, staff, and students at AKU to showcase their work, discuss ideas, and become informed of the diverse activities and opportunities. AKU’s research is not only about new knowledge or the application of it; but also about developing a steady stream of highly skilled individuals.

It is a very tall order to organise an event on such a mammoth scale. The organisers have worked tirelessly over many months to put together this year’s assembly. I take this opportunity to recognise and thank them for their effort, creativity and passion. Congratulations.

**Dr El-Nasir Lalani**  
Dean, Research & Graduate Studies and  
Professor, Molecular and Cellular Pathology

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# **ABSTRACTS**



# **Bone and Joint Diseases**

## **/ Orthopaedics**

## 1.1 JUDET'S QUADRICEPSPLASTY FOR KNEE CONTRACTURES

*Akbar Jaleel Zubairi, Haroon ur Rashid  
Department of Surgery, Aga Khan University,  
Karachi*

*Background:* Knee stiffness is seen after peri-articular knee fractures or Ilizarov application. Judet's Quadricepsplasty has been used for over half a century to manage this debilitating condition even so Literature from our region is limited.

*Methods:* We retrospectively reviewed the results of 22 cases of knee contractures managed with Judet's quadricepsplasty during the last 5 years having a mean follow up of 15.4 months. Degrees of flexion of the operated knees pre-operatively and at last follow up were recorded along with quadriceps strength, presence of extension lag and complications. Outcomes were classified according to Judet's criteria.

*Results:* Ilizarov application was the cause of contracture in 13 patients (59.1%) followed by internal fixation for peri-articular fractures in 5 patients (22.7%). The degree of flexion increased from 29 degrees (0-90 degrees) preoperatively to 85.7 degrees (20-150 degrees) on last follow up showing a flexion gain of 56.6 degrees. Quadriceps strength at follow up was 4.5 with extension lag present in only 2 patients (9.1%). Superficial wound infection was seen in 3 patients (13.6%) and 1 patient suffered from reflex sympathetic dystrophy. The outcome according to Judet's criteria on last follow up was excellent in 7 patients (31.8%), good in 10 (45.5%), fair in 2 (9.1 %) and poor in 3 patients (13.6%). Female gender was significantly associated with a poor outcome (p value 0.039).

*Conclusion:* Judet's quadricepsplasty is a useful procedure to increase the range of motion of rigid knees. Our results are comparable to what have been reported in international literature.

*Keywords:* Judet's Quadricepsplasty, knee contracture, functional outcome

## 1.2 A CASE OF LOWER LIMB REPLANTATION WITH A 12 YEARS FOLLOW UP

*Akbar Jaleel Zubairi, Pervaiz Hashmi  
Department of Surgery, Aga Khan University,  
Karachi*

*Introduction:* Replantation of the lower extremity has limited indications because crushing and avulsion of the involved parts make the procedure difficult to perform and the results of modern prostheses are better than a poorly functional replanted limb. Nevertheless replantation may be considered in carefully selected patients like children with distal amputations who make better functional recoveries and in whom stump revision and frequent change of prosthesis is cumbersome. Here we present a successful replantation in a 3 year old boy who has made excellent recovery with no functional deficit evident at 12 years follow up.

*Case Description:* A 3 year old boy, sustained a traumatic amputation of his left lower limb at the level of distal tibia when he fell of a 'Qing Qi' (Motorcycle Rickshaw). Replantation was attempted at 8 hours cold ischemia time with the tibia shortened 4 cm and all tendons, vessels and nerves repaired. Patient required a second procedure during the same hospital stay for skin coverage. Patient made good recovery with ambulation without support at 6 months, less than 2 cm limb length discrepancy, plantar and dorsiflexion power 4/5 and recovery of sensation over the foot. Now at 12 years of follow up patient has a normal gait with 5/5 power of plantar and dorsiflexion and has integrated in to society with no functional deficit. Considering the functional outcome of our case, replantation should be attempted where possible and feasible especially in children.

*Keywords:* Replantation, amputation, functional outcome

### 1.3 DETERMINATION OF MAGNIFICATION FACTOR AND ITS ASSOCIATION WITH PELVIC DIMENSIONS IN DIGITAL PELVIC RADIOGRAPHS

*Akbar Jaleel Zubairi, Tashfeen Ahmad  
Department of Surgery, Aga Khan University,  
Karachi*

*Background:* Preoperative planning and templating is essential in hip arthroplasty. The variation in magnification factor of the radiographs presents a major challenge.

*Aim:* to determine the magnification factor of our pelvic radiographs and to determine the effect of various pelvic dimensions on its magnitude.

*Methods:* We conducted a retrospective chart and X-ray review of all patients who underwent Austin Moore hemi-arthroplasty at our hospital between Jan 2006 and Dec 2007. Magnification factor was determined by dividing the size of implant on the post-operative radiograph by the actual size of implant used and expressing it as a percentage. Intraobserver and interobserver reliability of measurements was calculated.

*Results:* Sixty-three patients were studied of which 25 were males and 38 females with mean age  $69.9 \pm 12$  years. The mean magnification factor was  $113 \pm 4\%$  (106-125%). Mean implant size used was  $46 \pm 4$  (38-57 mm). No significant correlation was found between the pelvic dimensions and magnification factor. Even though the mean difference between magnification of preoperative and postoperative radiographs was approaching zero (0.05%) the wide range (-7.7 – 9.6 %) of difference, further increases the uncertainty involved in the determination of the magnification of any given radiograph.

*Conclusion:* Digital radiographs of the pelvis exhibit variable amount of magnification along with an inconsistency in magnification on repeat examination. This variation may be due to patient and X-ray technique related factors, and may adversely affect the accuracy of digital templating.

*Keywords:* Magnification, arthroplasty, templating

### 1.4 VACUUM ASSISTED CLOSURE- UTILIZATION AS HOME BASED THERAPY IN THE MANAGEMENT OF COMPLEX WOUNDS

*Kamran Hafeez, Haroon-ur-Rashid  
Department of Surgery, Aga Khan University,  
Karachi*

*Background:* Diabetes Mellitus is a complex disease resulting in extremity non-healing wounds with poor vascularity. Vacuum assisted closure is an effective technique which keeps the wound environment sterile and does not require frequent change of dressings. We have utilized this technique in the management of our patients on outpatient basis.

*Methods:* This study was conducted from June 2011 to June 2013 at Dow University Hospital and Aga Khan University Hospital, Karachi. There were 38 patients managed with vacuum assisted closure. Mean age was  $56 \pm 7.8$  years. Twenty three patients presented with necrotizing fasciitis and 15 patients with gangrene. Lower limbs were involved in majority of the patients. Debridement or amputations were done. Vacuum dressing was changed twice weekly in outpatient department. Wounds were closed secondarily if possible or covered with split thickness skin graft in another admission.

*Results:* All the wounds were successfully granulated at the end of vacuum therapy. Mean hospital stay was 7.5 days. Vacuum dressing was applied for a mean of 20 days. There was reduction in the size of the wound. Thirteen patients underwent secondary closure of the wound under local anesthesia, 18 patients required coverage with split thickness skin graft and 7 patients healed with secondary intention.

*Conclusion:* Vacuum assisted closure appeared to be an effective method to manage complex diabetic wounds requiring sterile wound environment. Application of vacuum therapy on outpatient basis also made it economical by decreasing the hospital stay.

*Keywords:* Vacuum assisted closure, diabetic wounds, home-based therapy

## 1.5 IMPACT OF UNPLANNED EXCISION ON PROGNOSIS OF PATIENTS WITH EXTREMITY SOFT TISSUE SARCOMA

*Hafiz Muhammad Umer, Masood Umer, Irfan Qadir, Nadeem Abbasi, Nehal Masood  
Departments of Surgery and Oncology, Aga Khan University, Karachi*

*Background:* Unplanned excision of Soft tissue sarcomas (STS) outside comprehensive tumor management centers necessitates the need for re-wide excision to achieve adequate margins. The goal of this study was to examine the outcomes of re-excision following an unplanned excision of STS and compare results with those of first time planned surgery.

*Methods:* This retrospective study evaluated 135 patients treated for soft tissue sarcoma of extremities at Aga Khan University Hospital from 1994 to 2008. 84 patients had their first time surgery and 51 had come to us following unplanned excision at pre-referral hospital. Outcomes were evaluated in terms of local recurrence and metastasis rate.

*Results:* Mean age of all patients was  $41.8 \pm 21.9$  years. The local recurrence rate and metastasis rate was 14.3% and 8.3% respectively in patients undergoing first resection whereas it was 21.4% and 13.7% respectively in patients undergoing revision surgery. Average duration from previous unplanned excision to re-wide excision was 8 months. 12 patients were referred immediately after unplanned excision and treated with re-wide excision. 39 patients were referred after evident local recurrence and treated with delayed re-wide excision. 10 patients were treated with chemotherapy and 3, with additional radiation.

*Conclusion:* Re-wide excision of STS has poorer outcomes compared to planned excision. When histological diagnosis turned to be sarcoma after simple excision, immediate re-wide excision prior to local recurrence must be recommended and the patients should be referred to orthopedic oncologists in the tumor center.

*Keywords:* Soft tissue sarcoma, unplanned excision, Pakistan

## 1.6 CLINICO-PATHOLOGICAL CHARACTERISTICS OF PATIENTS WITH SOFT TISSUE SARCOMA IN PAKISTAN

*Hafiz Muhammad Umer, Masood Umer, Irfan Qadir  
Department of Surgery, Aga Khan University, Karachi*

*Introduction:* Managing soft tissue sarcomas (STS) in a developing country with limited financial resources and poor health referral system is a challenge. This study aimed to explore the clinico-pathological profile of STS patients in Pakistan and also evaluate prognostic factors for recurrence and survival.

*Patients and Methods:* In this institutional review, clinico-pathological characteristics and surgical outcomes of 135 patients with STS operated at Aga Khan University Hospital between 1994 and 2008 are reported. Cox regression analysis was done to evaluate prognostic factors for recurrence and Kaplan Meier survival curves were plotted.

*Results:* There were 83 males and 52 females in the study with mean age of  $41.8 \pm 21.9$  years. 67.4% and 32.6% sarcomas occurred in lower and upper extremity respectively. Synovial Cell Sarcoma was commonest (25.2%) followed by malignant Fibrous Histiocytoma (18.5%) and Liposarcoma (12.6%). Tumor size was  $<5\text{cm}$  in 53 cases and  $>5\text{cm}$  in 82 cases and tumor was deep seated in 81 of patients. There were 67 patients with Grade 3, 37 with Grade 2 and 31 patients with Grade 1 tumor. Local recurrence rate and metastasis rate were 17% and 10.3% respectively. Twelve patients died of disease. Tumor size  $> 5\text{ cm}$ , grade 3 tumors and margin  $< 10\text{mm}$  significantly increased local recurrence rates. Margin  $\geq 10\text{mm}$  and age  $< 45$  years significantly enhanced cumulative survival.

*Conclusion:* A significant proportion of STS patients undergo unplanned excision in Pakistan. Despite the difference in clinical profile, outcomes of our patients are no different from that reported in western literature.

*Keywords:* Soft tissue sarcoma, Pakistan, prognostic factors

### 1.7 AUTOCLAVED TUMOR BONE FOR SKELETAL RECONSTRUCTION IN PAEDIATRIC PATIENTS: A LOW COST ALTERNATIVE IN DEVELOPING COUNTRIES

*Masood Umer, Hafiz Muhammad Umer, Irfan Qadir, Rabia Awan, Raza Askari*  
Department of Surgery, Aga Khan University,  
Karachi

**Introduction:** Skeletal reconstruction for large segmental defects following bone tumor extirpation has always been considered a therapeutic challenge. In this series, we reviewed forty patients of pediatric age who underwent resection for malignant bone tumors followed by biological reconstruction with autoclaved tumor bone.

**Patient and Methods:** In this institutional review, clinico-pathological characteristics and surgical outcomes of forty patients who underwent skeletal reconstruction with autoclaved bone are reported. Complications in terms of local recurrence, fracture and non-union were evaluated. Functional evaluation was done using MSTs scoring system.

**Results:** Our population included 23 males and 17 females with a mean age of 11.47 years. Ewing's Sarcoma (37.5%) was the commonest followed by Osteosarcoma (30%). Femur was most commonly involved bone in 42.5% of patient followed by tibia (35%), humerus (12.5%) and radius 7.5%. Mean resection length was 13.9cm and mean length of re-implanted autoclaved graft was 18.5cm. 31 patients had recovered without any complication. 95% patients successfully achieved a solid bony union between the graft and recipient bone. Three patients had surgical site infection. They were managed with wound debridement and flap coverage of the defect. Local recurrence and non-union occurred in two patients each. One patient underwent disarticulation at hip due to extensive local disease and one died of metastasis. For patients with non-union, revision procedure with bone graft and compression plates was successfully used.

**Conclusion:** The use of autoclaved tumor grafts provides a limb salvage option that is

inexpensive and independent of external resources without sacrificing appropriate oncologic principles. Longer follow ups are needed to assess the long term complications such as limb length discrepancy and its subsequent management

**Keywords:** Biological reconstruction, musculo-skeletal tumors, Pakistan

### 1.8 RELATIONSHIP OF BONE TURNOVER MARKERS WITH BONE MINERAL DENSITY IN POSTMENOPAUSAL PAKISTANI FEMALES

*Syed Talha Naeem, Riffat Hussain, Aysha Habib Khan*  
Departments of Pathology & Microbiology and  
Radiology, Aga Khan University, Karachi

**Background:** Status of osteoporosis and bone turnover in our post-menopausal women is not clearly defined. Bone turnover markers (BTM) can help identify patients who will benefit from intervention and, thus, can reduce the osteoporosis-associated fractures in our population.

**Objective:** To assess bone turnover status in post-menopausal females.

**Methods:** In this cross-sectional study, 203 postmenopausal females ( $\leq 60$  years), with menopause ( $\geq 1$  year), were evaluated for BMD with DXA. Patients with any disorder or medications affecting bone turnover were excluded. Bone turnover was assessed with Osteocalcin and  $\beta$ -CTx. Data was analyzed by SPSS 19. Spearman Rho correlation was computed to see the association between BTM & BMD.

**Results:** Mean age of the participants was  $54 \pm 4.6$  years and mean BMI  $28.7 \pm 5.5$  kg/m<sup>2</sup>. Mean age of start of menopause was  $46.6 \pm 1.0$  years. Mean  $\beta$ -CTx ( $0.28 \pm 0.24$  ng/ml) and osteocalcin ( $21.5 \pm 10.6$  ng/ml) levels were within the normal reference range. Subjects were grouped into normal (26.6%), osteopenic (44.8%) and osteoporotic (28.6%) based on the t-scores. Insignificant difference was noted in Osteocalcin and  $\beta$ -CTX levels between the three

groups ( $p > 0.05$ ) and no association of these markers with BMD was found in these groups. Negative correlation was observed between  $\beta$ -CTx and lumbar spine BMD ( $r = -0.13$ ,  $p = 0.04$ ). Positive association was noted between the markers in the 3 groups ( $p < 0.01$ ). Multivariate linear regression showed a positive and significant effect of bone mass index on BMD ( $\beta = 0.33$ ,  $p = < 0.0001$ ).  $\beta$ -CTx had negative but significant effect on BMD of postmenopausal women.

**Conclusions:** Association between baseline levels of BTM and rate of bone loss is variable, depending on bone site.  $\beta$ -CTX may be used in the assessment of postmenopausal osteoporotic patients but the role of osteocalcin in postmenopausal osteoporosis is uncertain. Further studies to find out their specific role in postmenopausal osteoporotic patients are recommended

**Keywords:** Bone turnover markers, bone mineral density

## 1.9

A COMPARISON OF RECOMMENDATION FROM INSTITUTE OF MEDICINE AND INTERNATIONAL OSTEOPOROSIS FOUNDATION. ARE WE USING THE CORRECT CUT-OFFS FOR VITAMIN D DEFICIENCY?

*H. Majid, I. Siddiqui, Farooq Ghani, A. H. Khan  
Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Background:** One of the major areas of discussion in the area of vitamin D deficiency (VDD) is use of the appropriate reference ranges for serum 25 Hydroxy D (25OHD) and is still debated upon.

**Objective:** To compare the frequencies of VDD, insufficiency and toxicity using cutoffs recommended by International Osteoporosis Foundation (IOF) and Institute of Medicine's (IOM) 2010 report.

**Methods:** An observational study was conducted at the section of Chemical Pathology, Department of Pathology & Microbiology AKUH. Laboratory data analysis of serum

25OHD tests performed from January 2010 to October 2012 was performed. Only initial test results were included in analysis for subjects with repeated testing for 25OHD. The cutoffs suggested for deficient, insufficient, optimal and toxic levels by IOM's 2010 report were  $< 12$ , 12-20, 20-49 and  $\geq 50$  ng/ml; however cutoffs by IOF were  $\leq 20$ , 20-30, 30-100 and  $\geq 150$  ng/ml respectively. Data was analyzed by SPSS Version 19.

**Results:** 25OHD testing increased by 35% since 2010 to 2012. Total 17, 6115 tests were performed during 34 months period, average age being 35 years. Comparison shows 41% vs. 65.1% deficient, 23.5% vs. 16.5% insufficient, 27.5% vs. 17.8% optimal and 6.7% vs. 1.5% toxic according to IOM vs. IOF recommendation. There were no significant differences in 25OHD statuses over the three years using any of the two recommendations.

**Conclusions:** Using IOM recommendations frequency of VDD decreases to 2/3 the frequency reported using IOF's recommendations at the expense of increasing toxicity to more than thrice of that reported using IOF's recommendations. There is an intense need for establishment of vitamin D reference range in our population

**Keywords:** Vitamin D, Reference ranges, osteoporosis, IOM report 2010

## 1.11

DOES LABORATORY DATA TRULY REFLECT THE PREVALENCE OF VITAMIN D DEFICIENCY? A HEAD TO HEAD COMPARISON WITH PAKISTAN NATIONAL NUTRITION SURVEY 2011

*Sidra Hassan, Syeda Maria Muzammil, Lena Jafri, Aysha Habib Khan  
Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Background:** Studies from across the globe testify to the prevalence of vitamin D deficiency (VDD) in a significant proportion of their population. According to the "National Nutrition Survey 2011" (NNS 2011) of Pakistan, published by the AKU, 66.2% of non-pregnant

and 68.5 % of pregnant females were identified as 25-hydroxy D (25[OH]D) deficient.

*Objectives:* To compare VDD amongst provinces of Pakistan and to compare the extent of VDD identified from the laboratory data with the NNS 2011.

*Methods:* Subjects tested for 25[OH]D at the Clinical Laboratory of Aga Khan University Hospital (AKUH) from September 2010 to September 2011 were taken, including samples received from the collection points all over Pakistan and the main AKUH laboratory in Karachi. VDD was compared between Sindh, Punjab, Balochistan, Khyber Pakhtunkhwa (KPK), Gilgit and Baltistan and Azad Kashmir. AKUH Collection Point in Kabul was excluded from the study. AKU Ethical Review Committee's exemption was sought. SPSS version 19 was used for data analysis.

*Results:* Overall, mean log 25[OH]D was 1.14 ( $\pm$  0.39) ng/ml (median 25[OH]D=13.5 ng/ml; IQR=7.4-25.1 ng/ml). Out of the total (n=60,937) 66.1% of the population had VDD, majority belonging to 19-50 years age group (n=30744).

According to NNS 2011, the region most deficient in 25[OH]D amongst females turned out to be the Gilgit and Baltistan as opposed to our data which suggested KPK to have most severe VDD. According to NNS 2011, Baluchistan had the highest 25[OH]D levels; whereas laboratory data suggested Azad Kashmir to have highest.

*Conclusion:* For a sun-drenched country, the prevalence of VDD at such high rates is statistically alarming. There is a need for widespread awareness via mass media and newspapers to address this issue at all segments of society. Food fortification needs to be an essential part of these campaigns

*Keywords:* Vitamin D deficiency, prevalence

# Cardiovascular Diseases



## 2.1 EXPERIENCES OF LIVING WITH HEART FAILURE

*Ambreen Gowani, Raisa Gul, Sajid Dhakam  
School of Nursing & Midwifery, Aga Khan  
University and Indus Hospital, Karachi*

*Background:* Heart Failure is the leading cause of hospitalization among older people. It is one of the most debilitating chronic illnesses that severely affect patients' Quality of life (QOL). International literature reveals that the challenge of living with heart failure may be influenced by several individual and contextual factors. However, this topic remains unexplored in Pakistan. This study was undertaken to understand the experiences of heart failure patients in an urban context in Pakistan.

*Methods:* A qualitative exploratory study design was used in this study. A purposive sample of six patients with variation in their level of self-care, age, gender, income, educational status participated in this study. Data were collected via in-depth interviews that were transcribed verbatim and content analyzed for pattern of themes.

*Results:* The analysis of patients' narratives revealed four themes and sub-themes. The major themes were: Imprisoned by the illness, Fear of uncertainty, Adapting to health deviated needs, and Health care system constraints.

*Conclusion:* Several personal and system related factors seem to impose challenges to the quality of life of HF patients. Therefore, understanding of their issues is imperative to take appropriate measures that improve their QOL. Key words: Heart failure and Quality of life.

*Keywords:* Heart failure, quality of life, experiences

## 2.2 SAFETY PROFILE OF FAST TRACK EXTUBATION IN PEDIATRIC CHD SURGERY PATIENTS IN A TERTIARY CARE HOSPITAL OF A DEVELOPING COUNTRY: AN OBSERVATIONAL PROSPECTIVE STUDY

*Mohamamd Irfan Akhtar, Mohammad Hamid,  
Amina Rehmat, Anwar ul Haq, Muneer  
Amanullah, Khalid Ahsan  
Departments of Anaesthesiology, Nursing  
Services, Paediatrics & Child Health and  
Surgery, Aga Khan University, Karachi*

*Introduction:* Early extubation after cardiac operations is an important aspect of fast-track cardiac anesthesia. In order to reduce or eliminate the adverse effects of prolonged ventilation in pediatric congenital heart disease (CHD) surgical patients, the concept of early extubation has been analysed at a tertiary care hospital. The current study was proposed to record the data to validate the importance and safety of FTE with evidence. In the current study the objectives were to determine the success rate of fast track extubation in CHD surgery patients, to analyze the reasons for delayed extubation in selected patients and also the rate of reintubation within 24 hrs in patients extubated on fast track.

*Materials and Methods:* A total of 71 patients, both male and female, aged 6 months to 18 years, belonging to RACHS-1 category 1, 2 and 3 were included in the study. All patients were anesthetized with a standardized technique. At the end of operation, the included patients were assessed for fast track extubation and standard extubation criteria were used for decision.

*Results:* Of the total 71 patients included in the study, 26 patients (36.62%) were extubated in OR, 29 (40.85%) were extubated within 4-6 hours of arrival in CICU and 16 (22.54%) were not extubated within 6 hrs. Hence overall success rate was 77.47%. There was no reintubation in the fast track extubation cases.

*Conclusion:* On the basis of our study, we suggest to use fast track extubation in pediatric CHD patients with careful multidisciplinary approach.

*Keywords:* Fast track extubation, congenital heart disease, cardiac intensive care

### 2.3 INCIDENT REPORTING IN PAEDIATRIC CONGENITAL HEART ANAESTHESIA

*Mohammad Hamid, Amarlal Gangwani  
Department of Anaesthesiology, Aga Khan  
University, Karachi*

*Introduction:* Incident reporting is a reliable quality assurance tool, frequently used in anaesthesia to identify errors. It was introduced in anaesthesia by Cooper in 1978 and since then several institutions have adopt this system to find adverse events and near misses. We think that the incident reporting would be more beneficial for prolong and technically complex procedures like paediatric cardiac surgery.

*Methods:* All paediatric CHD patients scheduled for cardiac surgery were included in this audit. Thoracic and general surgery patients were excluded. Any event in preoperative area, induction room, operating room and during transfer to cardiac ICU was documented in a predesigned proforma by resident/consultant. This proforma included information regarding demographics, the type and severity and responsible factors for the event.

*Results:* 134 patients were included in this two and half years audit. 88 patients were male (65.7%) and 46 (34.3%) were female. The age of the patients ranged from one day to 15 years. Total 105 incidents were noticed in 61 patients. 46 incidents were declared as major events which were potentially serious while 59 events were of minor nature. Cuffed endotracheal tube was used in 73% patients. The majority of events occurred in the prebypass period. Most of the incidents were related to cardiovascular system (73%), followed by pharmacological incidents. Human factors (74%) were mainly responsible for the incidents.

*Conclusion:* Incident reporting is a reliable and feasible method of improving quality care in developing countries. It helps in identifying areas which needs improvement and helps in developing guidelines to improve safety.

*Keywords:* Paediatric, congenital heart surgery, Errors

### 2.4 VASODILATORY EFFECTS OF ASPARAGUS OFFICINALIS SEED EXTRACT

*Hasan Salman Siddiqi, Moaz Aslam  
Department of Biological & Biomedical  
Sciences, Aga Khan University, Karachi*

*Background:* Hypertension, a major risk factor for diseases like ischemic heart disease and cerebrovascular stroke, is known to damage vital organs. Its prevalence is on the rise due to lack of compliance of patients to current management and thus the search for new treatments continues. Plants have been widely used for ages as a source of cure for numerous diseases. This study was undertaken to find evidence for the medicinal use of an edible herb *Asparagus officinalis* in hypertension using its seed extract.

*Methodology:* *In vitro* isolated tissue experiments were carried out using thoracic aortae from rats. Vascular reactivity was measured in isolated rat aortic rings by placing these in tissue baths filled with Krebs's buffer (37°C) bubbled with carbogen and connected to a force transducer and PowerLab attached with a computer.

*Results:* When tested on phenylephrine (PE, 1 µM) and K<sup>+</sup> (80 mM)-induced vasoconstrictions, the seed extract of *Asparagus officinalis* (Ao.Cr) caused a concentration-dependent relaxation in both types of contractions and also produced suppression of PE (1 µM) control peaks in Ca<sup>++</sup>-free medium. On the baseline of rat thoracic aortae, the plant extract initially caused phentolamine-sensitive vasoconstriction followed by vasodilation.

*Conclusion:* These data indicate that the vasodilator effect of the plant extract is mediated through inhibition of Ca<sup>++</sup> influx via membranous Ca<sup>++</sup> channels as well as Ca<sup>++</sup> release from intracellular stores. Vasodilatation in rat aortic ring tissues supports the antihypertensive potential of Ao.Cr; though further studies are required to establish a pharmacological basis for its use as an antihypertensive agent.

*Keywords:* *Asparagus officinalis*, Anti-hypertensive, Vasodilator

## 2.5 VASOMODULATORY EFFECTS OF MUCUNA PRURIENS SEED EXTRACT

*Hasan Salman Siddiqi, Maryam Tetlay  
Department of Biological & Biomedical  
Sciences, Aga Khan University, Karachi*

**Background:** Plants have traditionally been used in cardiovascular diseases and have shown interesting effects. *Mucuna pruriens*, the herb known to possess many medicinal properties, is also claimed to be a hypotensive agent although no published data could be found validating this activity. Hence this in vitro study was conducted to check the vasomodulatory effects of the seed extract of *Mucuna pruriens* in order to rationalize its use in medicine as an antihypertensive agent.

**Methods:** In vitro isolated tissue experiments were carried out using thoracic aortae from rats. Vascular reactivity was measured in isolated rat aortic rings by placing these in tissue baths filled with Krebs's buffer (37°C) bubbled with carbogen and connected to a force transducer and PowerLab attached with a computer.

**Results:** When tested on phenylephrine (PE, 1 $\mu$ M) and K<sup>+</sup> (80mM) -induced vasoconstrictions, the seed extract of *Mucuna pruriens* (Mp.Cr) caused initial vasoconstriction followed by a concentration-dependent relaxation in both types of contractions and also produced suppression of PE (1  $\mu$ M) control peaks in Ca<sup>++</sup>-free medium. On the baseline of rat thoracic aortae, the plant extract caused phentolamine-sensitive vasoconstriction.

**Conclusions:** The seed extract of *Mucuna pruriens* had a combination of vascular effects on the isolated rat aorta set up, vasoconstrictive effect mediated by alpha receptors and vasodilatory effect mediated by blocking voltage gated and receptor operated Ca<sup>++</sup> channels, as well as Ca<sup>++</sup> release from intracellular stores. Further investigations are needed to explore which effect dominates the other so that its role in the management of hypertension can be deter

**Keywords:** *Mucuna pruriens*, Vasomodulator, Antihypertensive

## 2.7 DIRECT TRUE LUMEN CANNULATION TECHNIQUE OF THE ASCENDING AORTA IN ACUTE AORTIC DISSECTION

*Fazal W. Khan, Syed Shahabuddin, Shahid Sami  
Department of Surgery, Aga Khan University,  
Karachi*

Surgery for ascending aortic dissection has remained a challenge for cardiac surgeons. Various approaches have been used to achieve arterial flow including femoral, axillary and ascending aorta into false or true lumen. We share our experience of three cases where we adapted the technique of direct true lumen cannulation to ensure antegrade perfusion. Three patients, all male, underwent surgery for ascending aortic dissection where cardio-pulmonary bypass was established utilizing the technique of direct true lumen cannulation of ascending aorta and right atrial cannulation. Two patients presented thru emergency room. Surgical sequence was sternotomy followed by tapes around aorta carefully. After full heparinization right atrial cannulation was performed. Carbon dioxide was insufflated in to the pericardial cavity. Patient was then put in trendelenberg position, heart fibrillated and drained to make him hypotensive for short period. At this stage aorta was opened and aortic cannula, already connected and primed, was inserted into true lumen under direct vision snugged with vascular tape and occlusion further ensured using IVC clamp. Cardiopulmonary bypass established and cooling started. Subsequent procedures completed on deep hypothermic circulatory arrest. All three patients were discharged home without any neurological complication and are being followed up in the outpatient clinic.

**Keywords:** Hypothermia, aortic root, aortic dissection

## 2.8 OUTCOMES OF AORTIC ROOT AND ARCH REPLACEMENT AT AGA KHAN UNIVERSITY HOSPITAL: SINGLE SURGEON EXPERIENCE

*Fazal W. Khan, Syed Shahabuddin, Benish Fatima, Mohsin Abbas, Nazish Gaziani, Ambreen Abid, Shumaila Farnaz, Shahid Sami*  
Department of Surgery, Aga Khan University,  
Ziauddin University and Dow University of  
Health Sciences, Karachi

*Introduction:* The first modern replacement of the ascending aorta with the use of cardiopulmonary bypass was reported by Cooley and DeBakey using an aortic allograft in 1956. In the last two decades, most centers consistently report an operative mortality for acute type-A dissection of between 10-20%. Objective This study was aimed to evaluate the outcomes in terms of mortality and morbidity of all patients who underwent aortic root/arch replacement procedures by single surgeon in a tertiary care hospital of South Asian Region. This study also shared the different techniques adopted for myocardium, cerebral and end organs protection in our set-up.

*Materials & Methods:* This was a retrospective chart review study from 1998 to 2013 by single surgeon. Charts selected using ICD-9 CM coding for aneurysm/dissection and aortic root/arch replacement. A Performa was designed and filled by the primary researcher. Charts with only type-A dissections, root, ascending and arch aneurysms were included. Outcome was evaluated using 30-day morbidity and mortality.

*Results:* A total of 37 cases were retrieved, out of which 2 were excluded due to missing files. 27 were males and 8 were females. 23 cases had aortic aneurysm and 12 had aortic dissection. The mean age was 42.6 +/- 6.2 years, range 13-72 years, mean BMI 25.1 +/- 2.2 kg/m<sup>2</sup>, mean ejection fraction 48.45 +/- 8.2, mean cross clamp time 137.4 +/- 15.2 minutes, mean cardiopulmonary bypass time 232.69 +/- 16.8 minutes and mean hospital stay 11.4 +/- 2.1 days. 30-day mortality was 11.4 %.

*Conclusion:* This study concluded that Aortic Root surgery is technically demanding. Our outcomes are comparable to western literature.

Being low facility nation we have adopted different innovations and improvised techniques to stand with the development in Aortic Root Surgery.

*Keywords:* Aortic root, aneurysm, aortic dissection

## 2.13 EUROSCORE VS. EUROSCORE II VS. SOCIETY OF THORACIC SURGEONS RISK ALGORITHM

*Irfan Qadir, Sardar Muhammad Alamzaib, Mohammad Ahmed, Shazia Perveen, Hasanat Sharif*  
Department of Surgery, Aga Khan University,  
Karachi

*Introduction:* This study presents a validation series for EuroSCORE II compared with the previous additive and logistic EuroSCORE and the Society of Thoracic Surgeons risk prediction algorithm.

*Patients and Methods:* Clinical data of 2004 patients undergoing isolated coronary artery bypass surgery between 2006 and 2010 were retrospectively collected and individual expected risks of death were calculated by all 3 risk prediction algorithms. Performance of these risk algorithms was evaluated in terms of discrimination and calibration.

*Results:* There were 76 deaths (3.8%) among 2004 patients. The mean EuroSCORE II predicted mortality was 3.72% 5.11%, additive EuroSCORE was 4.35% 3.65% and logistic EuroSCORE was 6.41% 10.06%. The additive EuroSCORE was better than EuroSCORE II in terms of both discrimination and calibration (C-statistic 0.866 and Hosmer-Lemeshow p value 0.230 vs. C-statistic 0.836 and Hosmer-Lemeshow p value 0.013 for EuroSCORE II). In a subset of 380 patients, we compared EuroSCORE II with the Society of Thoracic Surgeons risk prediction. Actual mortality was 2.89%. Predicted mortality by EuroSCORE II was 4.27% 5.22% and Society of Thoracic Surgeons risk prediction was 2.30% 4.16%. The area under the curve was 0.759 for EuroSCORE II and 0.898 for the Society of Thoracic Surgeons risk prediction, whereas the Hosmer-

Lemeshow p-value was 0.267 for EuroSCORE II and 0.981 for Society of Thoracic Surgeons risk prediction.

*Conclusion:* The Society of Thoracic Surgeons risk prediction algorithm is a better risk assessment tool compared to additive and logistic EuroSCORE and EuroSCORE II in Pakistani patients.

*Keywords:* EuroSCORE, Society of Thoracic Surgeons, risk stratification

## 2.14

### SENSITIVITY AND SPECIFICITY OF BEDSIDE TROPONIN I KIT: QUALITATIVE TEST AS COMPARED WITH THE STANDRED PRACTICE

*Javed Ismail, Junaid Alam Ansari, Syed Arsalan Ahmed, Sanam Anwer, Ghulam Ishaq Khan, Ovais Shamim*

*Department of Research and CME, Institute of Heart Diseases, Department of Cardiac Surgery, Tabba Heart Institute, Karachi Medical & Dental College and Neurology Section, University of Alabama School of Medicine, USA*

*Objective:* Our aim was to find out the sensitivity and specificity of (qualitative) troponin I kit against the quantitative lab kit for Troponin I.

*Material and Method:* Admitted patients of ACS/NSTEMI at Karachi Institute of Heart Diseases of both gender, were administered a standardized questionnaire. Quantitative analysis of Trop I was carried out by the hospital laboratory. At the same time sample was used for qualitative analysis of Troponin I by using Troponin I test kit.

*Results:* We recruited 50 patients in which 37 (74%) were male. Hypertensive 32 (64%), dyslipidemia in 13 (26%), family history in 15 (30%), DM in 16 (32%) smoking was prevalent in 11 (22%), previous MI in 10 (20%). The kit showed 97% sensitivity and 100% specificity as compared to the quantitative test with a cutoff of 0.30 ng/dl, i.e.; quantitative test showed 32 positive and 18 negative cases, whereas qualitative test shows 31 positive and 19

negative. The difference in test results was on a value of 0.40 ng/dl, as qualitative test showed it as negative result.

*Conclusion:* Study showed that qualitative kit is highly sensitive and specific at higher values of Troponin I, i.e.,  $\geq 0.5$  ng/dl. The qualitative test could be very beneficial in cost and time saving for the non-conclusive patients, like NSTEMI and ACS in emergency department and patients coming to outreach chest pain centers where laboratory services are not adequate, and whose Trop I values are not very close to the minimum cut off values.

*Keywords:* Sensitivity, specificity, myocardial infarction, Troponin I

## 2.15

### LEVEL OF KNOWLEDGE AMONG CARDIAC HEALTH CARE PROFESSIONALS REGARDING SEXUAL COUNSELING OF POST-MI PATIENTS IN THREE TERTIARY CARE HOSPITALS OF KARACHI, PAKISTAN

*Layla Abdullah, Fauziya Ali, Elaine Steinke, Aamir Hameed Khan, Saleema Allana School of Nursing & Midwifery, Aga Khan University, Norquest college of Nursing, Edmonton, Wichita state university, Department of Medicine, Aga Khan University, Karachi*

*Introduction:* Despite the widely acknowledged significance of health care professionals role in providing sexual counseling to post MI patients, this sensitive area has often remained neglected in practice and research.

*Objective:* The current study aimed to measure the level of knowledge among cardiac HCPs regarding sexual counseling of post-MI patients. The study also aimed to explore the level of knowledge amongst physicians and nurses, between male and female HCPs, between experienced and novice HCPs, and between those working in private and government hospitals.

*Methodology:* This descriptive cross-sectional study was conducted on 225 HCPs at three hospitals between April and June, 2013. Data was collected through a structured questionnaire

on HCPs' level of knowledge regarding sexual counseling.

*Results:* The findings of the present study revealed that the mean total knowledge score for sexual counseling of post MI patients was significantly higher among physicians than among nurses. The level of knowledge among HCPs working in private healthcare settings was higher than those working in the government setting. The study also found significant differences in terms of study specific questions. Nurses have better knowledge in areas such as frequency of sexual activity after MI, resumption of sexual activity, and use of nitroglycerin if chest pain occurs during sexual activity; while physicians have better knowledge about effects of cardiac drugs on sexual function.

*Conclusion:* This study concludes that the mean level of knowledge regarding post-MI sexual counseling is higher among physicians than nurses, and both the groups have different knowledge scores on study

*Keywords:* Sexual counseling, Health care professionals, knowledge

## **2.16** INSIGHT INTO MECHANISMS MEDIATING THE EFFECTIVENESS OF MATRICARIA CHAMOMILLA IN CARDIOVASCULAR DISORDERS

*Malik Hassan Mehmood, Muhammad Waleed,  
Muhammad Hamza Khan, Anwar Hassan Gilani  
Department of Biological & Biomedical  
Sciences, Aga Khan University, Karachi*

*Background and Objective:* Medicinal herbs have been used through dawn of the history to treat various diseases, such as cardiovascular disorders and are serving as best alternative remedies to combat ever-increasing disease burden in the society. This provides pharmacological basis to the medicinal use of *Matricaria chamomilla* in cardiovascular disorders.

*Methods:* In vitro experiments on isolated rat aorta were carried out. The spasmolytic effect of different concentrations of crude extract of

*Matricaria chamomilla* (Mc.Cr) was studied on phenylephrine (P.E 1 $\mu$ M) and high K<sup>+</sup> (80 mM)-induced contractions in rat aortic tissue segments, placed in a tissue organ bath filled with Krebs's solution. responses of the test material in isolated tissues were measures using isotonic transducers coupled with PowerLab data acquisition system.

*Results:* The extract of *Matricaria chamomilla* showed both vasoconstrictive and dose dependent vasodilatory effects on isolated rat aorta. It showed both vasodilatation and vasoconstriction on contraction induced on aortic tissue. On basal tone, Mc.Cr showed phentolamine sensitive vasoconstriction effect, while against induced contraction of high K<sup>+</sup> (80 mM) and P.E, the plant extract exhibited dose dependent relaxation. When tested in Ca<sup>2+</sup> free Krebs's solution for its effect on P.E-evoked contractile peaks, Mc.Cr caused attenuation at 1-5 mg/ml showing its inhibitory effect on the release of Ca<sup>2+</sup> from intracellular stores.

*Conclusion:* These results indicate that *Matricaria chamomilla* extract possesses vasomodulatory constituents possibly mediating through effect through Ca<sup>2+</sup> antagonistic and  $\alpha$  adrenergic receptor modulating activities.

*Keywords:* *Matricaria chamomilla*, Ca<sup>2+</sup> antagonist,  $\alpha$  adrenergic receptor modulator

## **2.17** TRENDS IN CORONARY ARTERY BYPASS SURGERY: IMPACT ON EARLY OUTCOMES

*Muhammad Musa Salick, Irfan Qadir, Shazia  
Perveen, Shumaila Furnaz, Hasanat Sharif  
Department of Surgery, Aga Khan University,  
Karachi*

*Background:* Improvements in nonsurgical revascularization have left a group of higher-risk patients presenting for operation in a later stage of coronary artery disease. We undertook this study to analyze temporal changes in demographic and clinical profiles and outcomes of cardiac surgical patients.

*Methods:* We identified and retrieved pre-operative, intraoperative, and postoperative

variables for 3064 consecutive patients who underwent myocardial revascularization at the Aga Khan University Hospital between 2006 and 2011. Mortality and morbidity outcomes were compared using univariate and multivariate analyses.

**Results:** Mean age, prevalence of left ventricular systolic dysfunction, unstable angina, mean number of occluded vessels, and arrhythmias at presentation increased steadily over time. The prevalence of diabetes, chronic lung disease, peripheral vascular disease, prior stroke, prior myocardial infarction, and left main disease declined. Operative mortality did not change significantly (3.5% vs. 3.8%,  $p = 0.512$ ). Determinants of operative mortality included older age, female sex, renal insufficiency, left ventricular systolic dysfunction, and longer bypass and crossclamp times.

**Conclusion:** Coronary operations are increasingly performed in higher-risk patients with greater comorbidities. Despite this, operative mortality has not increased.

**Keywords:** Trends, Pakistan, cardiovascular

## 2.18

### ASSESSMENT OF OUTCOMES OF CABG FOR UNPROTECTED LEFT MAIN DISEASE AND MULTIVESSEL DISEASE IN A TERTIARY CARE CENTER OF PAKISTAN

*M. Shahjahan Khan, Maryam R. Sheikh  
Department of Radiology, Aga Khan University,  
Karachi*

Coronary artery disease (CAD) and its associated myocardial dysfunction poses a great burden in terms of morbidity and mortality. Left Main lesions (stenosis > 50%) and multivessel disease (2 or 3 vessel disease) are often associated with advanced disease, the presence of multiple co-morbid and significantly increased mortality. Both CABG and PCI with drug eluting stents have become possible revascularization options. However, the choice of treatment is often questionable with the increased use of PCI and decrease referrer for CABG. International data supports the use of CABG in high risk groups; however, regional

data about the outcomes of CABG in high risk populations is scarce. We conducted a retrospective observational study to determine the in hospital and follow-up mortality and morbidity in patients undergoing CABG for Left main disease and Multivessel disease. A total of over 2500 patients were included in the study who had angiographically proven left main disease or multivessel disease and had undergone CABG. The FREEDOM trial conducted on diabetic patients in whom revascularization was indicated concluded that CABG significantly reduces the risk for post operative adverse outcomes compared with PCI. The Mortality and morbidity figures for CABG of our population were comparable to international literature. Additionally, the characteristics of our study population highlighted the high prevalence of Diabetes and Metabolic Syndrome in our region. Data suggest that the majority of patients in our region fall into the high risk category for whom CABG would be the most suitable option and the accelerating use of PCI appears to be unwarranted and not evidence based.

**Keywords:** CABG, LMCA, multivessel disease

## 2.19

### EFFECTS OF ARECA NUT ON CARDIOVASCULAR RISK FACTORS IN AN ANIMAL MODEL

*Naseema Mehboobali, Mohammad P. Iqbal,  
Ghulam Haider, Shahid Pervez, Iqbal Azam  
Departments of Biological & Biomedical  
Sciences, Pathology & Microbiology and  
Community Health Sciences, Aga Khan  
University, Karachi*

**Background:** Areca nut (betel nut) chewing is associated with metabolic syndrome and cardiovascular disease (CVD). The mechanism by which betel nut ingestion leads to development of CVD is not precisely known; however, dyslipidemia, hyperhomocysteinemia, hypertriglyceridemia and inflammation could be some of the potential risk factors. This study was undertaken to investigate the effects of two dosages of betel nut on homocysteinemia,

inflammation and some of the components of metabolic syndrome, such as hypertriglyceridemia, low HDL-cholesterol, obesity and fasting hyperglycaemia in a rat model.

*Methods:* Thirty-six adult female Sprague Dawley rats, aged 10–12 weeks were divided into three equal groups, First (control) received water, second and third received water suspension of betel nut in dosages 30mg and 60mg, respectively orally for a period of 5 weeks. After that, the animals were weighed and sacrificed. Blood was collected and analyzed for glucose, total cholesterol, HDL, LDL, triglycerides, homocysteine and N-acetyl- $\beta$ -D-glucosaminidase (NAG). Organs were removed for histological examination.

*Results:* Mean values of three groups were compared using one way ANOVA followed by Tukey's HSD-test. There was a significant increase in the concentration of total cholesterol ( $p = 0.04$ ) in the group receiving 30 mg/day betel nut compared to the control group. No significant effect was observed on glucose, total cholesterol, HDL-cholesterol, LDL-cholesterol, and NAG at higher dose of betel nut (60 mg/day). Histological examination of spleen revealed a dose-dependent extramedullary haematopoiesis.

*Conclusion:* Low dosage of betel nut is found to be associated with hypercholesterolemia. But betel nut ingestion is not associated with homocysteinemia, hyper-glycaemia, inflammation and increase in body weight in a rat model.

*Keywords:* Cardiovascular disease, Hypercholesterolemia, Betel nut, rat model

## 2.20

### PROMOTING DIETARY CHANGE AND POSITIVE FOOD CHOICES FOR POOR PEOPLE WITH LOW INCOME WHO EXPERIENCE CARDIOVASCULAR DISEASE IN PAKISTAN

*Rubina Barolia*

*School of Nursing & Midwifery, Aga Khan University and University of Alberta*

*Introduction:* There is a misconception that cardiovascular disease (CVD) is the burden of wealthy nations, but, in fact, it is the leading

cause of death and disability-adjusted life worldwide. Healthy diets are an essential factor in the prevention of CVD and promoting healthy diet is a challenge, particularly for people with low socioeconomic status (SES). Multiple influences such as financial and structural factors, cultural values, and beliefs interact and make healthy eating very challenging and sometimes impossible. The effects of these factors in the context of low SES populations with CVD are largely unknown. To address this gap, this research study will examine the factors that affect decisions about consuming healthy diet in Pakistanis with low SES who suffer from CVDs and the influence of gender in making food choices.

*Methods and Analysis:* A qualitative method of interpretive description (ID) will be used. Twenty-five participants will be selected from two cardiac rehabilitation (CR) centres in Karachi, Pakistan. Face-to-face semistructured interviews using a critical realist framework will be used to understand individual and contextual factors in the food choices of people with low SES and CVD. ATLAS.ti qualitative data analysis software will be used to identify themes and patterns in the interview data. Ethics and discussion Ethical approvals was received from the Ethics Review board of University of Alberta, Canada and Aga Khan University, Karachi Pakistan has granted the permission to conduct this research The findings will generate new knowledge about which and how factors influence the food choices of Pakistanis with CVD and low SES to provide insight into the development of an operational framework for designing interventions for primary and secondary prevention of CVD.

*Preliminary Findings:* Despite of healthy diet awareness people are unable to eat healthy diet. There are multiple factors that promote or prevent CVD patients to consume healthy diet. They are Money, religion, family tradition, food attitude, social pressure, self-determination hope and despair, power and equity. It is important for health care team to develop contextual based preventive approach to reduce the burden of CVD in Pakistan.

*Keywords:* Cardiovascular disease, low socioeconomic status, dietary pattern



## 2.21

### COMPARISON OF SUPERIOR SEPTAL APPROACH WITH LEFT ATRIAL APPROACH FOR MITRAL VALVE REPLACEMENT: A RETROSPECTIVE COHORT STUDY

Taimur Asif, Tooba Ansar, Saulat Fatimi, Saneeha Shahid, Ghulam Murtaza  
Department of Surgery, Aga Khan University, Karachi

**Background:** For mitral valve replacement (MVR), the mitral valve may be exposed by Superior Septal Approach (SSA) or Left Atrial Approach (LAA). There still remains clinical equipoise regarding the choice of approach.

**Methods:** After exclusion, records of 78 patients who had undergone isolated MVR from May 2003 to April 2012 were retrospectively reviewed from AKUH data which included files and electronic media.

**Results:** A total of 78 cases were included in the study with 52 belonging to the SSA and 26 to the LAA. The subjects comprised of 55 females and 27 males. The cardiopulmonary bypass time was significantly shorter in the SSA vs. LAA [ $106.19 \pm 33.87$  minutes vs.  $122.04 \pm 27.37$  minutes, ( $p < 0.05$ )], whereas the cross-clamp time was  $77.46 \pm 24.80$  minutes in the former and  $91.04 \pm 21.55$  minutes in the latter ( $p=0.02$ ). There was no significant difference between the two approaches in terms of intra operative complications, blood loss and residual atrial septal defect. 48.1% ( $n=25$ ) of the SSA patients had a loss of normal sinus rhythm as compared to 38.5% ( $n=10$ ) of LAA patients ( $p=0.475$ ). The commonest rhythm disturbance was atrial fibrillation in both groups ( $n=12$  in SSA and  $n=6$  in LAA). Most abnormal rhythms in both groups reverted to normal within the follow-up period of a year. The two groups showed no difference in mortality rate.

**Conclusion:** Both procedures i.e. SSA and LAA yielded comparable outcomes. The significantly lesser operative parameters SSA may be related to surgeon-dependent factors. Further study is required to validate the findings.

**Keywords:** Mitral valve replacement, superior septal approach, left atrial approach

## 2.22

### EFFECT OF POTENTIALLY MODIFIABLE RISK FACTORS ASSOCIATED WITH MYOCARDIAL INFARCTION IN PAKISTANI POPULATION: THE INTERHEART PAKISTAN STUDY

Kazmi K.<sup>1</sup>, Iqbal R.<sup>1,2</sup>, Yakub M.<sup>3</sup>, Naureen G.<sup>2</sup>  
Departments of Medicine<sup>1</sup>, Community Health Science<sup>2</sup> and Biological and Biomedical Sciences<sup>3</sup>, Aga Khan University, Karachi

**Background:** Although more than 80% of the global burden of cardiovascular disease occurs in low-income and middle-income countries, including Pakistan. Association between various risk factors and development of coronary heart disease in Pakistan is unknown.

**Objectives:** To find out the association between risk factors and coronary heart disease in Pakistan

**Methods:** A standardised case-control study of acute myocardial infarction was conducted. 637 cases and 655 controls were enrolled. The relation of smoking, history of hypertension or diabetes, waist/hip ratio, diet, physical activity, consumption of alcohol and blood apolipoproteins (Apo) with myocardial infarction are reported here. Logistic regression analysis was conducted using SPSS v. 11. Odds ratios and their 99% CIs for the association of risk factors to myocardial infarction were calculated.

**Findings:** Overall model showed that odd ratios for smoking (2.25, 99% CI: 1.52 -4.08) diabetes (2.49, 99% CI: 1.52 – 4.08), hypertension (2.04; 99% CI: 1.34 – 3.11), exercise (0.57, 99%CI: 0.33-0.97) and raised ApoB/ApoA1 ratio (3.31 99%CI: 1.69-6.45) were significantly associated with acute myocardial infarction.

**Interpretation:** Abnormal lipids, smoking, hypertension, diabetes, consumption of fruits and vegetables and regular exercise account for most of the risk of myocardial infarction in Pakistani population and particularly in men. This finding suggests that approaches to prevention can be based on similar principles and have the potential to prevent development of myocardial infarction in Pakistani population.

**Keywords:** Myocardial infarction, risk factors, Interheart study, Pakistan

### 2.23

#### ABLATION OF A COMPLEX WOLF PARKINSON WHITE SYNDROME: BETTER IS THE ENEMY OF GOOD

*Maryam Saleem, Aamir Hameed Khan  
Section of Cardiology, Department of Medicine,  
Aga Khan University, Karachi*

Wolf Parkinson White syndrome (WPW) has an associated risk of sudden cardiac death. This risk is approximately 1 in 1000 per year. Not all patients with WPW carry equal risk of sudden death. The risk is more in patients with associated atrioventricular tachycardia (AVRT) both ortho and antidromic, patients with atrial fibrillation (AF) and rapid ventricular response with the shortest RR interval < 250 ms, rapidly conducting pathway with effective refractory period of <250 ms, multiple pathways and family history of WPW. The mechanism of SCD described in the literature is AVRT transitioning to AF and then ventricular fibrillation (VF). We describe the case of a 27 year old man with recurrent palpitations. His examination was unremarkable, his echocardiogram showed normal LV function. The ECG showed WPW with a possible right posteroseptal accessory pathway. He underwent an electrophysiologic study (EPS), which revealed a bidirectional right posteroseptal pathway (RPSP) and an inducible wide complex tachycardia (LBBB morphology). This tachycardia spontaneously morphed into sustained AF with rapid ventricular rate (RVR) requiring cardioversion (DCCV). During ventricular pacing the AP was successfully ablated. Post ablation single beats of LBBB morphology with short PR interval revealed another right sided AP. This AP was decremental and was consistent with an atriofascicular pathway (Mahaim pathway). The clinical AVRT was using the Mahaim AP as antegrade limb and right posteroseptal pathway as the retrograde limb. Post ablation there was no VA conduction and no AVRT. The Mahaim AP could not be ablated due to recurrent AF requiring multiple DCCV. Post ablation on dobutamine the AF with the shortest RR interval was 270 ms making this a low risk AP. In view of the first AP ablation, the second AP being a

low risk decremental AP a relatively higher risk of ablation further ablation was not performed.

*Keywords:* WPW, Mahaim pathway, AVRT, ablation

### 2.24

#### A TENNIS BALL IN THE CHEST: A LARGE ASCENDING AORTIC ANEURYSM

*Sadia Arshad  
Section of Cardiology, Department of Medicine,  
Aga Khan University, Karachi*

*Case summary:* A 75 year old hypertensive lady presented to the clinic with a history of cough and occasional dyspnea on exertion for the past 3 months. She also complained of occasional chest and left arm pain. She was hemodynamically stable on clinic presentation. Radial and brachial pulses were not palpable in the left upper extremity. Pulses in the lower extremities were diminished. The chest was clear and no murmurs or added sounds were audible on auscultation. There were bilateral carotid bruits more prominent on the right side. She had undergone a CT scan at an outside facility the images are reproduced

*Discussion:* Stanford type A dissections, ones that involve the ascending aorta are generally to be treated as a surgical emergencies since these patients are at a high risk for life-threatening complications such as acute aortic regurgitation, heart failure, cardiac tamponade and MI. The mortality rate is as high as 1 to 2 percent per hour early after symptom onset. The first 48 hours are crucial because early diagnosis and treatment confers a better outcome. Older age, sudden onset of symptoms, the presence of cardiogenic shock, renal dysfunction and ECG changes, (especially ST elevations) are all predictors of a worse outcome.

*Keywords:* Aortic, dissection, ascending aorta

## 2.25

### FREQUENCY OF PERIPROCEDURAL MYOCARDIAL INFARCTION IN ELECTIVE CORONARY ANGIOPLASTY

*Abdul Baqi, Khawar Abbas Kazmi  
Section of Cardiology, Department of Medicine,  
Aga Khan University, Karachi*

**Background:** Cardiovascular disease is a leading cause of death worldwide. Besides risk factors modification and optimal medical therapy, Coronary angioplasty is one of the main stream line parts of the management protocol in coronary artery disease. Periprocedural myocardial infarction (PMI) is an important procedure related complication during coronary angioplasty, which is associated with increased mortality and present in 24% elective coronary angioplasty as per literature review. Study is warranted to determine the incidence of PMI in patients presented to tertiary care hospital.

**Objective:** To determine the frequency of periprocedural myocardial infarction in patients with stable coronary artery disease undergoing elective coronary angioplasty.

**Methods:** This was a cross-sectional study, conducted over period of 6 months in section of cardiology the Aga Khan University hospital. Patients were prospectively enrolled from the in-patients and CK-MB level were measured immediately and 6 hours after angioplasty. Significance of differences in mean CK-MB level over time was tested by paired t-test. P value  $\leq 0.05$  was considered to be significant.

**Results:** Of the total 110 patients, there were 90 (81.8%) male and 20 (18.2%) female. Mean  $\pm$  standard deviation age of the study population was  $59.8 \pm 9.47$ . Overall PMI was present in 22/110 (20%) patients. PMI was present in males and females 17 (77.3%), 5 (22.7%) respectively. Out of total 22 patients 4 (18.2%) were under 50 years and 18 (81.8%) were over 50 years. Mean  $\pm$  standard deviation CK-MB level immediately and 6 hours after coronary angioplasty was  $4.09 \pm 6.49$  and  $9.13 \pm 14.47$ .

**Conclusion:** Frequency of periprocedural myocardial infarction is comparable in this study to that observed internationally. Further studies are required to confirm these findings in our population.

**Keywords:** Coronary angioplasty, periprocedural myocardial infarction, Creatine Kinase myocardial band.

## 2.26

### CORONARY ARTERY FISTULA AND MYOCARDIAL INFARCTION- A CASE REPORT

*Ghulam Hussain Soomro, Javed Tai, Hafeez Ahmed, Fahad Shamsi  
Section of Cardiology, Department of Medicine,  
Aga Khan University, Karachi*

Coronary artery fistulas are rare congenital or acquired coronary artery anomalies that can originate from any of the three major coronary arteries & drain in all the cardiac chambers & great vessels. A combination like the one described in the present case, patient presented with myocardial infarction, is unusual since fistulas originate from left coronary artery in about 35% cases & drain into the pulmonary artery occurs in only 17%.

**Key words:** Coronary artery fistula, Myocardial infarction, ACS, Congenital malformation.

## 2.27

### RECURRENT BACTERIAL ENDOCARDITIS AFTER PROSTHETIC VALVE REPLACEMENT FOR NATIVE VALVE ENDOCARDITIS COMPLICATED BY PERIVALVULAR ABSCESS: A CASE REPORT

*Arshad Sadia, Tipoo Fateh Ali, Alauddin Umaira  
Section of Cardiology, Department of Medicine,  
Aga Khan University, Karachi*

**Introduction:** Infective endocarditis involving left side of heart remains a major medical problem with numerous complications and considerable morbidity and mortality despite advancements in surgical and medical management ; Presence of prosthetic valve is one of the major factors associated with

shortened overall survival in patients with IE and increases the risk of recurrence of endocarditis after valve replacement for native valve endocarditis (NVE); with recurrence rates varying from 10-15%. This is a unique case report that highlights recurrent infective endocarditis after prosthetic valve replacement for NVE; with initial native valve disease complicated by perivalvular abscess and heart failure and later on prosthetic valve endocarditis (PVE) complicated by stroke and perivalvular leakage and regurgitant murmur leading to redo MVR.

*Case Report:* 56 year old gentleman presented to the medicine department of AKUH with a 15-20 days history of high grade fever, GI discomfort and dysuria. Examination revealed a PSM radiating to axilla and Blood culture showed MRSA. Transthoracic and Trans esophageal echo revealed vegetations on both leaflets of mitral valve with a perivalvular abscess. Antibiotics were started, but since the course was complicated by CHF, early MVR was done with bio prosthetic valve. 2 years later, the patient landed with PVE complicated by Right MCA infarct, coagulase negative Staphylococcus (not aureus) on blood culture and vegetation with increased gradients on TEE. Patient was treated medically with antibiotics and anticoagulants and discharged only with follow up echocardiograms; only to be readmitted 3 months later for redo MVR as the patient developed perivalvular leakage and severe MR. Conclusion: Recurrent infective endocarditis after prosthetic valve replacement for NVE adds to increased morbidity and mortality already associated with left sided endocarditis. The cause is multifactorial; duration of antibiotic therapy, complications and timing of surgery and surgical procedure performed, all play an important etiological role. Perivalvular abscess is a feared complication of left sided endocarditis and should be treated with antibiotics and surgically.

*Keywords:* infective endocarditis, PVE: prosthetic valve endocarditis, NVE: native valve endocarditis,

## 2.28

### PRIMARY PERCUTANEOUS CORONARY INTERVENTION OF AN ANOMALOUS RIGHT CORONARY ARTERY ARISING FROM THE LEFT CORONARY CUSP USING A JUDKINS LEFT CATHETER: A CASE REPORT

*Javed Tai, Fahad Shamsi*

*Section of Cardiology, Department of Medicine, Aga Khan University, Karachi*

Coronary anomalies are rare angiographic findings. Occlusion of an anomalous right coronary artery arising from left cusp is a rare cause of acute inferior wall myocardial infarction. Percutaneous coronary intervention (PCI) can be difficult in patients who have a culprit lesion in a coronary artery that arises from the opposite sinus of Valsalva. These arteries can be difficult to visualize by coronary angiography and are even harder to cannulate & achieve guide stability for PCI. Here we report a case of a 69 years old man who presented with an acute inferior wall myocardial infarction due to occlusion of an anomalous right coronary artery arising from left coronary cusp. A left Judkins guide was used to perform successful primary percutaneous coronary intervention for this anomaly.

*Keywords:* Anomalous right coronary artery, Primary percutaneous coronary intervention, Judkins left catheter.

## 2.29

### VERY LATE BARE-METAL STENT THROMBOSIS: A CASE REPORT

*Fahad Shamsi, Javed Tai*

*Section of Cardiology, Department of Medicine, Aga Khan University, Karachi*

Stent thrombosis (ST) is an acute thrombotic occlusion in the stented segment of a coronary artery. It is a serious complication that frequently presents as an acute myocardial infarction and/or sudden death. The most recently accepted definition established by the Academic Research Consortium classifies ST as:

early (occurring within 30 days), late (30 days to 1 year) or very late (after 1 year). Very late ST has been reported following drug-eluting stent implantation with rates up to 0.6% per year. However, very late ST is unusual after bare-metal stent (BMS) implantation. Here we report a case of patient presenting with ST-elevation myocardial infarction due to very late ST occurring 2 years after BMS implantation.

*Keywords:* Stent thrombosis, Percutaneous coronary intervention, Bare metal stent

### 2.30 HYPEREOSINOPHILIC SYNDROME IN A PATIENT WITH CARDIAC INVOLVEMENT

*Abdul Baqi, Fateh Ali Tipoo Sultan,  
AamirHameed Khan  
Section of Cardiology, Department of Medicine,  
Aga Khan University, Karachi*

*Introduction:* Idiopathic hypereosinophilic syndrome (HES) is characterized by eosinophilia without identifiable cause and multi-organ dysfunction, most frequently involving heart, nervous system and lungs. This case is remarkable as less than 40% of patients with HES have cardiac involvement. In addition, a literature review revealed no previous report of HES with cardiac involvement from Pakistan.

*Case description:* A 48-year old male presented to hospital with history of shortness of breath and fever for one month. Physical examination was unremarkable. Laboratory findings demonstrated WBC count of  $22 \times 10^9/L$  with 43% eosinophils. Chest x-ray was unremarkable. Spirometry was negative for obstructive and restrictive lung disease. CT scan was unremarkable for any abnormality in lungs, liver, pancreas and kidneys. Tumor markers were negative. Bone marrow biopsy was remarkable for hypercellularity exhibiting increased eosinophils. Echocardiography was remarkable for normal left ventricular (LV) systolic function, grade II diastolic dysfunction and echogenic densities in both ventricular apices. Cardiac magnetic resonance revealed endomyocardial fibrosis and LV apical thrombus. He was managed with diagnosis of

idiopathic HES. Medical management consisted of steroid, hydroxyurea and imatinib mesylate for eosinophilia, ACE inhibitor for LV diastolic dysfunction and oral anticoagulation for apical thrombi. The Patient was followed for one year. His symptoms improved with no shortness of breath now and WBC count is  $8 \times 10^9/L$  with 0.9% eosinophil. Repeat echocardiography revealed normal LV systolic as well as diastolic function.

*Discussion:* This case illustrates the potential benefit of above treatment for idiopathic HES and ACE inhibitor for LV diastolic dysfunction. Early institution of these drugs can reduce morbidity and mortality. Research on this topic is recommended.

*Keywords:* Hypereosinophilic syndrome, cardiac involvement

### 2.31 IS A POST PACEMAKER IMPLANTATION ROUTINE CHEST X RAY NECESSARY?

*Aamir Hameed Khan, Khawar Abbas Kazmi,  
Azam Shafquat, Qamaruddin Roziman  
Heart Rhythm Management, Section of  
Cardiology, Department of Medicine, Aga Khan  
University, Karachi*

*Introduction:* The routine use of post pacemaker implantation chest X ray (CXR) to rule out pneumothorax and check lead position is a practice according to established protocols. Life time exposure to medical radiation is increasing. As the dose of radiation is cumulative it is vital to reduce radiation exposure.

*Methods:* A retrospective study at the Aga Khan University hospital to assess the need for a post implantation CXR. All patients undergoing pacemaker implantation between October 2009 and December 2012 were included. The center had three implanting physicians.

*Results:* A total number of 317 cases. Sixty seven percent were males, the mean age of the dual chamber (DC) group was 68.2 years, age range (22 to 91 years), and while for the single chamber pacemaker (SC) it was 70 years with age range 24 to 93 years. Except for one patient who had cephalic cut down, the rest underwent

subclavian vein (SCV) puncture. The subclavian vein puncture was done under fluoroscopy. Pneumothorax occurred in 2 cases (0.63%). Both cases were during DC pacemaker implantation. Both cases required chest tube insertion. Acute lead displacement occurred in 5 cases (1.57%). The lead displacement occurred after the post procedure CXR as per protocol. These were all picked up by symptoms and pacemaker interrogation, where failure to capture and under-sensing was noted. Both pneumothorax patients had structural chest and lung abnormality; one had kyphoscoliosis, while the other had severe left apical lung fibrosis (pulmonary TB).

*Conclusion:* Pneumothorax occurred in 0.63% of the cases which could be predicted pre procedure and the lead displacement occurred later and was picked up through device interrogation and symptoms. In the normal SCV puncture provided the pre-implantation CXR was normal and post implantation physical examination was normal a CXR did not add to the management.

*Keywords:* PPM, complication, pneumothorax, lead displacement, CXR, radiation

### 2.32

#### DUAL CHAMBER IMPLANTATION VIA A RIGHT INTERNAL JUGULAR VEIN: A PATH LESS OFTEN TAKEN

*Momina Waqar, Aamir Hameed Khan  
Heart Rhythm Management, Section of  
Cardiology, Department of Medicine, Aga Khan  
University, Karachi*

The Left subclavian vein (LSCV) is most used for implantation due to its facilitatory course. However, rarely the subclavian veins are stenosed due to previous implants or chronic use of hemodialysis (HD) catheter, well known to cause silent stenosis. The right internal jugular vein (RIJ) is often used for central venous access but not for device implantation due to need for tunneling of leads subcutaneously. A 64 year old man presented to in the clinic with syncope and transient third degree AV block. The baseline ECG showed a PR interval of 420ms. The

patient had chronic kidney disease (CKD) on HD with an AV fistula on the left arm. Keeping the left side for HD, we approached the right SCV. The puncture was successful but with failure to advance guide wire beyond the RSCV. Radio-contrast injection revealed 100% stenosis of the RSCV with collateral formation. Venous access was then achieved via the right internal jugular vein. A 5 French sheath was advanced and then two guide wires were introduced and positioned in the inferior vena cava (IVC). Both these wires were used to place permanent leads in the RV apex and RA appendage. The sensing and pacing thresholds were optimal. Both the leads were then tunneled under the subcutaneous tissue and over the right clavicle into the preformed subcutaneous pocket in the right infraclavicular region. The leads were anchored with silk 2.0 on the sternocleidomastoid muscle in the neck and in the infraclavicular pocket using prolene 2.0. The RIJ site and the pocket were closed in layers with vicryl 2.0 sutures. The patient was discharged home on antibiotics. Follow-up at one week with optimal parameters (RA sense: 2.28 mV, RV sense 8.0 – 11.2 mV, RA and RV pace 0.5V@0.5 ms). At 3 months the scars were well healed.

*Keywords:* Jugular approach, PPM insertion, subclavian stenosis

### 2.33

#### COR-TRIATRIATUM IN AN ADULT- A RARE FINDING

*Syedah Saira Bokhari, Fateh Ali Tipoo Sultan  
Section of Cardiology, Department of Medicine,  
Aga Khan University, Karachi*

*Background:* Cor-triatriatum is a rare congenital cardiac anomaly with incidence ranging from 0.1-0.4%. In this condition, a fibromuscular membrane divides the left atrium into two chambers: superior and inferior. This fibromuscular membrane may be obstructive (75%) or non-obstructive. The superior chamber may variously receive pulmonary venous drainage. Symptoms depend on the degree of obstruction and associated anomalies.

Occasionally, it may be diagnosed incidentally in adults but this is exceedingly rare.

*Case History:* We present the case of a 55 year old hypertensive lady who presented with left sided weakness. She was diagnosed with right middle cerebral artery stroke. Her electrocardiogram revealed left atrial enlargement and left ventricular hypertrophy. Echocardiography was performed as part of stroke and hypertension assessment. Transthoracic echocardiography revealed a membrane which was dividing the left atrium into two chambers, without evidence of significant obstruction.

Two (right sided) pulmonary veins were visualized, the remaining two could not be identified. In addition, aneurysmal interatrial septum with a small atrial septal defect with left to right shunt was noted, which was confirmed by agitated saline contrast study. These findings were highly suggestive of cor-triatriatum.

A trans-esophageal echocardiogram (TEE) was also performed to further delineate membrane characteristics and pulmonary venous drainage. TEE additionally demonstrated that two right sided and one left sided pulmonary veins were opening into the upper chamber while one left sided pulmonary vein was probably opening into the lower chamber. The communication between the superior and inferior left atrial chambers was not visualized but it was likely non-obstructive in view of the absence of symptoms, turbulent flow, and pulmonary hypertension. The patient was advised anticoagulation in view of stroke in the presence of aneurysmal inter-atrial septum with a septal defect. However, the presence of cor-triatriatum in this patient was considered to be non-contributory. This patient was referred for cardiac surgery consultation regarding ASD closure and resection of the left atrial membrane. However, the patient and family were unwilling for any intervention and were discharged and subsequently lost to follow up.

*Conclusion:* Cor-triatriatum is an unusual congenital cardiac malformation. Incidental diagnosis in an adult is an exceedingly rare presentation.

## 2.34

### SUPERIOR VENA CAVA BREACH A SEVERE COMPLICATION OR A BENIGN ENTRY?

*Aamir Hameed Khan*

*Heart Rhythm Management, Section of Cardiology, Department of Medicine, Aga Khan University, Karachi*

Perforation at the level of the superior vena cava (SVC) and right atrium (RA) junction can be a lethal complication. Therefore, it is always prudent to advance the guide wire as well as the dilator with sheath under fluoroscopy. If a perforation occurs the lead will go out of the SCV-cardiac silhouette. This perforation is extra-pericardial and due to negative intra-thoracic pressure can cause rapid exsanguination. However, if this extra-cardiac course of the pacing lead was in a normal vascular conduit, undue emergent measures would not be instituted. Knowledge of the variation in cardiac anatomy is vital for the implant physician. We describe a 74 year old woman with symptomatic sinus node disease. Advancing the wire through the left subclavian vein (LSCV) proved challenging due to an inferior sharp dip that directed the wire superiorly. This was confirmed with IV contrast injection. First of the two guide wires was used and after removal of the dilator the RV lead was advanced after manipulation at the junction of the right atrium. The lead met resistance just above the diaphragm. A contrast injection in AP and LAO views confirmed a linear extra-cardiac course. The lead was pulled back and further contrast confirmed no leak into the extra-cardiac space. A nub of a vascular structure was noted in the LAO view. This was the "Azygos" vein opening into the SVC. The patient remained hemodynamically stable. A dual chamber pacemaker was successfully implanted and a post procedure echocardiogram revealed no pericardial effusion. Our case demonstrates that rarely the azygos vein can be entered and this can mimic vascular perforation. Knowledge of this would save the extra measures that would be undertaken in case of a vascular perforation at this level.

*Keywords:* Azygos vein, vascular perforation, PPM implantation

### 2.35

#### HIDDEN TROUBLE – A CLOT IN AN UNUSUAL LOCATION

*Fateh Ali Tipoo Sultan, Syedah Saira Bokhari  
Section of Cardiology, Department of Medicine,  
Aga Khan University, Karachi*

**Background:** Aneurysms of the left ventricle may form as a complication of myocardial infarction. Left ventricular aneurysms comprise of fibrosed and thinned out portions of the left ventricle which potentiate blood stasis and thrombus formation. Such aneurysms with mural thrombus are most commonly seen at the left ventricular apex and often result in cardio embolic stroke.

**Case History:** We present the case of a 55 year old gentleman who was a known diabetic and hypertensive. He had a remote history of acute myocardial infarction. A recent echocardiogram revealed infero-posterior akinesia with basal infero-posterior aneurysm formation. He was admitted with a diagnosis of urosepsis. In hospital, he developed a Non-STEMI for which he was managed medically. The next day he developed new onset left sided hemiparesis. MRI Brain revealed multifocal acute infarcts in both supra and infra tentorial territories. In view of his ongoing fever and imaging features of cardio-embolic stroke, a trans-esophageal echocardiogram was performed. The TEE study initially revealed the same findings as the trans-thoracic study. However on further elaboration on trans-gastric views, a much larger basal inferior segment aneurysm was visualized which was filled with thrombus. Echocardiographic features suggested that the thrombus was non-organised. In view of these previously unrecognized findings, both anti-coagulation and aneurysmectomy were suggested. However, the patient and his family were unwilling for further interventions and the patient was discharged on oral anticoagulation.

**Conclusion:** This case illustrates the importance of trans-esophageal echocardiogram in the evaluation and management of suspected cardio-embolic stroke.

**Keywords:** Echocardiogram, stroke

### 2.36

#### CAUGHT IN THE ACT: A CASE REPORT

*Ghulam Hussain Soomro, Fateh Ali Tipoo Sultan, Muhammad Sharif  
Section of Cardiology, Department of Medicine,  
Aga Khan University, Karachi*

Thrombus in both the left and right atrium is a rare clinical entity. Most cases of left atrial thrombus have been reported in association with atrial fibrillation and mitral stenosis. The differential diagnosis of clots and myxomas in the left atrium is mostly based on echocardiography. A thrombus in the right atrium is considered very rare. However, right atrial thrombi in patients with a permanent pacemaker or a history of deep vein thrombosis have been reported. Thrombus in left or right atrium can result in catastrophic consequences due to systemic or pulmonary embolism. Here we report a case of 70 years old man with a large mobile thrombus in the right atrium crossing the patent foramen ovale (PFO) into the left atrium with concomitant lower extremity deep venous thrombosis. He was treated successfully with oral anticoagulation and showed complete resolution of the thrombus on subsequent echocardiographic studies.

**Keywords:** Thrombus, Deep venous thrombosis, pulmonary embolism, Echocardiography.

### 2.37

#### HEAD UP TILT TEST: IS A SINGLE DOSE OF NITROGLYCERINE GOOD FOR ALL?

*Aamir Hameed Khan, Zahra Nur Khaled, Sidra Hassan, Cyrus Tariq  
Heart Rhythm Management, Section of Cardiology, Department of Medicine, Aga Khan University, Karachi*

**Introduction:** Head Up Tilt Test (HUTT) is the arguable gold standard for diagnosing neurocardiogenic syncope (NCS) with a diagnostic specificity of 80 to 100% and a sensitivity of 40 to 70%. Nitroglycerine (NTG) provocation elicits susceptibility to NCS.



**Aim:** To test a new provocation protocol in patients with high pretest probability of NCS.

**Methods:** All patients referred for HUTT for recurrent syncope. A history before the test established an index of suspicion for NCS. The patients consented for the test and were tilted at 60 degrees for 20 minutes then a first dose of sublingual NTG 500 mcg (20 minutes tilt) and then another 500 mcg (20 minutes tilt).

**Results:** Nine subjects including one healthy volunteer (male, 28 years), 50% were males, mean age 55 years (range 28 to 81). HUTT was positive in 6 patients (75%). The control HUTT was negative. For positive tests the baseline pulse was 76.5 bpm (range 53 – 105 bpm), BP 141 mm Hg (range 100 – 190 mmHg) and for the negative tests the baseline pulse was 62.5 bpm (range 55 – 70 bpm), BP 155.5 mm Hg (range 150 – 161 mmHg). Of the 2 negative patients one had sinus node dysfunction and isorhythmic AV dissociation, the 2<sup>nd</sup> an 81 year old remained undiagnosed. The mean time to positive was 8.8 seconds (range 4 to 20 minutes). Heart rate drop for was 64.5 bpm (range 23 – 145 bpm), mean BP drop 58 mmHg (range 20 – 90 mmHg); in 2 cases BP was unrecordable. The ECG showed sinus bradycardia 4, sinus pause 1 and asystole 1. All positive cases and none of the negative tests showed paradoxical bradycardia despite drop in BP as a nitrate effect.

**Conclusion:** A serial double dose nitrate provocation test improves the diagnostic yield.

**Keywords:** HUTT, nitrate provocation, neurocardiogenic syncope, vagal syncope

## 2.38

### HEAD UP TILT TABLE TEST: A PROFILE AND ASSOCIATION OF HYPERTENSION WITH A POSITIVE TEST

Wajiha Javed, Aysha Almas, Aamir Hameed Khan  
Heart Rhythm Service, Section of Cardiology,  
Department of Medicine, Aga Khan University,  
Karachi

**Background:** Head up tilt test (HUTT) is an arguable gold standard. No data available from Pakistan. The test relies on vasodilatation.

Hypertension would intuitively make a case for resisting positivity.

**Aim:** To look at the profile of HUTT and also see the association between hypertension with the time taken to positive test.

**Materials and Methods:** A retrospective study done at the Aga Khan University hospital. Details of all HUTTs between January 2002 and 2007 were recorded. HUTT protocols were 30 and 45 minutes plain tilt at 60 degrees and 15 minutes provocation with 500 mcg of nitroglycerine.

**Results:** Total 153 patients, mean age 41.63±20.8, 103 males and 49 females. Mean BMI 23.54±5.66. Hypertension noted in 53 patients. Test was positive in 110 patients (72%) and negative in 39 (25.5%). Mean time to plain positive test was 28.87±8.75 minutes, [33.85±12.1 minutes (45 minutes plain) and 27.10±6.56 minutes (30 minutes plain)]; mean time to positive for all HUTT was 36.60±12.75 minutes. Mean baseline systolic and diastolic BP 126±22.73mmHg and 76.94±11.78 mmHg, respectively, mean baseline heart rate (HR) 74.2±15.04 bpm. Mean HR at positive was 57.01±19.24 bpm. A mean HR drop of 32.21 bpm, mean systolic BP drop of 38.91mmHg and a diastolic BP drop of 21.28mmHg. Symptoms for positive test were syncope 59, presyncope 49, 45 had other premonitory symptoms. Four had prolonged asystole (longest of 50 seconds), one supraventricular tachycardia, which reverted with carotid massage and one transient LBBB. A 9 year old boy (negative test) had absence seizure which could not be reproduced later with EEG. Hypertensive patients took a longer time to positive (mean time 31.56 minutes) as compared to normotensive patients (mean time 27.19 minutes) [p value of 0.04].

**Conclusion:** Hypertensive patients take a longer time for HUTT to become positive.

**Keywords:** HUTT, syncope, seasonal variation, hypertension, nitrate provocation

### 2.39

#### A RARE UNIDIRECTIONAL, DECREMENTAL LEFT FREE WALL ACCESSORY PATHWAY CAUSING AN ANTIDROMIC ATRIOVENTRICULAR TACHYCARDIA: A LEFT SIDED MAHAIM TACHYCARDIA

\*Aamir Hameed Khan, ^Imran Iftikhar

\*Heart Rhythm Management, Section of Cardiology, Department of Medicine, Aga Khan University, Karachi and ^Department of Cardiology, Indus Hospital

Antidromic atrioventricular reentrant tachycardia (aAVRT) is rare compared to orthodromic atrioventricular reentrant tachycardia (oAVRT). An aAVRT that is dependent on a unidirectional, accessory pathway (AP) is less common and one which is also decremental is even rarer. Decremental accessory pathways (which are atriofascicular and atrioventricular both grouped together as Mahaim tachycardias) are rare and seen on the right side predominantly, while on the left side they are extremely rare with only a couple of case reports in world literature. The preferred approach of ablation for such left sided tachycardias with anterograde conduction only is a retrograde transaortic approach; this facilitates mapping the earliest ventricular activation (at the AP insertion site) from the ventricular side during atrial pacing or tachycardia. This however, necessitates access to the arterial system with accompanying complications. We describe here, the case of a 32 year old man who presented with a wide complex tachycardia (WCT), which was treated initially as VT with intravenous lidocaine. The baseline ECG revealed a short PR interval of 110 ms but did not show preexcitation (WPW). Electrophysiologic study (EPS) revealed a unidirectional left anterior accessory pathway which conducted anterograde only. AVRT was easily inducible at a cycle length of 290 - 310 msec. The diagnosis was confirmed with lab maneuvers to differentiate between WCT. The pathway was mapped to a 12 o'clock position on the mitral annulus and it showed decremental conduction like the AV node. Successful ablation was undertaken via the transseptal approach. Till last follow-up (over 28 months to ablation) there has been no recurrence.

**Keywords:** Left Mahaim tachycardia, decremental accessory pathway, WPW, WCT

### 2.40

#### SINGLE CORONARY ARTERY

Amjad Nabi, Fateh Ali Tipoo Sultan

Section of cardiology, Department of Medicine, Aga Khan University, Karachi

**Introduction:** Single coronary artery (SCA) is a rare congenital anomaly of the coronary arteries where only one coronary artery arises from the aortic trunk by a single coronary ostium supplying the entire heart. SCA arising from the right coronary cusp is exceedingly rare. The incidence is 0.03–0.9%. The use of computed tomographic coronary angiography (CTA) for the identification of such coronary artery anomalies is well established. Clinical relevance is mainly dependent on the origin and course of the coronary artery which can vary between asymptomatic to sudden cardiac death. Patients with coronary artery originating from the opposite sinus with proximal vessel segment localized between the pulmonary trunk and the aorta can present with syncope and sudden cardiac death. We found a case with SCA arising from the right coronary cusp on CTA.

**Case Report:** A 33-year old female with history of coronary artery fistula closure at 10 years of age, presented with chest pain on exertion. There was no family history of ischemic heart disease. Physical examination was normal. There were no ischemic changes on ECG. Laboratory investigations were normal. Patient underwent CTA which showed a SCA with right dominance. Both right and left coronary arteries had a common wide origin from the right coronary cusp. The left coronary artery after originating from the right coronary cusp run anteriorly over the right ventricular outflow tract towards the anterior interventricular groove. It had a short course in the anterior interventricular groove and after giving the LAD branch it turned upward and laterally to take the course of circumflex artery. Right coronary artery had a normal course. There was no significant disease in any of the vessel.

**Discussion:** This case demonstrates the importance of coronary CTA for unambiguous delineation of both origin and vessel course in patients with very rare coronary anomalies.

**Keywords:** Single coronary artery, CT angiography

## 2.41

### SPONTANEOUS CORONARY ARTERY DISSECTION: A RARE CAUSE OF ACUTE CORONARY SYNDROME

*Abid H. Laghari, Aamir H. Khan, Khawar A. Kazmi*  
*Section of Cardiology, Department of Medicine, Aga Khan University, Karachi*

Spontaneous coronary artery dissection (SCAD) is an uncommon and rare cause of acute coronary syndrome (ACS) and sudden cardiac death. A number of conditions and diseases are associated with SCAD. Various risk factors for SCAD include pregnancy, intensive exercise, cocaine abuse and connective tissue disorders like Ehlers-Danlos disease, and Marfan's Syndrome. We present here a case of SCAD which presented with atrial fibrillation and acute coronary syndrome in an unusual presentation. A 71 year man, who was a known case of hypertension and dyslipidemia, presented to the emergency department with typical cardiac chest pain and palpitations of 2 hours duration. The examination revealed a pulse of 138 bpm irregularly irregular, BP 115/75 mmHg, variable first and normal second heart sounds. The lungs were clear on auscultation. The electrocardiogram revealed atrial fibrillation with rapid ventricular rate. His heart rate was controlled with beta blockers and treatment commenced for acute coronary syndrome including anticoagulation. His base line blood reports were within normal limits and two serial Troponin I tests were negative. Coronary angiogram was done which showed dissection of the left coronary system including the left anterior descending artery from ostium to mid portion and extending to the diagonal branch. The left circumflex artery also showed dissection going into the obtuse marginal branch. The right coronary artery showed plaque formation with 30 to 40% stenosis without any dissection. The patient underwent CABG on the same day on an emergent basis. Post procedure he suffered a limited stroke from which he recovered uneventfully. He was discharged home after recovery and is being followed in the clinic where he is doing well.

**Keywords:** Spontaneous, dissection, CAD, atrial fibrillation, myocardial infarction

## 2.42

### THE CAGED HEART – MASSIVE POST TRAUMATIC PERICARDIAL CALCIFICATION CAUSING CONSTRICTIVE PERICARDITIS

*Fuad Farooq, Sadia Arshad, Cyrus Tariq Gill*  
*Section of Cardiology, Department of Medicine, Aga Khan University, Karachi*

**Introduction:** Trauma to the chest wall can cause bleeding into the pericardium with subsequent inflammation and calcification resulting in constrictive pericarditis.

**Case Report:** Herein we are reporting an unusual case of a man who had chest wall trauma in childhood and presented to our hospital at age of 35 years with ascites, easy fatigability and lightheadedness. On examination, he had signs of right heart failure. His chest X-ray revealed massive pericardial calcification and echocardiogram showed extensive pericardial calcification, also embedding into the myocardium, along with constrictive physiology. After diagnosis of constrictive pericarditis, a pericardiectomy was performed showing large organized calcified hematoma.

**Discussion:** Blunt trauma to the chest wall may result in bleeding into the pericardium. Development of organized, calcified hematoma post trauma is rare complication, but a few case reports have been described in literature. In the review of literature, the time from injury to surgery ranged from 3 to 20 years. Our patient also presented after two decades after his initial injury.

Medical therapy is to decrease the symptoms of heart failure, but pericardiectomy and pericardial stripping is the main stay of treatment to relieve the constriction.

As this is a rare disease, the data regarding prognosis of the disease is relatively scanty. The degree of pericardial calcification has shown no effect on survival.

**Keywords:** Pericarditis, calcification

### 2.43

#### A CLINICAL PROFILE OF PATIENTS ENROLLED IN THE PAKISTAN ACS REGISTRY

*Sadia Arshad, Javed M Tai, Khawar A Kazmi*  
Section of Cardiology, Department of Medicine,  
Aga Khan University, Karachi

**Background:** Acute coronary syndrome, which is a clinical syndrome encompassing the presentation of patients having unstable angina, non ST elevation myocardial infarction and ST elevation myocardial infarction, is one of the most common diagnoses of patients admitted to tertiary care centres

**Objectives:** To assess the clinical characteristics, treatment given and outcomes of patients admitted to three centers with the diagnosis of acute coronary syndrome

**Methods:** This was a descriptive study conducted over 24 months in the cardiology departments of the Aga Khan University Hospital, Tabbha Heart Institute, and Civil Hospital Karachi.

Patients were prospectively enrolled from the emergency departments of all three centers and screened for eligibility. The patients were followed till death or discharge from the hospital for outcome data.

**Results:** A total of 1430 patients were enrolled from 3 centers, (AKU=397 THI=692 and from CHK=341). Mean age was 63.7±18 years. All three centers revealed a strong male preponderance (75%). A large proportion of patients were diabetic (35%) and hypertensive (47%), less than one fifth had had a prior MI. 42% were current or ex smokers. Shortest time to presentation in emergency room was seen in patients from CHK (mean time from symptom onset to arrival was 2.6 ±3.83 Hours vs THI (6.84± 5.8 hours) and AKU (6.65±8.2 hours)

Majority of patients enrolled in this study had a diagnosis of myocardial infarction 73% and the remainder had unstable angina. We found a higher than expected percentage of ST elevation in the patients with MI (66%), mostly anterior. Patients were mostly treated according to the guidelines. A smaller than expected proportion of eligible patients underwent thrombolysis

(34%). Primary PCI was performed in 285/682 (42%) and rescue PCI in 3.3%

Mean LVEF was 48.2±17%. A total of 34 (2.3% patients died during admission)

**Conclusion:** Patients with ACS were predominately male, had a higher proportion of STEMI, and underwent catheter based intervention more than expected in this series. Mortality was lower than expected.

**Keywords:** Acute coronary syndrome, STEMI, NSTEMI, Unstable angina

### 2.44

#### SERUM SODIUM CONCENTRATION AND CLINICAL OUTCOMES IN PATIENTS WITH HEART FAILURE

*Noreen Nasir, Aysha Almas, Bushra Jamil*  
Section of internal Medicine, Department of  
Medicine, Aga Khan University, Karachi

**Introduction:** The diagnosis of heart failure in a patient carries a prognosis of 35-40% 1-year mortality. Among factors predicting mortality, hyponatremia has been associated with 2-3 fold increase in in-hospital and post discharge mortality. There is paucity of data from Indo-Asian population on outcomes of heart failure and factors predicting mortality.

**Objectives:** To compare 30-day mortality rate in heart failure patients with and without hyponatremia (serum sodium <136 and ≥136 mmol/L. respectively).

To compare these two groups for length of stay, rate of rehospitalization and functional status (NYHA criteria).

**Materials and Methods:** A prospective cohort study of 164 patients with heart failure was conducted. Patients were recruited from the emergency department of Aga Khan University Hospital over a 6-month period. Patients with and without hyponatremia were followed for death, length of hospital stay, rehospitalization and functional status at 30 days. Data was analyzed using SPSS version 16.0 and a P-value of <0.05 was considered statistically.

**Results:** The average age was 64±13 years, and 55% of patients were male. **Comorbidities:** 92% had Hypertension, 88% had Coronary Artery

Disease, 62% had Diabetes Mellitus, 40% had Chronic Kidney disease.

**Mortality** This was 4% in patients with normal serum sodium and 10% in patients with hyponatremia.

**Multivariate analysis:** The odds of having sodium < 136mmol/l among those who died was 3.04 (95% CI 0.77-12.04) as compared to those who survived, though this was not statistically significant (p=0.113). The odds of having hyponatremia among those who had good NYHA functional class was 0.16 (CI 0.07-0.34) compared to those with poor NYHA functional class (p<0.001). The odds of having hyponatremia among those who were re-hospitalized was 0.2 (CI 0.05-0.78) times that of those who were not re-hospitalized (p=0.021).

**Conclusion:** Hyponatremia (serum sodium <136mmol/L) in heart failure was associated with a tendency towards higher mortality, though not statistically significant. Hyponatremia was significantly associated with lower re-hospitalization rate and poor NYHA functional class. A study with larger sample size or longer follow up period may identify significance of hyponatremia as a predictor of mortality, hence relevant interventions can be targeted to improve outcome.

## 2.45

### HIGHER MORNING SURGE IN BLOOD PRESSURE IN A SOUTH ASIAN (PAKISTANI) POPULATION IN HEALTHY NORMOTENSIVE ADULTS; A CAUSE OF CONCERN!

Aysha Almas\*, Fatehali Tipoo Sultan\*\*,  
Khawar Kazmi\*\*

Section of \*Internal medicine and \*\*Cardiology,  
Department of Medicine, Aga Khan University,  
Karachi

**Background:** Higher morning BP surge (MBPS) might be an independent risk factor of atherosclerotic events beyond ambulatory BP and nocturnal BP falls

**Objective:** To determine the mean morning surge in blood pressure, frequency of increased morning surge in normotensives at a tertiary care center and to compare those who have high

morning surge with those who have normal morning surge in blood pressure

**Methods: Study Design and setting :**It was a cross-sectional study conducted on adult normotensive adult healthy volunteers at the Aga Khan University. **Study population:** All Adults Normotensives defined as SBP < 120 mm Hg and DBP <80 mm Hg aged 35 yrs to 65 yrs who volunteered were included. Those who have known Coronary Artery Disease(CAD), have been diagnosed to have Angina, Myocardial Infarction ,who had clinically manifest known cardiovascular diseases(valvular heart diseases, cardiomyopathy),who are affected by known systemic diseases (chronic renal failure [creatinine >1.5], connective tissue disorder) and Those with altered night time sleep either because of shift work or because of ABP monitoring (ABPM) were excluded.**Data Collection:**Ethical approval and informed consent was taken.Notices were displayed for recruitment and data was recorded on a predesigned performa. ABP was measured with SpaceLabs 90207, a noninvasive portable oscillometric device (SpaceLabs Inc). Participants were asked to record their daily activities. The recorders were programmed to measure BP at 30-minute intervals for 24 hours. AccuTrack software was used to facilitate data summary. Morning surge was calculated as average 4 readings after waking minus lowest 3 night reading.Increased morning surge was defined as >11 mm Hg in SBP or > 12 mm hg in DBP. Dipping was defined as > 10 % dipping in blood pressure

**Results:** A total of 82 healthy volunteers were recruited in the study. Mean (Sd) age was 36.8(11.7) years, 74.4(61) were men and 58.5(48) woke up for prayers. Overall SBP Average was 113.3(15.1) mm Hg, DBP Average was 74.0(6.4) mm Hg, HR Average was 75.3(7.37)beats/minute.Mean (SD) Morning surge in SBP was 17.6831(9.37) mm Hg and Morning Surge DBP mm Hg was 16.0772(7.68).Prevalence(n) of Increased Morning surge in SBP was 80.5(66), Increased Morning surge in DBP was 69.5(57), Non Dipping in SBP was 32.9(27),Non Dipping in DBP was 22(18).On making quartiles of morning surge in SBP;25<sup>th</sup> percentile was ≤12.66 mm Hg, 50<sup>th</sup> percentile was at ≤18 mm

Hg and 75<sup>th</sup> percentile at  $\leq 24$  mm Hg. On making quartiles of morning surge in DBP; 25<sup>th</sup> percentile was  $\leq 10.54$  mm Hg, 50<sup>th</sup> percentile was at  $\leq 16.33$  mm Hg and 75<sup>th</sup> percentile at  $\leq 20.29$  mm Hg. On comparison of participants characteristics with normal morning surge and increased morning surge in SBP; non dipping was 13.4(11) v 19.5(16), p value 0.001. On comparison of participants with normal morning surge and increased morning surge in DBP; non dipping was 15.9(13) v 17(14), p value 0.01.

*Conclusion:* Mean morning surge in SBP and DBP are higher, with frequency of 80% and 69% in this health volunteer population. These values are higher than those reported in the literature. Normotensive (+prehypertensive) healthy adults with increased morning surge have higher prevalence of nondippers. Further large scale studies are needed to define cutoffs in our population which is predictive of worse cardiovascular outcomes.

*Keywords:* Hypertensive, cardiovascular, blood pressure

# Clinical Trials

### 3.1

#### SKULL BONE FLAP: ETHICAL PERSPECTIVES AND ROLE OF HEALTH CARE PERSONNEL

*Erum Dost Muhammad, Salma Rattani,  
Ambreen Tharani  
School of Nursing & Midwifery, Aga Khan  
University, Karachi*

*Background and Introduction:* Craniotomy is a surgical procedure in which a bone flap is temporarily detached from the skull to access brain. The skull flap is not proximately replaced, permitting brain to swell, consequently reducing intracranial pressure. Flap removed requires being store property as after six month or longer, if the patient is in good health then surgeon attempt re-surgery called Cranioplasty. Proper storage and incineration in case of deceased is moral and ethical responsibility of the health care personnels.

*Objectives:* Using ethical framework, this paper aims to highlight the importance of storage and proper disposal of the flap. It will also define a communication mechanism between patients/family members and the health care team personnels.

*Methodology:* This project is part of senior elective course in bachelorette nursing curriculum. Having approval from departmental heads; nursing and neurosurgery the project was conducted. In assessment phase information gathered included exploring the policy guidelines if any, observation of clinical practices; bone flap storage system and staff knowledge about bone flap, its expiry and communication with the patients/ family members and incineration process for bone flap of deceased. Based on the assessment a checklist; English and Urdu version, was developed and processed to next level for implementation and evaluation purpose.

*Result:* Results revealed that the health care personnels are knowledgeable about bone flap storage and its expiry. All the staff (n=11) reported that they do not explain patient and family members about bone flap storage, expiry period of the bone and the institutional incineration. Observation revealed a gape in proper disposal of the expired bone flaps

*Conclusion:* A mechanism for dealing with the bone flap is one of the responsibilities of the health care personnels. Hence, it has been developed as a part of this project and processed further one of its outcome is develop a documentation check list which is forwarded for approval by institutional federal communication commission (FCC).

*Keywords:* bone flap, ethical perspective, health care

### 3.2

#### CAREER COUNSELLING AN IMPORTANT COMPONENT FOR GROWTH AND DEVELOPMENT OF INDIVIDUALS AND THE SOCIETY

*Erum Dost muhammad, Salma Rattani, Ambreen Tharani  
School of Nursing & Midwifery, Aga Khan  
University, Karachi*

*Background and Introduction:* During senior elective course on October 3, 2013 I visited Hyderabad colleges with Ms. Salma Rattani, my preceptor and the lead person of the project titled “Youth Development Programme: An Opportunity for Entering Nursing Profession”(YDP) started in January, 2013. We visited five Government Girls Degree colleges in Hyderabad. From these colleges in the month of January, 2013 students were provided information about nursing as career and among those who were motivated were enrolled in the programme and March to June, 2013 on Sundays class were conducted for the students. Teaching focussed on English, Math and Science and session for basic computer skills and professional development. Purpose of this visit was to facilitate students’ admission in nursing programme at university.

*Objectives:* This paper aims to highlight the importance of the career counselling with focus on nursing profession which though is a growing profession and provides lot of opportunity to flourish yet due to society being least informed about, is not valued.

*Methodology:* Information gathered through literature searched, review of YDP report and



my learning experience during the visit revealed that career counseling is important and provides a platform to young generation to select their path and to develop socially, economically and educationally in fulfilling a more productive role in the society.

*Conclusion:* The implications suggest that educational institutes and all its stakeholders to take important steps such as compulsory carrier's education should be introduced to all intermediate students.

*Keywords:* Career counselling, individual, society

### 3.3

#### EMPHASIZING THE CONCEPT OF AUTHORSHIP TO PRESERVE INTEGRITY IN RESEARCH AND STANDARDS OF CARE IN CLINICAL TRIALS

*Fatima Hassan Makhani, Nazia Ali Hussain, Sumaira Khowaja Punjwani  
Alumni and School of Nursing & Midwifery, Aga Khan University, Karachi*

*Objectives:* This paper aims to highlight the concept of authorship in research by establishing a monitoring mechanism within the domain of research.

*Background:* In clinical trial, research integrity is misrepresented into the attributes of data fabrication, falsification and plagiarism, to attain Authorship by the researcher. However, no clinician or academician can necessarily be a good researcher, therefore there is a dire need to pursue the standardized concept of Authorship in order to preserve the integrity within the field of clinical trial.

*Method:* To analyze the issues related to research integrity and its magnitude, comprehensive literature review was carried. 15 articles were reviewed comprehensively and the data was extracted from periodical, Google Scholar, Pub Med, The Lancet (Commentary), Office of Research Integrity (ORI), Nature (Editorials), CINAHL and .

*Result:* Most of the literature that was reviewed reveals that Authors are not following the standardized criteria for authorship and for publication of their research. Therefore, it is of

utmost significance to limit the authors to following the guidelines associated to Authorship in research.

*Conclusion:* Clear guidelines should be established to determine the concept of authorship i.e. authorship should be limited to those individuals, who have provided their best into the research study. The role of researcher is to create a bridge between clinical trial till publications of their research work, which will indeed facilitate those investigators to carry out research studies ethically.

*Keywords:* Authorship, clinical trial, research integrity

### 3.4

#### ISSUES OF RESEARCH ETHICS AND CLINICAL ETHICS IN DEVELOPING WORLD, POSSIBLE SOLUTION: A WAY FORWARD

*Muhammad Waseem Khan, Maria Zawyar, Sanam Zeib Khan  
Department of Biological & Biomedical Sciences and Medical College, Aga Khan University, Karachi*

*Introduction:* Research plays a pivotal role in the progress of inventions in medicines and medical technology. There are many ethical issues regarding research ethics/Clinical Ethics in developing countries that need to be addressed. The issue of independent ethical review, valid inform consent, fair subject selection, standards of care and post-trial benefits have been highlighted but mostly ignored by researchers/Physicians in developing countries. Researchers from developing world are interested to conduct their research studies in developing countries is noticed that rather benefiting the participants it causes significant harm to the research study participants/Patients. These ethical lapses can significantly harm human subjects.

*Methods:* Patients attending medicine department of Bolan Medical Complex (BMC) Quetta, Balochistan, Pakistan for different procedures were selected randomly interviewed and requested to fill the questionnaire.

**Results:** Public hospitals in many developing countries are considered as clinical trial sites. In a clinical setup of developing country the patients enter the trial because of their primary care physician is involved in research study. As physicians are highly respected and included by patients in their decisions in fact they are given the authority to make decisions for their patients. Patients are not able to question their doctor's judgment. They may be easily influenced by the doctor's advice.

**Conclusions:** Ethical guidelines and rules can be set easily but it is difficult to ensure that they are duly followed. We have to educate the inner human of individuals, the physicians and the researchers to act morally and ethically to follow ethical rules

**Keywords:** Clinical ethics, ethical lapses, standard of care

p-value: <0.001), drain days (11±2 vs. 16±4, p-value: <0.001), seroma formation (22.3% vs. 32.3%, p-value: 0.071), and postoperative pain [median (range): 2 (2-2) vs. 3 (3-4), p-value: <0.001]; Whereas surgical site infection (0% vs. 2%, p-value: 0.122) did not differ. On multivariable cox regression analysis, single drain was associated with lower risk of significant postoperative pain [Adjusted Relative Risk: 0.028 (95%CI: 0.004-0.2)] and overall complications [Adjusted Relative Risk: 0.47 (95% CI: 0.26-0.86)].

**Conclusion:** Single drain significantly reduces post-operative discomfort and morbidity to the patient. Therefore, we recommend preferential use of single drain in MRM.

**Keywords:** Single drain, modified radical mastectomy, seroma

### 3.5 SINGLE VS. DOUBLE DRAIN IN MODIFIED RADICAL MASTECTOMY: A RANDOMIZED CONTROL TRIAL

*Salma Khan, Tufail Bawa, Sadia Rafique  
Alumni, Aga Khan University, Karachi and  
Memon Medical Institute, Karachi*

**Abstract Purpose:** To test the hypothesis that placement of single drain in Modified Radical mastectomy (MRM) does not increase postoperative complications (seroma, wound infection, flap necrosis and prolong axillary drainage) as compared to double drain.

**Methods:** This parallel group, single blind, randomized controlled trial was conducted at department of surgery of Memon Medical Institute between January 2013 and September 2013. Adult females undergoing Modified Radical Mastectomy (MRM) were randomly allocated to either single (n=43) or double drain (n=43).

**Results:** Both the groups were comparable for baseline variables with age of 50.5±12.2 and 48.5±14.5 years in single and double drain group, respectively. Single drain group yielded better outcomes as compared to double drain group with drain volume (731±175 vs. 935±313,

# Dentistry / Orthodontics / Dental Surgery

#### 4.1 RELIABILITY OF DIFFERENT METHODS FOR DENTAL AGE ESTIMATION

*Aisha Khoja, Mubassar Fida, Attiya Shaikh  
Department of Surgery, Aga Khan University,  
Karachi*

*Objectives:* To evaluate the dental age (DA) of Pakistani orthodontic patients aged 8-16.9 years using Demirjian, Nolla and Willems methods and to determine the reliability of these methods by comparing the dental age against their known chronological age (CA).

*Material and Methods:* Panoramic radiographs of 403 subjects meeting the inclusion criteria (176M and 227F) were examined for DA assessment according to Demirjian, Nolla and Willems methods. Paired t-test and Wilcoxon sign ranked test were used to determine any significant difference between mean DA and CA between different age groups across gender.

*Results:* DA was significantly advanced in age groups 8-9.9 and 11-11.9 years ( $p<0.05$ ) in males and 8-8.9, 10-11.9 and 13-14.9 years ( $p<0.05$ ) for females using Demirjian's method for Pakistani standards. DA was under-estimated in 8-13.9 years ( $p<0.05$ ) in males and over-estimated in 11-11.9 and 13-13.9 years ( $p<0.05$ ) in females using Nolla's method. According to Willems method, DA was advanced in 8-8.9 and 11-11.9 years ( $p<0.05$ ) in males and 8-8.9 and 13-14.9 ( $p<0.05$ ) years for females. Girls reported earlier dental maturation than boys using Demirjian and Nolla's method and vice versa using Willems method. Strong and statistically significant correlation was found between CA and DA for males and females according to all methods ( $p=0.00$ )

*Conclusions:* DA estimation according to Demirjian's method using Pakistani tables gives better correlation with CA and less over-predication compared to the French-Canadian standards. With any of methods used, there is a good DA correlation with CA. Among all, Willems method is easier and reliable

*Keywords:* Reliability, dental age, chronological

#### 4.2 ASSOCIATION OF SELLA TURCICA BRIDGING AND CANINE IMPACTION

*Batool Ali  
Department of Surgery, Aga Khan University,  
Karachi*

*Introduction:* The sella turcica acts as a significant anatomical landmark used as reference during cephalometric analysis. The lines connecting the S-point located in the central area of sella to other landmarks is used to study maxillo-mandibular relationships to cranial base. Due to a common developmental origin, calcification of interclenoid ligament of sella has been linked to various cranio-facial aberrations and dental anomalies.

*Objectives:* The intention of this study was to measure the dimensions of sella turcica and depict whether a correlation exists between impacted canines and sella bridging.

*Methods:* Orthodontic records comprising of standard quality lateral cephalograms and orthopantomograms of subjects demonstrating impacted canines were selected. All cases and controls were matched for age and gender and hence the sample size consisted of 35 cases with impacted canines (21 females and 14 males) and 70 controls (35 males and 35 females). The dimensions of sella turcica and sella bridging was noted in both the groups.

*Results:* The frequency of complete calcification of interclenoid ligament in subjects with canine impaction turned out to be 22.9% whereas no subjects showed complete calcification in the control group. The difference of sella bridging in subjects diagnosed with canine impaction was statistically significant (Chi-Square test). The linear dimension of length showed significant difference in contrast to depth and diameter (T-test).

*Conclusions:* The sella bridge found in cases with impacted canines, could help the clinicians in early diagnosis of canine impaction in patients undergoing phase I orthodontic treatment

*Keywords:* Sella bridging, impaction, canines

#### 4.3 EFFECT OF PREMOLAR EXTRACTION ON BOLTON'S OVERALL RATIO IN ORTHODONTIC PATIENTS

*Saira Imdad, Attiya Shaikh, Mubassar Fida  
Department of Surgery, Aga Khan University,  
Karachi*

*Introduction:* Bolton's overall ratio is a critical factor for achieving the ideal occlusal relationships. Orthodontic treatment which involves extraction of premolars, greatly influences the Bolton's overall ratio. The purpose of this study is to investigate the effects of premolar extractions on the Bolton's overall ratio in orthodontic patients.

*Methodology:* The mesiodistal tooth widths were measured on 215 pretreatment dental casts. The overall Bolton ratio was determined using Bolton's formula before and after hypothetical premolar extractions. The subjects were divided into Bolton Deficit, Bolton Normal and Bolton Excess group according to Bolton's value plus or minus one standard deviations. Extractions were performed in following combinations: (1) All first premolars (2) All second premolars (3) Upper first and lower second premolars (4) Upper second and lower first premolars. For statistical analysis one-way ANOVA was used for the comparison of Bolton ratio among all three groups before and after premolar extractions.

*Results:* Bolton's overall ratio decreased significantly in all premolar extraction patterns (number?)Stats. The most significant reduction occurred after extraction of upper second and lower first premolars.

*Conclusion:* In formulating a treatment plan which involves extraction of premolars, orthodontists should consider that overall Bolton ratio will decrease after extraction which may affect their treatment outcome and stability.

*Keywords:* Mesiodistal width, Bolton's overall ratio, extraction

#### 4.4 FIRST PERMANENT MOLAR TOOTH EXTRACTION IN DENTAL CARIES IN CHILDREN 6-12 YEARS OF AGE: A DILEMMA

*M. Ashraf Ayub, Khalil Mobin, Wasim Siddique,  
Manzar Alam Shah  
Department of Surgery, Karachi Medical Dental  
College, Karachi*

*Objective:* • To find out frequency of 1st permanent Molar Tooth extraction in Dental Caries amongst children between 6 and 12 years of age • To determine association between Socioeconomic status of the parents and 1st permanent molar tooth extraction due to Dental Caries in their children

*Methodology:* In this comparative cross sectional study, conducted in dental OPD of Abbasi Shaheed Hospital and Karachi Medical and Dental College, 53 parents of children , 6-12 years of age were distributed questionnaire. Sampling was nonprobability purposive and children having dental trauma along with tumor of tooth were excluded.

*Results:* Mean age of the children was 8.9 years with 1.9 SD. Number of male children was 30 (56.5%). Mostly (73%) were Urdu speaking and majority (65%) were poor. School going children were 81%. There was 51% drop out in females after metric. Parents who opted for tooth extraction constituted 72% of the sample. There was insignificant association between socioeconomic status of parents and dental extraction of their children in dental caries ( $p=.707$ ). In multiple response analysis 30% of the total responses generated were "less expensive" and 78.9% choiced for "less expensive"rephrase.

*Conclusion:* Most parent's preferred choice of treatment for dental caries in their children was tooth extraction (72%)

*Keywords:* Molar tooth, dental caries, cariogenic diet

#### 4.5 CURRENT TRENDS IN PRIMARY TOOTH PULP THERAPY AMONGST DENTISTS IN KARACHI

*Maham M. Lone, Farhan R. Khan, Muneeb A Lone*  
*Department of Surgery, Aga Khan University,*  
*Karachi and Sir Syed College of Dentistry*

*Objectives:* 1.To evaluate attitudes and practices of dentists regarding pulp therapy in primary teeth. 2.To compare difference between dentists working in teaching hospitals verses those working in private practices.

*Methodology:* A questionnaire was distributed to dentists working in private clinics and teaching hospitals of Karachi, who were involved in treating primary teeth. Questions gained information on: use of radiographs for pretreatment evaluation, choice of anesthesia, choice of material for pulpotomy and pulpectomy procedures, restorative material of choice after pulpotomy in pediatric patients etc. Descriptive statistics & frequency distribution were computed. Chi-square test was applied to compare difference between dentists working in teaching hospitals verses those working in private practices. Level of significance was kept at 0.05.

*Results:* •Periapical view- most commonly used radiograph by dentists to evaluate a carious tooth. •Formocresol- preferred material for pulpotomy. •ZnOE- preferred obturation material. •A very small number of dentists used stainless steel crown for definitive restoration after pulp therapy of teeth. •There is a statistically significant difference between dentists in their use of local anesthesia before restoring a deep cavity and in their choice of restoration of anterior teeth after pulpotomy procedure.

*Conclusion:* Although majority of dentists use preferred medicament for pulpotomy i.e. formocresol, preferred obturation material i.e. ZnOE paste, it was seen that only 20% placed a stainless steel crown after pulp therapy; which is considered as accepted standard of care for restoration of pulp treated primary teeth.

*Keywords:* Pediatric dentistry, Pulp therapy, Restoration

#### 4.6 DEEP OVERBITE MALOCCLUSION: EXPLORATION OF THE UNDERLYING COMPONENTS

*Nita Kumari, Mubassar Fida, Attiya Shaikh*  
*Department of Surgery, Aga Khan University,*  
*Karachi*

*Objectives:* • To explore the different skeletal and dental components of deep overbite malocclusion • To determine their relative contribution in deep overbite development

*Material and Methods:* The sample comprised of 113 patients (78 females and 35 males) with no history of previous orthodontic treatment and having no craniofacial anomalies. Skeletal and dental parameters were assessed by using pretreatment lateral cephalograms and dental casts of orthodontic patients. Descriptive statistics such as the percentage of contribution as well as mean and standard deviation of each dental and skeletal component of deep overbite malocclusion were calculated and Pearson correlation was used to correlate various deep overbite components.

*Results:* Among dental components, an exaggerated curve of Spee showed the highest contribution to deep overbite malocclusion (72.6%), followed by increased clinical crown length of maxillary incisors (28.3%), retroclination of maxillary incisors (17.7%), retroclination of mandibular incisors (5.3%) and increased clinical crown length of mandibular incisors (8%). Among skeletal components decreased gonial angle was found to contribute most to deep overbite malocclusion (43.4%), followed by decreased mandibular plane angle (27.4%) and maxillary plane's clockwise rotation (26.5%).

*Conclusions:* • Deep overbite malocclusion is multi-factorial, with definite dental and skeletal components. • Gonial angle is chief causative skeletal factor, ratifying the impact of growth and angulation of ramus in increasing deep overbite. • Deep curve of Spee is chief causative dental factor, endorsing the significance of intruding mandibular incisors.

*Keywords:* Deep overbite, dental components, skeletal components

#### 4.7 AN INVESTIGATION ON PREDICTORS OF SUCCESSFUL TWIN BLOCK THERAPY

*Tania Arshad Siddiqui, Attiya Shaikh, Mubassar Fida, Khabir Ahmed*  
*Department of Surgery, Aga Khan University, Karachi*

*Objectives:* • To identify the predictors of changes of mandibular length during twin block therapy

*Materials and Methods:* A retrospective cohort study using purposive sampling was conducted in the Dental Clinics at the Ag Khan University Hospital from February to April 2013. The records of patients were scanned from January 2002 to date. Complete records of patients treated only with twin block therapy between the age range of 9-14 years were included into the study. Patients presenting with craniofacial anomalies, syndromes, facial asymmetries, incomplete records or treated with appliances other than twin block were not taken into consideration. Data collected were analysed using univariate chi square and multivariate analysis.

*Results:* The sample size consisted of 50 subjects consisting of 21 males ( $11.86 \pm 1.84$  years) and 29 females ( $10.92 \pm 1.06$  years). Binary logistic regression analysis was done to examine the association between outcome and independent variable with  $p$ -value  $\leq 0.2$  in the univariate analysis which were mandibular plane angle ( $p$ -value=0.16), angle SNB ( $p$ -value=0.035) and cervical vertebrae maturation ( $p$ -value=0.077). Of the three independent variables, examined in the multivariate analysis, only angle SNB group ( $p$ -value=0.025) was independently associated.

*Conclusions:* Successful prediction of changes in mandibular length can be done by angle SNB.

*Keywords:* CTB, functional appliances, mandibular deficiency

#### 4.8 FACIAL SOFT TISSUE THICKNESS AMONG VARIOUS SKELETAL MALOCCLUSIONS

*Waqar Jeelani, Mubassar Fida, Attiya Shaikh*  
*Department of Surgery, Aga Khan University, Karachi*

*Introduction:* Changes in facial skeletal and dentoalveolar structures, brought about by orthodontic treatment or corrective jaw surgery, directly effects the overlying soft tissue envelop. This makes evaluation of pretreatment facial soft tissue thickness very crucial in both diagnosis and treatment planning of orthodontic patients. This study was conducted to determine facial soft tissue thickness in orthodontic patients with different skeletal malocclusions.

*Methods:* A retrospective cross-sectional study was carried out at the Aga Khan University Hospital, Karachi. A total of 166 subjects (Class I = 60; Class II = 60; Class III = 46), with ages between 18 to 30 years, having normal vertical skeletal pattern were recruited into the study. Facial soft tissue thickness was determined in millimeters at ten different points on lateral cephalograms tracings. The comparison of facial soft tissue thickness between males and females was carried out by Student's  $t$ -test and comparison among three malocclusion groups was performed using one-way ANOVA test.

*Results:* Facial soft tissue thickness was found to be greater in males at all ten points as compared to females. Statistically significant difference in facial soft tissue thickness was found at labrale superious, stomion, labrale inferius and labiomentale among three skeletal malocclusion groups for both genders. Moreover, there was significant difference in facial soft tissue thickness at glabella in males and at subnasale and pogonion in females.

*Conclusion:* Significant difference in facial soft tissue thickness was found at labrale superius, stomion, labrale inferius and labiomentale among various skeletal malocclusions groups.

*Keywords:* Soft tissue thickness, skeletal malocclusions, cephalometrics

#### 4.9 A SURVEY ON ENDODONTIC IRRIGANTS USED BY DENTISTS IN PAKISTAN

*Syeda Mahvash Hussain, Farhan Raza Khan  
Department of Surgery, Aga Khan University,  
Karachi*

*Objectives:* •To investigate attitude of dentists in Pakistan towards use of irrigants in endodontics  
•To check if there is a difference in practice techniques of dentists working in private clinics compared to those in teaching institutes.

*Materials and Methods:* A questionnaire was distributed by hand together with a covering letter to dentists in major cities of Pakistan (Lahore, Karachi, Islamabad) inquiring about their choice of irrigant in teeth with vital pulp, non-vital pulp, periapical radiolucency and immature apices. Questionnaire also sought information regarding volume and concentration of irrigant used for both mature and immature apices. Descriptive statistics & frequency distribution were computed. Chi-square test was applied to compare difference between dentists working in teaching hospitals versus those in private practices. Level of significance was kept at 0.05.

*Results:* We received 269 out of 400 survey forms sent. Most commonly used irrigant for endodontics was sodium hypochlorite  
•Normal saline was preferred irrigant for teaching dentists  
•Private practitioners chose other irrigants over normal saline  
There was a statistically significant difference between choices of irrigant used for performing endodontics on  
•Teeth with vital pulp  
•Teeth with non-vital pulp  
•Teeth with peri-apical radiolucency  
•Teeth with immature apices by dentists holding private practice versus teaching dentists.

*Conclusion:* Although majority of dentists used sodium hypochlorite as an irrigant for treating a tooth in various circumstances, dentists in teaching hospital used normal saline more frequently than private practitioners.

*Keywords:* Irrigants, Sodium Hypochlorite, Endodontics

#### 4.10 ROOT CANAL MORPHOLOGY OF MAXILLARY FIRST PREMOLAR

*Kiran Rehman, Farhan Raza Khan, Munawar Rahman  
Department of Surgery, Aga Khan University,  
Karachi*

*Objective:* 1.To determine the canal configuration of the sample of maxillary first premolars teeth using Vertucci's classification and the frequency of 1,2 or 3-rooted teeth. 2.To measure the dimensions of such as length of tooth, crown height, mesio-distal, bucco-lingual diameters at cervix, and circumference at cervix in millimeters) and assess the location and frequency of transverse anastomoses between canals.

*Method:* A total of 91 upper first premolars were collected using convenience sampling. The teeth were decalcified and rendered transparent using the technique reported by Robertson et al to obtain a 3 dimensional view of the root canal system. The anatomy of the root canal was observed under light microscope and classified based on Vertucci's Classification and recorded in the performa.

*Result:* Type I canal morphology was seen in 72% of the maxillary first premolars. A total of 49.4% of the teeth had one root, 48.3% had two roots and 2.3% had three roots. The mean length of maxillary first premolars was  $21.19 \pm 1.7$  mm whereas mean crown height was  $10.24 \pm 0.9$  mm. The mean circumference at cervix of the tooth was  $27.10 \pm 2.1$  mm.

*Conclusion:* The mean length of maxillary first premolar seen in our study was 21.19 mm. The most prevalent canal morphology seen was Vertucci's Type I. The proportion of single rooted, bi rooted and three rooted premolars were 49%, 48% and 3% respectively.

*Keywords:* maxillary, premolars, clearing technique



#### 4.11 ORTHODONTIC TREATMENT DURATIONS OF CLASS I AND CLASS II/1 MALOCCLUSIONS

*Saman Faruqi, Mubassar Fida, Attiya Shaikh  
Department of Surgery, Aga Khan University,  
Karachi*

*Introduction:* A better understanding of duration of orthodontic treatment as well as factors affecting the treatment duration is useful for efficient patient counseling and improved clinical practice. Hence, the objectives of this study are to compare the treatment durations of subjects with Class I and Class II/1 malocclusions, and to identify the factors affecting the treatment duration of these malocclusions.

*Materials and Methods:* This was a chart review conducted in the orthodontic department of the Aga Khan University Hospital, Karachi. The study sample comprised 120 subjects and data were recorded from their treatment records. ANOVA and Bonferroni post-hoc were performed to determine the difference in treatment durations of Class I and Class II/1 malocclusions, whereas multiple linear regression was applied to identify the factors affecting the treatment duration.

*Results:* A statistically significant difference was found between the treatment durations of Class I and Class II/1 non-extraction ( $p = 0.007$ ), Class I non-extraction and Class II/1 extraction ( $p = 0.001$ ), and Class I and II/1 extraction ( $p = 0.004$ ) groups. The factors significantly affecting the treatment duration included missed appointments, breakages, IMPA (?? No abbreviations), duration of functional appliance, treatment plan and molar relationship.

*Conclusion:* • Orthodontic treatment of Class II/1 malocclusion lasts longer than that of Class I malocclusion • Orthodontic treatment involving extraction takes additional 5 months as compared to non-extraction therapy • Increased treatment time is associated with:  Missed Appointments  Breakages  IMPA  Duration of functional appliance  Treatment plan  Molar relationship

*Keywords:* Orthodontic treatment duration, Class I malocclusion, Class II malocclusion

#### 4.12 COMPARISON OF VARIOUS STORAGE MEDIA FOR AVULSED TEETH: A SYSTEMATIC REVIEW

*Samira Adnan, Farhan Raza Khan  
Department of Surgery, Aga Khan University,  
Karachi*

*Objectives:* The objective of this review is to compare various storage media available for transport and storage of avulsed teeth until they are re-implanted into the alveolar socket.

*Methods:* The literature regarding transport media for avulsed teeth was reviewed in PubMed, CINAHL Plus (Ebscohost) and Cochrane Library, from 1970 till date. Only studies focusing on human permanent teeth and PDL cells were included in the review. The protocol was registered with Prospero (Registration Number: CRD42013003558). A customized data extraction form was developed for data collection. For this poster, only studies on PDL cells assessment were included. SPSS version 19.0 was used to analyze the compiled data.

*Results:* • 62 articles were included (55 complete articles, 07 only abstracts) • 44 studies assessed PDL cells and 11 assessed clinical parameters • Highest number of relevant publications in *Dental Traumatology* • Highest number of relevant publications in years 2008 and 2012 • Most commonly assessed feature of PDL cells was VIABILITY • Most common method of assessment was Trypan blue exclusion/ staining • Most common medium studied before year 2000 was milk and variants, after 2001 more studies on natural products other than milk • Natural products other than milk were considered as acceptable media in 78.57% of studies in which they were compared, followed by milk and saline

*Conclusions:* • There is heterogeneity between studies, as most studies have assessed PDL viability as a marker for survival of teeth instead of actual clinical success. According to frequency of reported literature, natural products other than milk (coconut water and Propolis) are considered the most acceptable storage media when compared with other media However, due to ease of availability, use of milk as storage media is also acceptable

*Keywords:* Avulsed teeth, storage media, PDL cell viability

#### 4.13 PRACTICE OF ENDODONTIC RETREATMENT IN KARACHI

*Sana Ehsen Nagi, Farhan Raza Khan, Munawar Rahman*

*Department of Surgery, Aga Khan University,  
Karachi*

*Introduction:* Despite the recent improvements in endodontic instruments and techniques, incidence of endodontic failure still ranges between 2%-40%. To salvage such failed tooth, endodontic retreatment is often warranted. Although, some retreatment guidelines are there but on many areas there is no consensus on retreatment protocols/ procedures, thus, dentists follow different retreatment protocols.

*Objectives:* 1. To assess endodontic retreatment preferences and decision making among practicing dentists of Karachi. 2. To compare retreatment preferences of dentists with varying clinical experience.

*Methodology:* A questionnaire was distributed by hand to dental teaching faculty at various institutions of Karachi and some private practices. The questions gained information on aspects like: number of retreatment cases seen per month, most frequent cause of retreatment encountered in practice, use of medicaments & solvents, number of visits for retreatment, antibiotic prescription etc. Descriptive statistics & frequency distribution were computed. Chi-square test was applied to compare the difference between dentists having less than 5 years versus more than 5 years of clinical experience. Level of significance was kept at 0.05.

*Results:* • The response rate was 58%. • The most commonly reported reason for endodontic retreatment was under prepared/ under filled canals. • Gates glidden drills and hand files were the most commonly used.

*Conclusion:* It's alarming to note that almost half of the dentists reported inappropriate decision making in retreatment. Nearly 45% participants were confined to hand instruments only.

*Keywords:* endodontic retreatment, dental practice, root canal failure

#### 4.14 COMPARISON OF DENTAL AGE AND SKELETAL MATURITY STAGES IN PATIENTS WITH IMPACTED VERSUS ERUPTED MAXIL CANINES

*Sohaib Hassan, Attiya Shaikh, Mubassar Fida*  
*Department of Surgery, Aga Khan University,  
Karachi*

*Objective:* To compare skeletal maturity stages and mean dental ages in patients with impacted versus erupted maxillary canines through radiographs.

*Materials and Methods:* It was a case control study with a total number of 50 cases and 50 controls. The inclusion criteria were patients of chronologic age 13-16 years, cases with unerupted maxillary canines and controls with erupted maxillary canines. Dental age and skeletal maturity stages were recorded from pretreatment OPG and lateral cephalometric radiographs, respectively. To control the confounders, cases were matched with the controls on the basis of chronologic age, gender and vertical skeletal pattern.

*Results:* Independent sample t-test showed statistically significant difference ( $p = 0.000$ ) between mean dental ages of cases ( $11.35 \pm 0.47$  years) and controls ( $13.17 \pm 1.08$  years). Chi-Square test also showed statistically significant difference ( $p = 0.01$ ) of frequency distribution of skeletal maturity stages between cases and controls [CS1 (04%, 00%), CS2 (08%, 00%), CS3 (28%, 04%), CS4 (16%, 30%), CS5 (34%, 46%), CS6 (10%, 20%)], respectively.

*Conclusions:* Mean dental age was found to be significantly reduced in patients with impacted maxillary canines as compared to patients with erupted maxillary canines. Cervical vertebrae maturation was found to be significantly retarded in patients with impacted maxillary canines as compared to patients with erupted maxillary canines.

*Keywords:* Impacted maxillary canines, vertebrae maturation stages, dental age

# **Endocrinology / Diabetes**

## 5.1

### A CASE OF NON-FUNCTIONING CYSTIC PITUITARY ADENOMA

*Ali Asghar, Asma Ahmed*

*Department of Medicine, Aga Khan University, Karachi*

**Introduction:** Cystic lesions within the sella are uncommon in clinical practice, yet they are commonly seen in autopsy studies. Cystic pituitary adenoma is the most common cystic lesion within the sella. Cystic pituitary adenoma can be both functional as well as non-functional. Other causes of cystic sellar lesions include craniopharyngioma, Rathke's cleft cyst and arachnoid cyst.

**Case Presentation:** We report the case of a 38 year old lady, who presented with worsening headache for last two years. She had regular menstrual periods. She did not have visual disturbance or galactorrhea. On examination, she had normal visual field by confrontation testing. Laboratory investigations revealed normal anterior pituitary function, apart from a mildly elevated prolactin level of 42 (1.9-25.0) ng/mL. MRI of sella revealed a 1.6 x 1.6 x 2.5 cm cystic lesion in the sella, with rim enhancement, extending to the suprasellar region, with mild compression of the optic chiasma. The MRI of sella raised radiological suspicion of Rathke's cleft cyst. She underwent a trans-sphenoidal drainage of the cyst and a tissue biopsy was obtained. The histopathology showed multiple small fragments of neoplastic tissue, 0.7 x 0.4 cm in aggregate, which was pituitary adenoma. She received steroids perioperatively. A month after surgery, she had normal anterior pituitary hormones, with a screening MRI of sella showing significant reduction in the size of the sellar cyst, with post-operative changes.

**Conclusion:** This case highlights an uncommon case of non-functioning cystic pituitary adenoma. Differential diagnosis should always include craniopharyngioma, Rathke's cleft cyst and arachnoid cyst.

**Keywords:** Cystic pituitary adenoma, Non-functioning sellar cyst, Prolactin

## 5.2

### SEASONAL VARIATION IN HBA1C LEVEL IN TYPE 2 DIABETIC PATIENTS IN PAKISTAN

*Ali Asghar, Asma Ahmed, Bilal Ahmed, Najmul Islam*

*Department of Medicine, Aga Khan University, Karachi*

**Introduction:** HbA1c level is used to monitor glycemic control in patients with diabetes mellitus. Numerous studies have shown a slightly higher HbA1c level in winter as compared to summer season. This has been attributed to reduced exercise and increased food intake in winter season. We therefore studied the seasonal variation of HbA1c level in the port city of Karachi, where there is minimal temperature variation.

**Methods:** We retrospectively reviewed the files of 245 patients, with type 2 diabetes duration of at least one year, who had regularly attended our out-patient diabetic clinic for at least two years from July 2010 to June 2012, and had an HbA1c level  $\leq 7.5\%$  at the start of the study period. Winter comprised of four months (November – February), and summer comprised of 8 months (March – October).

**Results:** A total of 1284 HbA1c levels were analyzed (mean 2.6 levels/patient/year). Mean ( $\pm$ SD) HbA1c level was  $6.67 \pm 0.56\%$  in summer and  $6.82 \pm 0.71\%$  in winter. The slightly higher HbA1c level in winter was not statistically significant. There was also a positive correlation between HbA1c levels in summer and winter. We even did not observe seasonal variation in HbA1c in a subset of 39 patients in whom no treatment change was needed over the study period.

**Conclusion:** We did not observe any significant seasonal variation in HbA1c level in type 2 diabetes mellitus patients in Karachi. This may be because there is minimal temperature variation between seasons in this region.

**Keywords:** Seasonal variation, HbA1c, Pakistan

### 5.3 MULTIPLE BROWN TUMOURS MIMICKING MULTIFOCAL GIANT CELL TUMOUR IN PRIMARY HYPERPARATHYROIDISM

*Ali Asghar, Asma Ahmed, Syed Zubair Hussain,  
Laila Lakhani  
Department of Medicine and Medical College, Aga  
Khan University, Karachi*

*Introduction:* Primary hyperparathyroidism is an uncommon disease. Longstanding primary hyperparathyroidism leads to increased bone resorption and osteopenia. Rarely, it presents as brown tumours. Brown tumours are non-neoplastic lesions. They appear as lytic lesions on X-ray imaging and giant cells on histopathology. Their main differential diagnosis is giant cell tumour of bone.

*Case Presentation:* We report the case of a 34 year old lady, who had a ground level fall leading to right humerus fracture. There is history of hairline fracture of the right humeral shaft four years ago. Examination revealed bony prominences over nasal bridge and right third metacarpal bone. Her corrected serum calcium was 13.4 mg/dL. She underwent open reduction and internal fixation of her right humerus. Histopathology showed giant cell tumour. Skeletal survey showed generalized osteopenia, multiple lytic areas, multiple old fractures and medullary nephrocalcinosis. A diagnosis of multi-focal giant cell tumour of the bone was made. She was treated with monthly 4mg intravenous zoledronic acid for next eight months. But her serum calcium remained high. Subsequently, her intact parathyroid hormone level (PTH) came out to be 2326 (16-87) pg/mL. Ultrasound neck and sestamibi scan revealed parathyroid adenoma. The lesion was surgically excised. Serum calcium and intact PTH normalized after surgery.

*Conclusion:* This case highlights the rare clinical manifestation of primary hyperparathyroidism in the form of brown tumours. It emphasizes the fact that brown tumour of hyperparathyroidism should always be ruled out by checking PTH level, before a diagnosis of giant cell tumour of the bone is made.

*Keywords:* Brown tumour, Giant cell tumour, Primary hyperparathyroidism

### 5.4 GESTATIONAL DIABETES AND ITS CONSEQUENCES ON DEVELOPING FOETUS: NEED FOR POLICY IMPLEMENTATION

*Asifa Alia, Syeda Sadia Fatima, Bushra Chaudhry,  
Lumaan Sheikh, Aisha Shiekh, Aisha Wali  
Department of Obstetrics and Gynaecology,  
Fatima Memorial Hospital, Lahore, Departments  
of Biological & Biomedical Sciences, Obstetrics  
and Gynaecology and Medicine, Aga Khan  
University, Karachi*

Diabetes complicates pregnancy, affecting 0.6% - 15% of all pregnancies each year globally. In Pakistan it is known to range from 8-14 %. It poses serious immediate adverse consequences for the mother and fetus with major financial implications; further it clearly leads to development of obesity and metabolic syndrome. The objective of this review was to identify the major fetal complications, risk assessment and preventive solutions. We considered all available published reports related to GDM complications pertaining to Pakistan or South Asian Population. Search indicated the risk of malformation and perinatal mortality. The critical time period for optimal glycemic control was early organogenesis (7 weeks). Gestational diabetes was strongly associated with higher birth weights, cesarean section of mother and risk of infant shoulder dystocia, Erb's palsy, clavicular fractures, fetal distress, and birth asphyxia resulting in 30 – 50 % of perinatal mortality. Respiratory distress syndrome may occur up to 31% of infants while cardiac septal hypertrophy may be seen in 35– 40 % of cases. Using insulin therapy has decreased the incidence of fetal macrosomia however, the extent of any effect on maternal and neonatal health outcomes are uncertain. Pre-pregnancy care is the only intervention that targets glycemic control at early organogenesis. Policy makers need to work at ;1) to prevent the development of GDM per se, may implement ADA guidelines by which patients should be screened for risk factors for GDM at their initial visit and 2) to organize program for reducing the incidence of type 2 DM.

*Keywords:* Gestational Diabetes, Complications, Policy implimentation

## 5.5 MOLECULAR DETERMINATION OF GENETIC POLYMORPHISM INTERPLAY BETWEEN DIABETES TYPE II AND GESTATIONAL DIABETES MELLITUS.

*Bushra Chaudhry, Syeda Sadia Fatima, Asifa Alia, Shyan Ahmed, Sara Atif, Afira Waqar  
Department of Biological & Biomedical Sciences, Aga Khan University, Karachi,  
Department of Obstetrics and Gynaecology, Fatima Memorial Hospital, Lahore and  
Medical College, Aga Khan University, Karachi*

To date, there are 10 different genes with 11 SNPs have been found associated with GDM in some populations of the world. Among them SNPs polymorphism of TCF7L2, KCNQ1 and MTNR1B has only been identified in East Asian and European GDM populations. These three gene polymorphism has shown to possess the largest effect size associated with risk of GDM. We hypothesize that, TCF7L2, KCNQ1 and MTNR1B; SNPs may also play a role in development of insulin resistance and secretion in pregnant females in Pakistan population, either additively, synergistically or independently along with environmental factors. These changes may later implement the occurrence of type II diabetes. We are investigating whether the genotypes of five SNPs (rs7903146, rs2237892, rs2237895, rs10830963, rs10830962) of three genes described above, are involved in predisposition to gestational diabetes in our women population. To test the hypothesis, we are recruiting currently diagnosed GDM positive pregnant females as cases and normoglycemic pregnant females as controls for this study and their association in gestational diabetics, by restriction fragment length polymorphism methods and sequencing of the partial gene fragments. We are Applying analytical methods including power and significance testing along with the presences of different variables making different models. Here we represent KCNQ1 conditions optimized for the analyses of genotyping for two SNPs rs2237895 and rs2237892. This has provided us the bases for a pilot scale study on women of different

ethnicities of Pakistan living in different socio economic setups by including a set of other genes SNPs which have been reported to be associated with high effect size in patients of T2D in Pakistan.

*Keywords:* GDM, Genetics, Type II Diabetes

## 5.6 STROKE IN PEOPLE WITH TYPE 2 DIABETES: PROPORTION AND PREDICTORS AMONG ATTENDEES OF OUT-PATIENT CLINICS IN KARACHI, PAKISTAN

*Raheem Dhanani, Zahra Aziz Samani, Saira Aziz Samani, Syed Iqbal Azam  
Department of Family Medicine, Medical College, Aga Khan University, Karachi,  
Department of Medicine, Mount Auburn Hospital and Department of Community Health Sciences, Aga Khan University, Karachi*

*Objectives:* Diabetes is a complex metabolic disorder associated with large number of long-term complications including stroke. The objectives of this study were to identify the proportion of people with type 2 diabetes having stroke and to determine the predictors associated with stroke among these people.

*Methods:* This cross-sectional study was conducted in four clinics in Karachi; one each represented private, public, non-governmental and family practice set ups. A total of 934 persons with type 2 diabetes attending these clinics for follow-up visit were approached to participate in the study.

*Results:* In all, 37 (4%) of the people with type 2 diabetes were found to have stroke. Increasing age (50 and above) of the patient (AOR=2.39; 95% CI: 1.03–5.58), physical inactivity (AOR=2.39; 95% CI: 1.03–5.56) and high systolic BP (AOR=4.02; 95% CI: 1.39–11.64) were found to be independently associated with stroke.

*Conclusion:* In this study, although a lower proportion of stroke was found among people with type 2 diabetes in Karachi, Pakistan. But it was observed that two out of three predictors

found to be independently associated with stroke are preventable and modifiable. Interventions are required to prevent or modify the predictors for stroke among type 2 diabetic patients.

**Keywords:** Diabetes, Stroke, Predictors

## 5.7

### ACUTE PHASE REACTANT PROTEINS AND THEIR ROLE IN TYPE II DIABETES

*Faiza Alam, Fasiha Fatima, Shehryar Orakzai, Najeeha Talat Iqbal, Syeda Sadia Fatima*  
Departments of Biological & Biomedical Sciences, Emergency Medicine and Paediatrics and Child Health, Aga Khan University, Karachi and Department of Biochemistry, BMSI, Jinnah Postgraduate Medical Centre, Karachi

**Objective:** Diabetes mellitus is a metabolic disorder characterized by hyperglycemia with disturbances of carbohydrate, fat and protein metabolism, resulting from defects in insulin action, insulin secretion or both. Low grade inflammation plays an important role in the pathogenesis of diabetes and other conditions. The process of inflammation induces the hepatic synthesis of acute phase proteins like hs-CRP and Ferritin which is believed to play a significant role in developing insulin resistance. This study aims to measure the levels of hs-CRP and Ferritin in blood to assess the level of inflammation in high risk population and the correlation of increased inflammatory markers with insulin resistance.

**Method:** Study subjects (n=74) were recruited in this study which were further classified as Non diabetic control (NDC;n=29 )and Diabetics (DM, n=45). Fasting blood samples were analyzed for blood glucose, Insulin, hs-CRP & Ferritin.

**Results:** The mean age of the study subjects was  $41.56 \pm 1.64$  years and FBS  $119.57 \pm 5.23$  mg/dl. Elevated levels of serum ferritin ( $293.90 \pm 79.48$ ng/ml), insulin ( $34.89 \pm 3.10$ ), HOMA-IR ( $11.58 \pm 1.32$ ) and hs-CRP ( $7.39 \pm 1.14$ mg/L) were found in DM group. There was positive correlation between HOMA-IR with FBS ( $r=0.596$ ;  $p<0.001$ ), serum ferritin

( $r=0.306$ ;  $p=0.008$ ) and insulin ( $r=0.866$ ;  $p<0.001$ ). However, there was a negative correlation between HOMA-IR with serum Iron ( $r=-0.280$ ;  $p=0.016$ ) and Transferrin saturation ( $r=-0.316$ ;  $p=0.006$ )

**Conclusion:** Acute phase reactant protein may cause an undesirable inflammatory response which may lead to insulin resistance and pathogenesis of Diabetes Mellitus.

**Keywords:** Diabetes, ferritin, inflammation

## 5.8

### ROLE OF HOMEOSTATIC MODEL ASSESSMENT-INSULIN RESISTANCE IN ASSESSING INSULIN RESISTANCE IN PATIENTS WITH POLYCYSTIC OVARIAN SYNDROME

*Hafsa Majid, Aysha Habib Khan, Qamar Masood*

Departments of Pathology & Microbiology and Medicine, Aga Khan University, Karachi

**Background:** Polycystic ovary syndrome (PCOS) is the commonest endocrine disturbance in women of reproductive years. Homeostatic model assessment insulin resistance (HOMA-IR) is widely accepted clinical index for insulin resistance, but few studies have evaluated its role in patients with polycystic ovarian syndrome. So this study was conducted to assess the utility of HOMA-IR in assessing insulin resistance and correlate the clinical outcome with HOMA-IR in patients with PCOS.

**Material and Methods:** An observational study was done at the section of Chemical Pathology, AKUH from May 2013 & October 2013. Electronic medical records of 400 women diagnosed with PCOS from January 2009 to December 2010, were reviewed. HOMA was computed using the formula (fasting glucose  $\times$  fasting insulin)/405, taking normal value  $<2$  in adults. Data was analyzed by SPSS 19.

**Results:** A total of 90 premenopausal females diagnosed with PCOS were included. Mean age was  $30.07 \pm 5.6$  years. Mean HOMA-IR and fasting insulin to glucose ratio were 2.72 and 0.14 respectively. An overall prevalence 60.4%

and 16.5% of insulin resistance (IR) was observed using HOMA-IR and FGIR respectively. Patients (n=36) with HOMA-IR <2 presented with primary infertility (2%), subfertility (11%), gestational diabetes (11%) and obesity (2%). Patients (n=38) with HOMA-IR >2 had primary infertility (9%), subfertility (16.3%), gestational diabetes (23%) and obesity (5.4%). HOMA-IR had better sensitivity and specificity than FGIR for diagnosing IR.

*Conclusion:* A high frequency of IR in PCOS subjects necessitates early diagnosing and HOMA is a good static marker for diagnosing IR.

*Keywords:* HOMA-IR, PCOS, Insulin Resistance

## 5.9

### PARADOX OF OBESITY AND UNDER NUTRITION – COEXISTENCE OF DOUBLE BURDEN IN ADOLESCENTS FROM URBAN SLUM OF KARACHI

*Khadij Nuzhat Humayun, Arjumand Rizvi, Zulfiqar A Bhutta*

*Department of Paediatrics & Child Health, Aga Khan University, Karachi*

*Introduction:* High prevalence of under-nutrition, of macro and micro nutrients is a well recognized problem among socially deprived children of developing countries. However the coexistence of obesity with under-nutrition in these children is emerging as a significant issue.

*Purpose:* We assessed nutritional profile of a cohort of children between 8 to 11 years from an urban slum of Karachi.

*Results:* Nutritional characteristics of 1814 children were studied. 837(46%) were boys and 977(54%) girls. Their mean age (SD) was 9.4 (0.9) years. 19% of these children were underweight (95%CI) (17.2%-20.8%), 20.9% and 17.4% girls. Stunting was seen in 14.8% (13.2%-16.5%) children: 17.2% boys and 12.9% girls. The prevalence of wasting was 13.3% (11.7%-14.9%):15.3% in boys and 9.3% in girls. The mean BMI was 14.6. Interestingly 11.7% children of the cohort had a BMI above the

overweight/obesity cutoff. Of these 11.1% were boys versus 12.3% girls Anemia was present in 20.4 % children and it was more prevalent in girls - 24.0% than the boys - 15.7 %. Serum Ferritin levels were low in 12.4% children. Less than adequate serum Retinol and Zinc levels were seen in 49.9% and 23.5% children respectively. All the micronutrient deficiencies were also present in children who were above the BMI cutoffs of overweight/obesity.

*Conclusions:* Our study highlights a unique challenge faced by school-aged children from low socioeconomic background of Pakistan: There is significant existence of over-nutrition in the background presence of a persistently high burden of macro and micro nutrient under-nutrition.

*Keywords:* obesity, children, adolescents

## 5.10

### SUCCESSFUL TRANSFER FROM INSULIN TO GLIBENCLAMIDE IN A NEONATE WITH DIABETES: FIRST CASE FROM PAKISTAN

*Khadija Nuzhat Humayun, Shabina Ariff, Raman Kumar*

*Department of Paediatrics & Child Health, Aga Khan University, Karachi*

*Background:* Neonatal diabetes mellitus is rare with prevalence of approximately 1 in 500,000 infants worldwide. It is a monogenic form of diabetes with onset within 6 months of age. It is caused by different genetic abnormalities, and may either be transient or permanent. Clinical management of most permanent types of neonatal diabetes required lifelong insulin treatment. Recently, it is known that heterozygous activating mutations in the genes forming the ATPsensitive K channel KCNJ11 and ABCC8, are a common cause of neonatal diabetes. Sulfonylurea treatment has been found to restore insulin secretion in patients with these mutations and they can be effectively treated orally with significantly improved glycemic control and quality of life



**Case Summary:** We report a term baby who presented at one month with fever, tachypnea and vomiting. Born to consanguineous parents with no family history of Diabetes his birth and past history so far was unremarkable. In hospital he was found to have glucose of 1299mg/dl with acidosis and ketonuria. He was managed as Diabetic Ketoacidosis and once resolved was switched to subcutaneous NPH Insulin. We sent his samples to for genetic testing. He was found to be heterozygous for the KCNJ11 missense mutation, p.R201H. This result confirmed a diagnosis of neonatal diabetes due to a mutation in the Kir6.2 subunit of the K-ATP channel. Glibenclamide was started and Insulin was successfully stopped within one week of starting Glibenclamide.

**Results:** At 3 months of age he has achieved normoglycemia (HbA1c 5.9%) on Glibenclamide.

**Conclusion:** Glibenclamide was a useful treatment option for him.

**Keywords:** Neonatal, diabetes, sulfonylureas

### 5.11 STUDIES ON PROTECTIVE EFFECT OF NAGILLA SATIVA, A COMPONENT OF POLYHERBAL FORMULATION (POL-4) IN ALLOXANISED RATS

*Malik Hassan Mehmood, Muhammad Salman Faisal, Abdul Malik, Anwarul Hassan Gilani  
Department of Biological & Biomedical Sciences and Medical College, Aga Khan University, Karachi*

**Background and Objective:** Diabetes mellitus is one of the most prevalent chronic diseases in the region, characterized by raised blood glucose and other lesions caused by oxidative stress. It is being treated with a wide range of therapeutic strategies including traditional medicine. Seed extracts of Nagilla sativa, one of the component of the traditional herbal formulation named POL-4, is being widely used in this regard. This study was planned to evaluate whether seed extract of Nagilla sativa, individually, have any measurable anti-diabetic effects and how are

they related to the overall anti-diabetic activity of the POL-4 formulation, in alloxan induced diabetes in rats.

**Method:** In-vivo and in-vitro assays were carried out to analyze the glucose lowering potential and protective properties of the Nagilla sativa extract in alloxan induced diabetic rats.

**Results:** In oral glucose tolerance test, administration of N. sativa showed promising glucose lowering activity at the doses of 150 and 300 mg/kg, being more efficacious at higher tested dose. The glucose lowering potential of N. sativa was found similar to the results obtained with positive control group taking glibenclamide at a dose of 7 mg/kg. In alloxan-induced diabetic model, N. sativa also showed improvement in diabetic status as water intake in the animals administered the extract returned towards normal compared to the positive control group administered glibenclamide at a dose of 7 mg/kg. These are partial results of this study, while the study is still going on.

**Conclusion:** Based on these results, it can be speculated that the seed extract of N. sativa possesses antidiabetic activity.

**Keywords:** Nagilla sativa, antidibetic, alloxan-induced diabetes

### 5.12 DIABETES MELLITUS IN MEN: A SEXUAL HEALTH CONCERN

*Numan Hussain  
Department of Community Health Sciences, Aga Khan University, Karachi*

**Introduction:** Diabetes Mellitus affects many systems of human body and one of them is reproductive system. Sexual health can be affected by treatment and disease itself. Though side effects and complications are treated once they appear but detection of these complications before they occur or at early stage is more important. Sexual health is usually overlooked by health care team in diabetic patients. Diabetes is disastrous to sexual health of male diabetic patients. It can cause erectile dysfunction, testosterone or androgen deficiency, retrograde

ejaculation, inflammation of penis (balanitis), lack of libido in male patients.

*Purpose:* The objective of this study was to analyze the effect of diabetes on sexual health of male diabetic patients.

*Method:* Systematic review of 7 articles from 1997-2008 gathered through electronic media device.

*Results:* Diabetes mellitus can result several sexual dysfunctions in male which includes erectile dysfunction, testosterone or androgen deficiency, retrograde ejaculation, balanitis and lack of libido. Sexual health complications can occur in all types of diabetes mellitus. Sexual health complications are associated with diabetic neuropathy.

*Conclusion/Recommendation:* Sexual health complications in diabetic patients are common. The awareness of these complications to health care team is vital. It will help healthcare team members to identify these complications in patients. Secondly it will help healthcare team to grab before a complication occurs and suggest treatment and prevention from further worsening. The assessment of male diabetic patients should include thorough sexual health evaluation.

*Keywords:* Diabetes Mellitus, Sexual health, diabetic neuropathy

### 5.13

#### DIABETES MELLITUS: THE ORIGIN OF LIFE STYLE MODIFICATION AND NURSING MANAGEMENT

*Numan Hussain, Noreen Kamran  
Department of Community Health Sciences and Alumni, Aga Khan University, Karachi*

*Introduction:* Nurses are key educators in the fight against diabetes. Understanding is significant in regards to what the disease is? , and the consequences of what inaccurate management of the disease may do for their overall health to prevent further complications of diabetes mellitus? As health care professionals, nurses are vital enlightening wealth for patients and their families.

Management of this disease may comprise of: cautiously managing diet, exercise, taking oral diabetes medication, using some form of insulin, maintaining proper circulation in extremities and may be further complicated by other external factors such as stress, illness, menstruation, and other physiological factors unique to individual patient.

*Objectives:* 1. To recognize the understanding of disease and its further complication among diabetic patient 2. To identify the nursing approaches to reduce incidences of diabetes complication.

*Method:* Systematic review of the literature from 10 research articles gathered through print and electronic media device published between the years 2003 to 2005.

*Result:* While there is no clear-cut casual controlled assessment that “proves” the significance of disease management, there is quite large bodies of facts gathered that proposes the effectiveness of disease management in improving excellence of care in diabetes.

*Conclusion/Recommendations:* The nursing care plan provides exact resources at each risk level to assist clients, to improve self-management and control diabetes and other related conditions. For example, a variety of patient education materials should be available at hospitals, health education workshops, and newsletters or other medium of communication like internet radio etc.

*Keywords:* Diabetes, Lifestyle Modification, Nursing Management

### 5.14

#### DEVELOPMENT OF SKIN HYPOPIGMENTATION IN A PATIENT WITH METASTATIC PAPILLARY CARCINOMA THYROID TREATED WITH SORAFENIB

*Syed Zubair Hussain, Ali Asghar, Mubasher Ikram, Najmul Islam  
Departments of Medicine and Surgery, Aga Khan University, Karachi*

**Background:** Tyrosine kinase inhibitors (TKI) can be considered as the effective option of treatment in patients with metastatic radioiodine refractory differentiated thyroid cancers. The cutaneous manifestations of Sorafenib include rash, desquamation, hand foot skin reactions, pruritus, alopecia and erythema. We report the first case of hypopigmentation related to sorafenib therapy.

**Case presentation:** We report the case of a middle aged gentleman with metastatic papillary carcinoma of thyroid diagnosed in 2005. He was managed with total thyroidectomy, radioactive iodine and TSH suppressive therapy. Despite receiving radioactive iodine 530 mci cumulative dose, patient had persistent disease with lung metastasis. Therefore a TKI, sorafenib, was started. He developed hypopigmentation of the skin more prominent on face six weeks after starting sorafenib treatment. He also developed diarrhea, desquamation of hands and feet, hair loss over scalp, eye brows and moustache. Sorafenib treatment was discontinued. His diarrhea stopped in one week and after four weeks his skin became normalized whereas he regained his hair in six weeks.

**Conclusion:** To our knowledge, hypopigmentation in our patient appears to be the first reported of its kind in the literature to date. Sorafenib is used in renal cell carcinoma, hepatocellular carcinoma and radioactive iodine refractory thyroid carcinoma, therefore it is very important to be aware of hypopigmentation as a potential side effect for both physicians and patients.

**Keywords:** Metastatic papillary carcinoma thyroid, Sorafenib, Hypopigmentation

## 5.15 PREABLATION STIMULATED THYROGLOBULIN/TSH RATIO AS A PREDICTOR OF SUCCESSFUL I-131 REMNANT ABLATION IN PATIENTS WITH DIFFERENTIATED THYROID CANCER FOLLOWING TOTAL THYROIDECTOMY

Syed Zubair Hussain, Sarwar Malik, Maseeh Uz  
Zaman, Najmul Islam

Departments of Medicine and Radiology, Aga  
Khan University, Karachi

**Background:** Thyroid cancer is the most common endocrine cancer. Treatment options are total thyroidectomy followed by I-131 remnant ablation (RRA) and thyroid stimulating hormone (TSH) suppression with thyroxine. Stimulated thyroglobulin (sTg) is a good predictor of successful ablation in DTC. Its levels can be influenced by tumor staging and TSH values. Therefore we did this study using TSH to correct the predictive value of sTg. Our objective was to ascertain whether sTg/TSH ratio can be used as a good predictor of successful RRA.

**Methods:** We retrospectively reviewed the records of 75 patients with DTC, who underwent total thyroidectomy followed by RRA and TSH suppression. We assessed preablation sTg, preablation sTg/TSH ratio, age, gender, histopathology, capsular invasion, tumor size, nodal involvement, distant metastasis, TNM staging, I-131 ablative dose and American Thyroid Association (ATA) risk as predictors of successful RRA.

**Results:** Preablation sTg and sTg/TSH ratio are significantly associated with ablation outcome. Cutoff value for sTg to predict successful and unsuccessful ablation was 18ng/mL with 76.7% sensitivity and 79.1% specificity while for sTg/TSH cutoff was 0.35 with 81.4% sensitivity and 81.5% specificity ( $P < 0.001$ ). Association was stronger for sTg/TSH ratio with adjusted odd's ratio (AOR) 11.64 (2.43-55.61) than for sTg with AOR 5.42 (1.18-24.88).

**Conclusion:** Our study establishes the role of preablation sTg/TSH ratio in predicting the ablation outcome. Preablation sTg/TSH ratio can be considered as better predictor of ablation outcome than sTg, tumor size and capsular invasion. Therefore we suggest to use sTg/TSH ratio for risk stratification too.

**Keywords:** Differentiated thyroid cancer, Preablation stimulated thyroglobulin/TSH ratio, I-131 remnant ablation

### 5.16 RELATIONSHIP OF AN ADIPOKINE CHEMERIN WITH SUBCLINICAL DIABETES

*Syeda Sadia Fatima, Najeeha Talat Iqbal  
Departments of Biological & Biomedical  
Sciences and Paediatrics and Child Health, Aga  
Khan University, Karachi*

**Objective:** Chemerin a novel adipokine; affects the lipid and glucose homeostasis along with adipose tissue metabolism. Elevated levels of peptide have shown to be associated with disruption of normal insulin function and systemic inflammation, which also results in hyperglycemia in clinical diabetes. This study aims to identify whether chemerin in conjunction with TNF  $\alpha$  and hsCRP can act as screening marker to identify sub clinical diabetes.

**Methods:** For this study, 52 asymptomatic healthy volunteers and 22 chronic diabetics (DM) were enrolled. Of the 52 study participants, 23 were classified as as newly diagnosed diabetics on the basis of impaired glucose tolerance test (NDM), subjects with normal glucose tolerance were classified as control (n=29).

**Results:** High chemerin level was observed in 23 NDM ( $p < 0.01$ ; ANNOVA ) compared to controls and DM. A strong positive association was also found between serum chemerin and FBS ( $P = 0.029$ ;  $r = 0.254$ ). Both the hsCRP and TNF  $\alpha$  levels were elevated in subjects with DM compared to controls ( $p < 0.01$ ). Similar increase in TNF $\alpha$  levels were also observed in NDM compared to DM ( $P < 0.001$ ).

**Conclusion:** The preliminary findings suggest that chemerin may serve as a potential screening marker in diagnosis of DM or predicting the risk of development of diabetes in asymptomatic individual. Progression to clinical diabetes is associated with an increase inflammatory responses, which usually wanes off in established disease. Further studies with a larger panel of cytokines may predict a bio marker of sub clinical diabetes.

**Keywords:** Chemerin, cytokines, diabetes

### 5.17 LAURENCE- MOON- BARDET- BIEDLE SYNDROME

*Sarwar Malik, Rukhsana A Sattar, Tahira  
Baloch, Hira Hanif, Shaam Kumar, Shahnaz  
Shah, Jamal Ara  
Section of Endocrinology, Department of  
Medicine, Aga Khan University, Karachi*

Laurence-Moon-Bardet-Biedl syndrome is a rare, autosomal recessive genetic disorder associated with retinitis pigmentosa, spastic paraplegia, hypogonadism, mental retardation central obesity and polydactyly. We report a case of Laurence Moon Biedl syndrome having a microglossia and absence of canine, 1 lower incisor, 1 upper and 1 lower premolar, 1 upper and 1 lower molar teeth and small mouth.

**Keywords:** Laurence Moon Biedl Syndrome, obesity, dental abnormalities and small mouth.

### 5.18 A PHASE THREE OPEN LABEL RANDOMIZED CONTROLLED TRIAL TO COMPARE THE EFFICACY OF ORAL HYPOGLYCEMIC AGENTS (OHA) WITH INSULIN IN THE TREATMENT OF GESTATIONAL DIABETES MELLITUS

*Aisha Syed Wali<sup>1</sup>, Aisha Sheikh<sup>2</sup>, Lumaan  
Sheikh<sup>1</sup>, Neelofur Babar<sup>1</sup>, Sidrah Nausheen<sup>1</sup>,  
Jaweed Akhter<sup>2</sup>  
<sup>1</sup>Department of Obstetrics and Gynaecology,  
<sup>2</sup>Section of Endocrinology, Department of  
Medicine, Aga Khan University, Karachi*

**Background:** The incidence of GDM is 1 – 14 % (5 – 8 % reported in most areas). It is globally on the rise in parallel with type 2 diabetes. The short and long term adverse maternal, fetal and neonatal outcomes in pregnancy with Diabetes are well known. Insulin therapy has been regarded as the gold standard medical intervention in pregnancy. It has limitations especially in poorly resourced, illiterate and non-compliant population. Studies have shown that some oral hypoglycemic agents (OHA) ( FDA

category B: Glibenclamide and Metformin) are safe in pregnancy. Studies comparing these with insulin have found them to be as effective as insulin with comparable outcomes in pregnancy.

**Objectives:** Primary objective: To compare efficacy of Oral Hypoglycemic Agents and Insulin in the treatment of GDM (percentage of subjects achieving target blood sugars at delivery).

Secondary objective: To compare cost and acceptability to treatment in both groups.

**Methods:** This is a collaborative study between the Department of Obstetrics and Gynaecology and the Section of Endocrinology, Department of Medicine.

**Results and Conclusions:** This clinical trial is in progress and is recruiting patients. Results will be communicated later on.

## 5.19 DIABETIC EMERGENCIES INCLUDING HYPOGLYCEMIA DURING RAMADAN

Jamal Ahmad<sup>1</sup>, Md Faruque Pathan<sup>2</sup>,  
Mohammed Abdul Jaleel<sup>3</sup>, Farah Naaz  
Fathima<sup>4</sup>, Syed Abbas Raza<sup>5</sup>, AK Azad Khan<sup>6</sup>,  
Osama Ishtiaq<sup>7</sup>, Aisha Sheikh<sup>8</sup>

<sup>1</sup> Rajiv Gandhi Centre for Diabetes and Endocrinology, J. N. Medical College, Aligarh Muslim University, Aligarh, India, <sup>2</sup> Department of Endocrinology, BIRDEM, Dhaka, Bangladesh <sup>3</sup> Department of Medicine, Bangalore Diabetes Hospital, Vasanthanagar, and AJ Diabetes Care and Polyclinic, BTM Layout, India, <sup>4</sup>

Department of PSM, St. John's Medical College, and Hospital, Bangalore, India, <sup>5</sup> Department of Endocrinology, Shaukhat Khanum Cancer Hospital and Research Center, Lahore, Pakistan, <sup>6</sup> President, Diabetic Association of Bangladesh, Bangladesh, <sup>7</sup> Department of Endocrinology, Shifa International Hospital, Islamabad, Pakistan

<sup>8</sup> Section of Endocrinology, Department of Medicine, The Aga Khan University Hospital, Karachi, Pakistan

Majority of physicians are of the opinion that Ramadan fasting is acceptable for well-balanced type 2 patients conscious of their disease and

compliant with their diet and drug intake. Fasting during Ramadan for patients with diabetes carries a risk of an assortment of complications. Islamic rules allow patients not too fast. However, if patient with diabetes wish to fast, it is necessary to advise them to undertake regular monitoring of blood glucose levels several times a day, to reduce the risk of hypoglycemia during day time fasting or hyperglycemia during the night. Patient with type 1 diabetes who fast during Ramadan may be better managed with fast-acting insulin. They should have basic knowledge of carbohydrate metabolism, the standard principles of diabetes care, and pharmacology of various antidiabetic drugs. This Consensus Statement describes the management of the various diabetic emergencies that may occur during Ramadan.

**Keywords:** Diabetic ketoacidosis, fasting, hyperglycemia, hypoglycemia, infection, ketosis

## 5.20 ROLE OF ORAL HYPOGLYCEMIC AGENTS IN THE MANAGEMENT OF TYPE 2 DIABETES MELLITUS DURING RAMADAN

Mir Iftikhar Bashir<sup>1</sup>, Md Faruque Pathan<sup>2</sup>, Syed Abbas Raza<sup>3</sup>, Jamal Ahmad<sup>4</sup>, AK Azad Khan<sup>5</sup>,  
Osama Ishtiaq<sup>6</sup>, Rakesh K Sahay<sup>7</sup>, Aisha Sheikh<sup>8</sup>, Abdul Hamid Zargar<sup>9</sup>

<sup>1</sup> Department of Endocrinology, SKIMS, Srinagar, Jammu and Kashmir, India, <sup>2</sup> Department of Endocrinology, BIRDEM, Dhaka, Bangladesh, <sup>3</sup> Department of Endocrinology, Shaukhat Khanum Cancer Hospital and Research Center, Lahore, Pakistan, <sup>4</sup> Rajiv Gandhi Centre for Diabetes and Endocrinology, Faculty of Medicine, J. N. Medical College, Aligarh Muslim University, Aligarh, India, <sup>5</sup> President, Diabetic Association of Bangladesh, Dhaka, Bangladesh, <sup>6</sup> Department of Endocrinology, Shifa International Hospital, Islamabad, Pakistan, <sup>7</sup> Department of Endocrinology, Osmania Medical College, Hyderabad, India, <sup>8</sup> Section of Endocrinology, Department of Medicine, The Aga Khan University, Karachi, <sup>9</sup> Advanced Center for

*Diabetes and Endocrine Care, Srinagar, Jammu and Kashmir, India*

It is obligatory for all adult Muslims to observe fast during the holy month of Ramadan, but sick individuals including those with diabetes mellitus are exempted from the duty of fasting. Specific medical advice must be provided to individual patients concerning the potential risks they must accept if they decide to fast. Any alteration in medications deemed necessary to provide an effective and safe antidiabetic regimen should be instituted well before the start of Ramadan. Diet-controlled patients and those well controlled on insulin sensitizers have low risk of hypoglycemia and may safely fast with some modification in the timing of the doses. Newer generation sulfonylureas (gliclazide MR and glimepiride) have reasonable safety profile during Ramadan fasting and are economical options for a large number of diabetics worldwide, especially in the developing countries; older, long acting sulfonylureas like glibenclamide and chlorpropamide should be avoided during fasting. Oral DPP-IV inhibitors are important substitutes to sulfonylureas for patients with diabetes mellitus during fasting owing to their glucose-dependent mechanism of action, efficacy, and tolerability. This group of drugs causes a moderate A1c reduction, are weight neutral, and have a very low risk of hypoglycemia. Short-acting insulin secretagogues are an option in the subset of fasting diabetic patients who have predominantly post-prandial hyperglycemia.

*Keywords:* Gliptins, hypoglycemia, insulin sensitizers, Ramadan fasting, sulfonylureas

**5.21**  
**MALNUTRITION AND QUALITY OF LIFE IN CIRRHOSIS PATIENTS IN TERTIARY CARE HOSPITAL KARACHI**

*Om Parkash, Romaina Iqbal, Javeria Rauf, Wasim Jafri*  
*Section of Gastroenterology, Department of Medicine Aga Khan University, Karachi*

*Aims:* Malnutrition in cirrhotic patients is responsible for higher morbidities and mortalities and extent of malnutrition/ under-nutrition in cirrhotic patients in Pakistan is not known. Therefore it is mandatory to investigate burden of malnutrition in cirrhosis and their quality of life.

*Methods:* This was cross sectional study on cirrhotic patients visiting outpatient clinics of Aga Khan University and Jinnah post graduate medical center Karachi in ward 7 in 2010-12. Malnutrition was assessed by protein calorie malnutrition score (PCM), Anthropometry and Bio-electrical impedance (BIA). Subjects were divided into mild, moderate and severe malnutrition. Quality of life was assessed by using the health related quality of life (HRQOL) questionnaire.

*Results:* 148 cirrhotic subjects were included in study, 70 (47.3%) were male and mean age of subjects was 49.1±11 years. 138 (87.8%) had viral associated liver cirrhosis. Majority of the study subjects had child A (n=61; 44.5%) and B (n=59; 43.1%). In anthropometry, mean weight (kg) was 61.11±12.48; height (meters) was 1.64±0.07, bodymass index (BMI) was 22.34±5.9, midarm circumference was 26.40±4.15 cm, triceps skind thickness 27.3±10.43mm. Bioelectrical impedance showed total body water (Kg) 34.99±7.51, fat free mass (kg) 45.6±12.09, total body fat percentage was 22.27±10.79. Mean Protein calorie malnutrition (PCM) score was 91.20±16.70. The PCM showed malnutrition in approximately 109 (73.6%) subjects; mild in 72(48.4%), moderate 34(23%) and severe in 3 (2%). 57(35.4%) had poor quality of life. There is significant correlation of PCM score with BIA parameters (TBW, FFMI, Fat% etc) and there is not significant correlation between PCM and HRQOL.

*Conclusion:* We conclude that majority of the patients with liver cirrhosis had malnutrition as assessed by PCM score as well as BIA and anthropometry.

*Keywords:* Liver cirrhosis, PCM, malnutrition

## 5.22

### RELATIONSHIP OF MALNUTRITION AND MICRONUTRIENT DEFICIENCY WITH LIVER FIBROSIS IN CIRRHOTIC PATIENTS, PROSPECTIVE OBSERVATIONAL STUDY AT TERTIARY CARE HOSPITAL

*Om Parkash, Hasnain Alishah*  
Section of Gastroenterology, Department of Medicine Aga Khan University, Karachi

Burden of CLD is high in our country. Many of these patients are malnourished due to decreased oral intake and protein energy malnutrition in addition to the co morbidities associated with the disease itself. Published data is scarce on malnutrition in these patients. Also it is not known whether malnutrition has a relationship with liver fibrosis. Moreover we also do not know about the frequency of deficient micronutrients in cirrhosis with malnutrition. Hence it is essential to work on relationship of malnutrition and liver fibrosis. This may serve as an indirect tool for assessment of liver fibrosis. Also identifying the burden of micronutrient deficiency and correlation with liver fibrosis may serve as an intervention to improve malnutrition and subsequently liver cirrhosis.

#### Research question

What is the frequency of micronutrients deficiency in serum in patients with liver cirrhosis?

What is the relationship of malnutrition with fibrosis in liver cirrhosis?

What is the relationship of micronutrients with fibrosis in liver cirrhosis?

*Objective:* To determine the frequency of micronutrients deficiency (Selenium, vitamin D, Iron, Zinc, B12, Folate ) in patients with liver cirrhosis

To determine relation between malnutrition and liver fibrosis in patients with cirrhosis

To determine relation between micronutrient and liver fibrosis in patients with cirrhosis

*Keywords:* Micronutrient, liver fibrosis, cirrhosis

## 5.23

### FREQUENCY OF CARDIOVASCULAR AUTONOMIC NEUROPATHY IN PATIENTS WITH DIABETES MELLITUS USING SIMPLE CLINICAL METHODS

*Syed Ahsan Ali, Abdul Jabbar*  
Section of internal Medicine, Department of Medicine, Aga Khan University, Karachi

*Introduction:* Diabetes Mellitus is a growing epidemic and cardiovascular autonomic neuropathy is one of its important complications. Despite having significant association with morbidity and mortality, the cardiovascular autonomic neuropathy mostly remains undiagnosed. Cardiovascular autonomic neuropathy can be diagnosed by clinical methods.

*Objectives:* To determine the frequency of cardiovascular autonomic neuropathy in patients with diabetes mellitus.

*Duration:* The study period was six months from October 19, 2010 to April 20, 2011.

*Subjects:* 100 patients of more than 14 years of age and having diabetes for equal to or more than 5 years were included in the study.

*Method:* All patients fulfilling inclusion and exclusion criteria were enrolled. Pulse rate at rest and during deep breathing was noted, along with blood pressure in lying and standing positions. Data was analyzed using SPSS version 17. Results were given for continuous variables as means  $\pm$  standard deviation. For categorical variables results were reported as frequencies with percentages.

*Results:* Out of 100 patients, 22 (22%) were found to have cardiovascular autonomic neuropathy. In these 22 patients, 10 (45.45%) were males and 12 (54.55%) were females.

*Conclusion:* Significant number of diabetic patients have cardiovascular autonomic neuropathy. Increasing age, BMI, duration of diabetes mellitus, and poor glycemic control were found to be important determinants for the presence of cardiovascular autonomic neuropathy in the study population.

*Keywords:* Diabetes mellitus, cardiovascular autonomic neuropathy, frequency, clinical methods.

## 5.24 DIABETES SELF MANAGEMENT: EDUCATION CAN MAKE A DIFFERENCE

*Mehrunissa Kabani, Farzana Rafiq, Sana Hassanali, Jaweed Akhter & Rozina Shamsi  
Outpatient Nursing Services & Section of  
Endocrinology, Aga Khan University, Karachi*

*Background:* According to current figures in Pakistan 7.1 million people suffer from diabetes, making it the seventh highest population of diabetic patients in the world. Education is the cornerstone of diabetes care. Lack of awareness can lead to patients suffering from diabetes complications. This project was conducted to determine the knowledge and practices of the patients and make them independent through continue education so they can participate their Diabetes management programme.

*Objective:* To evaluate the impact and effectiveness of a structured multidisciplinary group education programme for diabetic patients about their disease; psychosocial factors and lifestyle measures.

*Method:* This data was collected from endocrine clinic at the Aga Khan University hospital from year 2011- 2012. A total number of 17 patients, 8 males and 9 females, 3 with type-1 and 14 with type-2 diabetes mellitus (DM) were included in the project. Data was retrieved from pre & post questionnaire sheets which were recorded during patients visit in the "Diabetes Modular Classes". The questionnaire was designed which contained 10 questions about of Diabetes, ranging from the correct knowledge about disease, misconception regarding dietary measures, sign & symptoms of hypo & hyperglycemia & the normal values of their targets.

*Result:* The comparison of pre and post knowledge assessment of approx 17 patients, who attended all four modules, revealed that their pre knowledge score were 67.6% where as their post results after attended all sessions were 87.3%.

*Conclusion:* Comparison of pre & post quiz results shows that multidisciplinary well planned group education programme have better impact on patient's. The knowledge impart via these

classes make patients independent regarding their self management of disease process & life style modification .

*Keywords:* Diabetes, hypoglycemia, hyperglycemia, multidisciplinary structured group



# GI / Liver

## 6.1 AN UNUSUAL LIVER TUMOR OF NEUROENDOCRINE ORIGIN

*Adil Ayub, Om Parkash, Sehrish Najam, Wasim Jafri, Zubair ahmed  
Medical College, Departments of Medicine and Pathology & Microbiology, Aga Khan University, Karachi*

Carcinoid tumors originate from neuroendocrine cells and they are usually well-differentiated, low-grade malignant neoplasms. They are most common in the gastrointestinal tract (~90%) and metastases from these tumors frequently involve the liver. Primary hepatic Carcinoid tumor (PHCT) represents an extremely rare clinical entity with only a few cases (~60) reported to date. Herein, we report two cases of an occasional finding of a hepatic lesion, which led to the diagnosis of PHCT. Diagnosis of primary hepatic Carcinoid tumor (although clinically challenging due to radiological similarity to other hepatic lesions and mild symptomatology) is mainly achieved through histological confirmation and exclusion of other sites of the disease. Primary hepatic carcinoids are rarely associated with metastases and surgical resection is usually curative. Pre-op biopsy is necessary to avoid misdiagnosis.

*Keywords:* Primary hepatic carcinoid, Neuroendocrine tumor, Liver metastasis

## 6.2 DO PPIs REALLY AFFECT IN RECURRENCE OF ACUTE MI IN PATIENTS OF ACUTE CORONARY SYNDROME ?

*Adil Ayub, Om Parkash, Duraiz Murtaza, Arslan Arif, Shahab Abid, Amir Hameed, Saeed Hamid  
Department of Medicine, Aga Khan University, Karachi*

*Background:* To prevent adverse Gastro-intestinal (GI) effects in patients receiving the dual anti-platelet therapy following PCI, guidelines recommend the use of a proton pump inhibitor (PPI). Certain PPIs like Omeprazole are known to diminish the anti-platelet activity of Clopidogrel. Some Recent retrospective studies have reported a significant increase of major adverse

cardiovascular (CV) events in patients receiving both clopidogrel and PPIs. However, other retrospective analyses have not shown any interaction between the two. *Objective:* The aim of our study is to see the effect of PPI on recurrence of adverse CV events in patients with acute coronary syndrome *Methods:* Retrospective cohort study on patients with acute MI who underwent PCI on PPI from 1991-2010.

*Results:* A Total of 880 patients were seen. 140(15.9%) patients were excluded and out of the remaining 740(84.1%) patients, 453(61.2%) were prescribed PPIs {(Omeprazole; 332(73.3%), Pantoprazole; 81(17.9%), Esomeprazole; 40(8.8%)} and 287(38.8%) were discharged without PPIs. In subsequent follow-up, 95(12.8%) patients were readmitted within 2 years due to adverse CV events and out of these, 46(48.4%) had received PPIs (Omeprazole; 30, Pantoprazole; 10 Esomeprazole; 6) and remaining 49(51.6%) discharged without PPIs. Statistically there was no significant difference in recurrence of MI in PPI vs. No PPI at 6 months, 1 and 2 year (log rank=0.54;  $\chi^2=0.143$ ) similarly type of PPI also has not any significant effect ( $\chi^2=0.69$ ; log rank=0.41).

*Conclusion:* We concluded that addition of PPIs to aspirin and clopidogrel after PCI is not associated with recurrence of MI in patients who underwent PCI.

*Keywords:* Percutaneous coronary intervention, Proton pump inhibitors, Recurrence

## 6.4 UPPER GI BLEED IN DENGUE FEVER: ENDOSCOPIC FINDINGS AND PREDISPOSING FACTORS

*Adil Ayub, Om Parkash, Sehrish Najam  
Medical College and Department of Medicine,  
Aga Khan University, Karachi*

*Introduction:* Dengue infection, one of the most devastating mosquito-borne viral diseases, is now a significant problem in several tropical countries. Annually, there are an estimated 50-100 million cases of dengue fever (DF) and 250,000 to 500,000 cases of DHF in the world with the highest prevalence and outbreaks in the

Indian subcontinent. Dengue fever is often accompanied by Upper Gastrointestinal (UGI) bleeding and so far there have been a few reports concerning UGI Endoscopic findings in Dengue Fever. Hence, we aim to determine the pattern of UGI endoscopic findings in patients with Dengue fever and to assess the factors associated with UGI bleed.

*Study design:* Retrospective Cohort Study  
*Setting:* The Aga Khan University Hospital, Karachi, Pakistan

*Patients:* All Patients diagnosed with Dengue fever on Dengue serology and had Upper GI bleed and subsequent Endoscopy from 2005-2012  
*Statistical analysis:* After Data collection, appropriate editing and cross checking will be done and all the variables will be coded and analyzed in Statistical package for social sciences (SPSS) version 19.

*Keywords:* Endoscopic findings, Dengue fever, South asia

## 6.5 REFEEDING SYNDROME IN A 20-YEAR- OLD PATIENT WITH ANOREXIA NERVOSA

*Adil Ayub, Om Parkash, Shahab Abid  
Medical College and Department of Medicine, Aga  
Khan University, Karachi*

We report the case of a 20- year-old anorexic girl (BMI=12.9), who was misdiagnosed the first time and developed severe electrolyte imbalances due to lack of awareness about Refeeding syndrome. Few cases of RS have been reported in literature and protocols have been suggested for prevention and management of this syndrome, including the awareness of circumstances in which it is most likely to develop, refeeding slowly and building up micronutrient content over several days. Improved awareness and understanding of Refeeding syndrome along with a well-coordinated plan are vital in delivering safe and effective nutritional rehabilitation. We suggest a slow and gradual increase in nutrition along with nutritional counseling and psychotherapy.

*Keywords:* Refeeding syndrome, Anorexia nervosa, Electrolyte imbalance

## 6.6 CHANGE IN MORTALITY TRENDS IN THE GENERAL SURGERY SERVICE

*Akbar Jaleel Zubairi, Inam Pal  
Department of Surgery, Aga Khan University,  
Karachi*

*Introduction:* Over the last 20-25 years our institution has grown in to a specialized tertiary care facility. This change and growth has led to a prevailing perception among the surgical faculty that more sick and complex cases are now being managed and operated at our institution.

*Methods:* We conducted a retrospective audit of the trend of mortality in the general surgery service at our hospital over the last decade to reflect the complexity of cases being seen at our hospital. Mortalities of 2 separate years, a decade apart, namely 1999 and 2011 were reviewed. That is all patients who died in the general surgery service from 1st Jan to 31st Dec during the respective years were included, whether they had been operated upon or not.

*Results:* Total number of admissions in the service and total number of surgeries performed experienced an increase of 24.8% & 22.55 % respectively. Whereas there was a disproportionate increase in total mortality and operative mortality of 111 % and 60 % respectively. There was a statistically significant decrease in the total length of hospital stay from 18.6 days in 1999 to 9.3 days in 2011 and an increase in non-operative mortality from a single death in 1999 comprising 3.3% to 24 non-operative deaths in 2011 corresponding to 29%.  
*Conclusion:* In conclusion, our study showed a disproportionate increase in mortality rate when compared to the increase in number of admissions and surgeries signifying more sick and critical patients presenting to our hospital.

*Keywords:* Mortality, General Surgery, critical patients

## 6.7 MESENTERIC VEIN THROMBOSIS – IS THE CLINICAL SPECTRUM CHANGING?

*Amber Bawa, A. Rehman Alvi  
Department of Surgery, Aga Khan University,  
Karachi*

*Background:* Mesenteric Vein thrombosis is a rare presentation of bowel ischemia with a high mortality rate. Studies describing its etiology, prognosis and management are minimal both nationally and internationally. There has been an increase in diagnosis of this condition over the past few years and the factors which have led to this change needed to be studied.

*Objective:* To determine the frequency of mesenteric venous thrombosis and describe its various clinical presentations, management and outcomes To compare our results with previously available institutional data  
*Study Design:* Retrospective Comparative cohort  
*Study Period:* Comparative analysis between two studies conducted at AKUH between two time periods 1995 to 2007 and 2008-2012

*Methods:* Charts were reviewed pertaining to mesenteric ischemia. All adult patients were included with Mesenteric venous thrombosis. Arterial causes of ischemia and those with incomplete records were excluded. Analysis was done using SPSS version 19. P value 0.05 was taken significant. Student t test applied for continuous variables and fisher exact test for categorical variables.

*Results:* The mean age was 50year, with 17 male and 6 female patients (N=23). Most diagnosis was established on CT imaging preoperatively with 5 diagnosed on exploratory laparotomy. Eight patients presented within seventy two hours while 15 in > 72 hours. Amongst the group presenting within seventy two hours 5 were operated while three were managed conservatively. Two patients underwent laparotomy and 12 received non-operative treatment in group presenting >72hours. Four died in the group presenting <72 hours compared to one > 72 hours. Majority received preoperative therapeutic anticoagulation. Two patients, who underwent exploratory

laparotomy, did not receive preoperative anticoagulation and both died postoperatively. Ten patients had one or more identifiable hypercoagulable state. There were no statistical differences between thrombophilic and non-thrombophilic patients regarding duration of symptoms, indications for laparotomy and 30 day mortality rate. In comparison with the previous study in which 20 patients were diagnosed in 23 year similar volume was observed in a short span of 5 years. Both time periods were comparable in terms of mean age, sex, presenting complaints and no of patient in each group (<72 hours and >72 hours ).No statistical differences were observed in terms of duration of symptoms, indications for laparotomy and 30 days mortality rate.  
*Conclusion:* Frequency of mesenteric venous thrombosis is on a rise which could be due to improved diagnostic modalities and proper documentation. Acute presentation of <72 hours duration were found to have poor outcomes in our studies. Conservative management with anticoagulation is a viable option in patients without ischemic changes. In comparison to the previous data, clinical spectrum of the disease has not changed significantly

*Keywords:* mesenteric ischemia, anticoagulation, laparotomy

## 6.8 HEPATIC ARTERIAL VARIATION IN LOCAL POPULATION, EVALUATION BY DIGITAL SUBSTRATION ANGIOGRAPHY

*Asif Bilal, Uzma Naz, Raza Sayani, Muhammad Azam  
Department of Radiology, Aga Khan University,  
Karachi*

*Purpose:* To review the spectrum common hepatic artery anatomy on digital subtraction angiography (DSA) in our local population.  
*Materials and Methods:* Study was conducted in vascular intervention department of radiology. DSA of 50 patients who were referred for transarterial chemoembolization was reviewed. Angiographic runs of celiac axis and superior

mesenteric arteries were reviewed for hepatic artery origin and type. Any additional hepatic arteries supplying the liver was also recorded .  
*Results:* The classic hepatic arterial anatomy, with the proper hepatic artery branching into right and left branches, is seen in approximately 55% of patients. The RHA, MHA, and LHA arise from the common hepatic artery and a replaced LHA arises from the left gastric artery other variants are seen in less number and findings described in details. The findings are also compared with CT angio where available.  
*Conclusion:* Anatomical variations in local population were assessed and this knowledge helps not only in routine interventional angiographic procedures but are also helpful for surgeon in hepatic surgery.

*Keywords:* Hepatic Angiography, Digital Substraction Angiography, TACE

## 6.9

### PERCUTANEOUS RADIOLOGICAL GASTROSTOMY USING SINGLE ANCHOR GASTROPEXY - IS IT SAFE, CONVENIENT AND COST EFFECTIVE?

*Raza Sayani, Basit Salam, Asif Bilal, Tanveer Ul Haq*  
Department of Radiology, Aga Khan University, Karachi

*Purpose:* To evaluate the safety, convenience and utility of the one-anchor technique of gastropexy for percutaneous radiologic gastrostomy (PRG).

*Materials and Methods:* A total of 40 PRG patients were referred in 6 months. For gastropexy, a single anchor was used instead of routine of 3 gastropexies. Gastrostomy tube placement was performed through the same tract of the anchor with a 12–14-F gastrostomy catheter. Medical records were reviewed for technical success, immediate and delayed complications.

*Results:* Among 40 procedures, PRG with the one-anchor technique was performed successfully in 38 procedures. In one patient gastrostomy was not attempted due to anterior

position of the colon and in other nasogastric tube could not be placed due to extensive tumor growth. Age ranged from 29 to 76 years with average of 51.5 The patients were referred for radiological procedures where endoscopic gastrostomy procedures were not feasible or possible. No immediate complication was noted. Stomal infection was the most common delayed complication which occurred in 3 patients, one had peritonitis. No significant bleeding was encountered in this group. Minor complications including tube malfunction ie, dislodgment or occlusion occurred in 3 patients

*Conclusions:* PRG with the one-anchor technique is a feasible, time saving, cost effective and safe procedure. It can easily be performed in patients where endoscopic gastrostomy is not possible due to any reason.

*Keywords:* Radiology, Single gastropexy, gastrostomy

## 6.10

### HEPATIC PARENCHYMAL AND VASCULAR ANGIOEMBOLIZATION. A DEPARTMENTAL REVIEW

*Raza Sayani, Muhammad Anwar, Muhammad Azeemuddin, Tanveer Ul Haq*  
Department of Radiology, Aga Khan University, Karachi

*Objective:* To review the indications, success rate, complications, outcome of cases after angioembolization of liver parenchymal and vascular injuries performed in our department.

*Materials and Methods:* A retrospective review of cases of hepatic arterial angioembolization performed in our department during 6-year period was performed. Forty-nine vascular angiographies were performed in 45 patients (35 males and 10females, age range 12-66 years) who were referred with hemorrhagic hepatic and vascular emergencies to Aga Khan University hospital's angiography suite from July 2006 to June 2012. Data on clinical indication, technique, site and type of bleeding lesions was obtained from a retrospective review of medical records. Success rate, clinical outcome and complications of the procedure were analyzed. *Results:* Forty-nine

patients underwent angioembolization in our department during this period. Most of them had computerized axial tomographic (CT) scan followed by HA. Active extravasation and pseudoaneurysm formation was seen in most with a few showing arteriovenous malformation, tumoral blush or laceration.

*Conclusion:* Hepatic arterial angioembolization is a safe, effective and life saving therapeutic tool for managing liver parenchymal and related vascular emergencies in hemodynamically stable patients

*Keywords:* Hepatic trauma, Angiography, Embolization

### 6.11 DOES ULTRASOUND CORRELATES WELL WITH HISTOPATHOLOGY IN DIAGNOSIS OF ACUTE CHOLECYSTITIS?

*Raza Sayani, NoorJehan Zeeshan, Naureen Sohail,  
Muhammad Azeemuddin  
Department of Radiology, Aga Khan University,  
Karachi*

*Objective:* Determine the sensitivity of ultrasound in diagnosis of acute cholecystitis and its correlation with histopathology. *Methods:* Data of patients undergoing cholecystectomies were evaluated for ultrasound features and diagnosis. Features as gall bladder distention, wall thickness, presence of gall stones, pericholecystic collection and Murphy's sign were recorded. Comparison was made with histopathology results.

*Results:* 137 patient's records were evaluated. 65 were male and 77 were female. Age range from 28 to 78 years. Ultrasound studies exhibited a sensitivity of 65% for the diagnosis of acute cholecystitis compared to the histologic findings. Results of individual features are presented. Data and results are compared with literature.

*Conclusions:* Ultrasound has limited sensitivity in detecting acute cholecystitis. All cases on histopathology are not perfectly reflected on ultrasound.

*Keywords:* Ultrasound, acute cholecystitis, histopathology

### 6.12 PRIMARY BILIARY CIRRHOSIS – A CROSS-SECTIONAL STUDY

*Hamna Asim, Om Parkash  
Department of Medicine, Aga Khan University,  
Karachi*

*Introduction:* Primary Biliary Cirrhosis (PBC) is a chronic and progressive cholestatic liver disease characterized by liver cirrhosis and end stage liver failure. The number of cases diagnosed with PBC has been increasing with improvements in diagnostic technique. We aimed to investigate the burden of PBC in our region and to assess the success of different treatment modalities in our patients.

*Methods:* A questionnaire based Case Series study was conducted at AKUH, Karachi, Pakistan.

*Results:* A total of 33 patients, diagnosed to have chronic liver disease, as identified by IDC-9 coding, progressing into cirrhosis in the absence of any identifiable cause presenting from April of 1992 to July of 2012 were included. Most commonly reported symptoms were Jaundice (26.8%) right upper quadrant discomfort (21.6%), pruritus (16.5%), variceal bleed (14.4%) and fatigue (12.4%). All cases were ASMA negative. Four were AMA positive and one was ANA positive. Most commonly prescribed drugs was Ursodeoxycholic Acid (76%), Corticosteroids (33.3%) and Azathioprine (23.8%). Observed mortality was 18% with a median survival of 4.9 ( $\pm 4$ ) years. Mean MRS for this set of patients was, 7.22 (10.22-4.19). There was a significant difference between the Mayo Risk scores of those who were prescribed UDCA and those who weren't (p value < 0.05). Mean MELD score for the patients was 13.9 (51.2-0.46)

*Conclusions:* Our results highlight the importance of using UDCA in our population. Liver transplant is known to be the only definitive treatment for this disease. The high meld scores further stress the need to set up such centers.

*Keywords:* Primary biliary cirrhosis, liver, UDCA

### 6.13 TRENDS IN SURGICAL MANAGEMENT FOR ACUTE CHOLECYSTITIS - AKUH EXPERIENCE

*Hassaan Bari, Inam Pal  
Department of Surgery, Aga Khan University,  
Karachi*

*Introduction:* Acute cholecystitis is an acute inflammation of the gallbladder. Surgical management includes cholecystectomy and in high risk patients initial medical management with or without percutaneous cholecystostomy tube, followed by cholecystectomy.

*Objective:* To look for trends in surgical management of acute cholecystitis at AKUH over a period of 10 years.

*Material & Methods:* A retrospective study was performed by reviewing the medical records of patients who underwent Cholecystectomy after a preoperative diagnosis of acute cholecystitis, admitted at Department of Surgery of AKUH, from Jan 2001 to Dec 2010. Patients were classified into grade I, II and III according to Tokyo guidelines on the basis of severity. They were divided into Group –I (Patients from 2001-05) and Group-II (Patients from 2006-10). *Results:* A total of 567 patients met our inclusion criteria. The mean age was 50.4 years. Nearly 46% of patients were male. Patients were classified into Grade I (58.4%), Grade II (34%) and Grade III (7.6%). Nearly 70 % of patients had laparoscopic cholecystectomy. Our conversion rate from laparoscopic to open cholecystectomy was 19.2%. Early cholecystectomy was performed in 72% of patients. Almost 8.6% patients were treated with percutaneous cholecystostomy tube. More than 60% of patients were discharged within 48 hours of surgery.

*Conclusion:* Over the years our experience of managing A.C has changed. Early L.C is being performed more frequently. With the experience in laparoscopic techniques conversion rates (from laparoscopic to open cholecystectomy) has fallen significantly. Use of cholecystostomy tube in patients with old age and higher ASA–Levels has increased.

*Keywords:* Acute Cholecystitis, conversion rate, surgical management

### 6.14 CYTOTOXIC EFFECTS OF AFLATOXINB1 ON ENDOTHELIAL CELLS OF BRAIN AND EPITHELIAL CELLS OF LIVER

*Humaira Qureshi, Saeed Hamid, Anwar Ali  
Siddiqui, Syed Shayan Ali, Javeria Anwar,  
Huma Malik, Naveed Ahmed Khan  
Departments of Biological & Biomedical  
Sciences and Medicine, Aga Khan University,  
Karachi*

Aflatoxins are mycotoxins generally produced by the fungus *Aspergillus flavus*. *Aspergillus* is a common contaminant of food items such as corn, spices, rice, nuts, flour and betel nuts. The ingestion of *A. flavus*-contaminated food leads to our exposure to aflatoxinB1 (AFB1).

The purpose of this study was to determine the cytotoxic effects of AFB1 on primary human brain microvascular endothelial cells (HBMEC) and epithelial cells from human hepatocellular carcinoma (Huh7). Both cells were grown to confluency in 24-well plates and exposed to varying concentrations of the purified AFB1 toxin (1ng, 2.5ng, 5ng and 10ng respectively) for 24 hours. Cells were exposed to the solvent alone in controls. After 24 h exposure, supernatants were collected and the release of lactate dehydrogenase was measured as a marker for cell cytotoxicity. At 10 ng concentrations, more than 85% HBMEC death was observed, while controls showed minimal effects ( $P < 0.05$ ). Similar concentrations of AFB1 had minimal cytotoxicity (7%) on Huh7. For the first time, these findings report cytotoxic effects of AFB1 on HBMEC. AFB1 exposure may have extra-hepatic complications.

*Keywords:* AflatoxinB1, *aspergillus flavus*, HBMEC

### 6.15

#### COMPARISON OF ANTIMICROBIAL ACTIVITY OF ZINC CHLORIDE AND BISMUTH SUBSALICYLATE AGAINST CLINICAL ISOLATES OF HELICOBACTER PYLORI

*Javed Yakoob, Zaigham Abbas, MUhammad Waqas Usman, Safia Awan, Shagufia Naz, Fatima Jafri, Saeed Hamid, Wasim Jafri*  
Department of Medicine, Aga Khan University, Karachi

We determined the in vitro susceptibility of clinical isolates of *Helicobacter pylori* to ZnCl<sub>2</sub>, compared its sensitivity to bismuth subsalicylate (BSS) and clarithromycin (CLR) that are used for the treatment of *H. pylori* infection and its activity at different gastric pH. One hundred sixteen clinical isolates of *H. pylori* strains were chosen. Agar gel dilution method was used to determine the susceptibility of *H. pylori* isolates to ZnCl<sub>2</sub> 40 µg/ml, BSS 20 µg/ml, and CLR 2 µg/ml. Suspension of 10<sup>9</sup> bacteria/µl was streaked on the blood agar plate. The control consisted of *H. pylori* incubated without ZnCl<sub>2</sub>, BSS, and CLR. One hundred ten *H. pylori* strains (95%) were susceptible to ZnCl<sub>2</sub> 40 µg/ml compared to 114 (98%) to BSS 20 µg/ml ( $p=0.002$ ) and 92 (79%) to CLR 2 µg/ml ( $p=0.602$ ). *H. pylori* isolates from patients with nonulcer dyspepsia and from peptic ulcer were equally susceptible to ZnCl<sub>2</sub> 40 µg/ml (90/96 vs. 26/26,  $p=0.208$ ). *H. pylori* associated with chronic gastritis and chronic active gastritis were equally susceptible to ZnCl<sub>2</sub>. *H. pylori* demonstrated susceptibility to ZnCl<sub>2</sub> in vitro. *H. pylori* susceptibility to ZnCl<sub>2</sub> 40 µg/ml was greater than BSS and comparable to CLR. ZnCl<sub>2</sub> may be used in the treatment of *H. pylori* infection.

**Keywords:** *Helicobacter pylori*, Zinc chloride, susceptibility

### 6.16

#### COMPARISON OF THE VIRULENCE MARKERS OF HELICOBACTER PYLORI AND THEIR ASSOCIATED DISEASES IN PATIENTS FROM PAKISTAN AND AFGHANISTAN.

*Javed Yakoob, Zaigham Abbas, Wasim Jafri, Muhammad Waqas Usman, Safia Awan*  
Department of Medicine, Aga Khan University, Karachi

**Background/Aim:** *Helicobacter pylori* is a Gram-negative bacteria, which is associated with development of gastroduodenal diseases. The prevalence of *H. pylori* and the virulence markers cytotoxin-associated gene A and E (cagA, cagE) and vacuolating-associated cytotoxin gene (vacA) alleles varies in different parts of the world. *H. pylori* virulence markers cagA, cagE, and vacA alleles in local and Afghan nationals with *H. pylori*-associated gastroduodenal diseases were studied.

**Methods:** Two hundred and ten patients with upper gastrointestinal symptoms and positive for *H. pylori* by the urease test and histology were included. One hundred and nineteen were local nationals and 91 were Afghans. The cagA, cagE, and vacA allelic status was determined by polymerase chain reaction.

**Results:** The nonulcer dyspepsia (NUD) was common in the Afghan patients ( $P = 0.025$ ). In Afghan *H. pylori* strains, cagA was positive in 14 (82%) with gastric carcinoma (GC) compared with 29 (45%) with NUD ( $P = 0.006$ ), whereas cagE was positive in 11 (65%) with GC and 4 (67%) with duodenal ulcer (DU) compared with 12 (18%) with NUD ( $P < 0.001$  and  $0.021$ , respectively). The vacA s1a/b1 was positive in 10 (59%) of GC compared with 20 (31%) in NUD ( $P = 0.033$ ). In Pakistani strains, cagE was positive in 12 (60%) with GC, 7 (58%) with GU, 12 (60%) with DU compared with 11 (16%) with NUD ( $P < 0.001$ ,  $0.004$ , and  $< 0.001$ , respectively). In Pakistani strains, cagA/s1a/m1 was 39 (33%) compared with Afghans in 17 (19%) ( $P = 0.022$ ). Moderate to severe mucosal inflammation was present in 51 (43%) Pakistani patients compared with 26 (28%) ( $P = 0.033$ ) in Afghans. It was also associated with grade 1



lymphoid aggregate development in Pakistani patients 67 (56%) compared with 36 (40%) ( $P = 0.016$ ) in Afghans.

*Conclusion:* Distribution of *H. pylori* virulence marker *cagE* with DU was similar in Afghan and Pakistan *H. pylori* strains. Chronic active inflammation was significantly associated with Pakistani *H. pylori* strains.

*Keywords:* Helicobacter pylori, CagA, VacA

### 6.17 AN EXPERIMENTAL STUDY EVALUATING THE USE OF BITTER APPLE IN CONSTIPATION

*Malik Hassan Mehmood, Zehra Nizar Dhanani  
Department of Biological & Biomedical Sciences,  
Aga Khan University, Karachi*

*Background and Objective of Study:* Citrullus colocynthis, commonly known as “bitter apple” is native to Mediterranean Basin and Asia. This is a popular plant and has been used indigenously to treat hypoactive gut disorders such as constipation. This study is planned to assess the effectiveness of fruit extract of *C. colocynthis* in constipation and to explore the possible mode of action of its laxative property using in vivo and in vitro assays.

*Method:* The in-vivo studies were conducted in mice, while isolated ileum preparations of mice and rat were used for the in-vitro experiments. The gut stimulant responses of the test material in isolated tissues were measured using isotonic transducers coupled with PowerLab data acquisition system.

*Results:* The crude extract of dried fruit of *C. colocynthis* (Cc.Cr) caused increased production of wet feces and propelled charcoal meal in mice similar to the effect of carbachol, a cholinergic agonist and known gut stimulant. When tested on isolated ileum preparations of mice or rats, it showed gut stimulant property in terms of exhibiting contractions on the basal status of ileal strips. When the contractile responses of Cc.Cr were restudied in the presence of atropine (0.1  $\mu\text{M}$ ), these were found partially sensitive in rats at higher doses.

*Conclusion:* These results indicate that *C. colocynthis* fruit extract possesses prokinetic, laxative and gut stimulant properties mediated

partially through the activation of muscarinic receptors, thus providing an evidence to its medicinal use in constipation.

*Keywords:* Citrullus colocynthis, Cholinergic, Prokinetic, Laxative

### 6.18 PHARMACOLOGICAL BASIS FOR THE MEDICINAL USE OF BLACK CARDAMOM IN GUT MOTILITY DISORDERS

*Malik Hassan Mehmood, Amna Naveed  
Department of Biological & Biomedical Sciences  
and Medical College, Aga Khan University,  
Karachi*

*Background and Objective of Study:* Amomum subulatum commonly known as “Black cardamom or Greater cardamom, belongs to botanical family Zingiberaceae. Its pods are used in spices as well as for flavoring agents in various dishes and foods. This is a popular spice used to treat gastrointestinal disorders like diarrhea. This study is planned to assess the effectiveness of Black cardamom in diarrhea using in vivo and in vitro experiments.

*Method:* The in-vivo studies were conducted in mice, while isolated ileum preparations of rats were used for the in-vitro experiments. The responses of the test material in isolated tissues were measured using isotonic transducers coupled with PowerLab data acquisition system.

*Results:* Administration of the crude extract of *A. subulatum* (As.Cr) to mice showed protection against castor oil-induced diarrhea, similar to the effect of loperamide, a known antidiarrheal agent. When tested on isolated ileum preparations of rats, it showed gut inhibitory properties in terms of causing equal relaxation of carbachol and high  $\text{K}^+$  (80 mM)-induced contractions, indicating the presence of gut inhibitory constituents in As.Cr possibly interfering with  $\text{Ca}^{2+}$  channels.

*Conclusion:* The results indicate that *A. subulatum* fruit extract possesses antidiarrheal and spasmolytic activities mediated possibly through blockade of  $\text{Ca}^{2+}$  channels, thus providing and evidence to its medicinal use in diarrhea.

*Keywords:* Amomum subulatum,  $\text{Ca}^{2+}$  antagonist, antidiarrheal

### 6.19

#### DOES ELEVATED SERUM ALPHA FETO-PROTEIN CORRELATED WELL WITH TUMOR SIZE AND MULTICENTRICITY IN HEPATOCELLULAR CARCINOMA

Mohammad Azam, Shazia Aamir, Raza Sayani, Asif Bilal, Uzma Naz  
Department of Radiology, Aga Khan University, Karachi

*Objective:* To evaluate if serum Alpha feto-protein correlates with tumor size and multicentricity in hepatocellular carcinoma. *Methods:* A cross-sectional review of data was performed at Aga Khan University Hospital Department of Radiology, Karachi, from January 2009 to June 2010. All cases of CT proven HCC were included in the study. Data such as age, gender, total bilirubin, serum Albumin, alpha fetoprotein were reviewed. All patients were divided into 3 groups on the basis of alpha fetoprotein level patients. Group I with normal AFP (< or = 20IU/ml), Group II with moderately elevated AFP (20-399IU/ml), and Group III with markedly elevated AFP (> or =400 iu/ml). Correlation of serum AFP levels with tumor size which were also classified in 3 group according to size; group A <3 cm, group B 3-5 cm and group C >5 cm.

*Results:* Review of the clinical data of 50 patients with CT proven HCC was included. Male 42 (84%) and female were 8 (16%) with mean age of 52 +/- 11 ranging from 31 to 72 years was done. Of these there were 26 (52%), 13 (26%), 11(22%) cases in group 1, 2, 3 respectively. While in tumor size groups, 12 (20%) were in group A, 12 (24%) in group B and 26 (52%) in group C. A direct correlation of serum AFP level with tumor size is not appreciated. A number of patients with lesions appreciated on CT didn't show raised alpha fetoprotein however in cases where alpha feto protein is raised almost all cases had either large lesion or extensive disease

*Conclusion:* Our study suggests that raised alpha feto protein has high correlation with either large lesion or extensive disease however low or mildly elevated alpha fetoprotein doesn't correlate well or excludes HCC

*Keywords:* Hepatocellular carcinoma, Alpha fetoprotein, Cirrhosis

### 6.20

#### POST LIVER BIOPSY COMPLICATIONS AND FACTORS ASSOCIATED WITH THESE COMPLICATIONS AT A TERTIARY CARE HOSPITAL

Muhammad Akram, Syed Hasnain Ali Shah  
Department of Medicine, Aga Khan University, Karachi

Post Liver Biopsy complications and factors associated with these complications at a tertiary care hospital Muhammad Akram, Syed Hasnain Ali Shah Section of Gastroenterology & Hepatology, Department of Medicine, Aga Khan Hospital, Karachi

*Introduction:* Hepatocellular injury leads to fibrosis and nodular regeneration throughout the liver and ultimately cirrhosis and hepatocellular carcinoma. Liver is a common site for metastasis from colon, breast and lung. Blood tests and ultrasound are commonly used to diagnose liver diseases. However liver biopsy is used to diagnose, stage the disease, assess the histology and response to a specific treatment. Liver biopsy is an invasive procedure. It can lead to certain complications and rarely death of the patient. Data regarding the complications and associated factors after liver biopsy in our population is limited.

*Objectives:* To determine the complications of liver biopsy and factors associated with these complications at a tertiary care hospital. *Methods:* Cross sectional study. The study was conducted from January 10, 2011 to December 20, 2011. Patients admitted in wards or endoscopy suite and visiting the GI clinics in Aga Khan Hospital were enrolled after fulfilling the inclusion criteria.

*Results:* A total of 100 subjects were included in this study. Mean age was 46±14 years. 61 (61 %) were male out of 100 patients. Indications for liver biopsy were liver mass/metastasis in 37 (37%), deranged liver function tests in 27 (27%), chronic hepatitis C in 16 (16%), chronic hepatitis B in 8 (8%), both HBV+HDV in 4 (4%), post liver transplant in 2 (2%), miscellaneous in 6 (6%). Pain was seen in 66(66%) patients. Out of these 66 patients, 19(19%) had mild pain, 5(5%) had moderate pain, 42(42%) had severe pain. Bleeding was seen in 33(33%), 27(27%) patients had insignificant bleeding while 6(6%) had significant bleeding. 11(11%) patients developed hypotension

after liver biopsy. 6(6%) developed fever after the liver biopsy. 2(2%) patients died after liver biopsy. 1 patient developed hydropneumothorax. 47(47%) patients were discharged on the same day of liver biopsy after an observation period of 6 hours. Factor associated with above complications were age  $\geq 50$  years, noted in 45(45%) patients and liver mass/metastasis in 27(27%) patients. In 21(21%) patients, male gender was the factor. In 5(5%) patients, serum creatinine  $\geq 1.5$  was the factor. Both patients who died had serum creatinine more than 1.5. More than 3 needle passes was the factor seen in 5(5%) of the cases. In 43(43%) patients, there was a single factor, 15(15%) had 2 and 9(9%) had  $\geq 3$  factors.

*Conclusion:* We concluded that pain and bleeding are the most frequent complications after liver biopsy. If liver biopsy is done under ultrasound guidance, chances of visceral perforation are minimized. Age  $\geq 50$ yr, male gender, liver malignancy,  $> 3$  needle passes and renal insufficiency are the most common factors associated with complications. Mortality is high in patients with liver mass and renal insufficiency after liver biopsy. **Keywords:** Liver biopsy, cirrhosis, complications, factors

*Keywords:* Liver biopsy, cirrhosis, complications, factors

## 6.21 DESIGNING NOVEL DRUG DERIVATIVES FOR THE TREATMENT OF HCV INFECTION

*Muhammad Faraz Anwar, Sadaf Naeem,  
Shamshad Zarina, Syed H. Ali  
Department of Biological & Biomedical  
Sciences, University of Karachi, Karachi and  
Department of Biological & Biomedical  
Sciences, Aga Khan University, Karachi*

Hepatitis C Virus (HCV) infection is a serious health concern worldwide. At present, combined administration of pegylated-interferon and ribavirin is the treatment of choice, but this therapy involves serious adverse effects and is economically unaffordable. Due to their ability to bind and inhibit viral helicases, fluoroquinolones are known to have antiviral

activity. Anti-HCV activity of fluoroquinolones has been shown to involve inhibition of the helicase activity of HCV NS3 protein. Based on this observation, using Accelrys Discovery Studio, we designed 50 fluoroquinolone derivatives. Each of these derivatives were docked on HCV NS3 protein in a computer-simulated environment. It was found that certain fluoroquinolone derivatives interacted with NS3 more strongly than the original drugs, indicating that these derivatives may be more potent inhibitors of NS3 activity. In the next phase of this study, promising drug derivatives will be chemically synthesized and tested using in vitro enzyme assays and in vivo cell culture models. This project will lead to the development of inexpensive anti-HCV drugs with hopefully less adverse effects.

*Keywords:* Drug Designing, HCV, Bioinformatics

## 6.22 APPENDICITIS; A CONTINUING DIAGNOSTIC CHALLENGE!

*Roger Christopher Gill, Inam Pal  
Department of Surgery, Aga Khan University,  
Karachi*

*Objective:* To review our experience in diagnosing appendicitis over an eight year period with increasing usage of Computerized Tomography Scan

*Study Design & Setting:* Retrospective Comparative Cohort study of patients diagnosed as acute appendicitis from Aga Khan University discharge data base during the period January 01 2004 to May 31 2011.

*Methods:* 1197 patients diagnosed with appendicitis who underwent appendectomy between January 01 2004 to May 31 2011 were included in this study. Histopathology reports were taken as a gold standard. Year wise Negative appendectomy rates were compared to assess the impact CT scan had created in improving diagnosis after its inception. Sub group analysis of patients who underwent CT scan (n=557) and those who were clinically

diagnosed (n=404) was done comparing Negative appendectomy rates in both males and females. Analysis was done using Microsoft Excel version 2010 and SPSS version 19.

*Results:* Our data base yielded 1197 cases who underwent appendectomy after being diagnosed either clinically or with the help of CT Scan. These included 845 males and 352 females with age ranging from 12 to 80 with a mean of 30 years. Average length of hospital stay for these patients was 2 days. Negative Appendectomy Rates were calculated for each subsequent year starting from January 2004 and ending at May 2011. Negative appendectomy rate at the beginning of 2004 was around 5.2% which showed a rising trend over the following years with NAR of around 12% in 2011. To try and understand this unexpected findings sub group analysis of patients diagnosed with FACT (n=557) and those diagnosed on clinical examination (404) was performed. The clinical group showed mean Negative appendectomy rate of 5.45% and CT group revealed a mean NAR of 8% which was contrary to what we had expected. To evaluate if there was a difference in NAR based on patient gender we further analyzed the sub groups. Of the 557 people in CT group 394 males had NAR of 5.6% and 163 females had NAR of 14%. In the Clinical group comprising 404 patients, 378 males had a NAR of 5.3% and 26 females a NAR of 8%. Females in the CT group had almost twice the Negative appendectomy rates as compared to clinical group.

*Conclusion:* In our setup CT scan has not shown to be as rewarding as reported in international literature. Females still tend to have higher negative appendectomy rates even after the introduction of CT scan. Our clinical diagnostic rates for acute appendicitis are much better than those coated in literature in general.

*Keywords:* Appendicitis, appendectomy, negative appendectomy rate

## 6.23 VIRTUAL SCREENING OF NATURAL COMPOUNDS THAT CAN INHIBIT HCV

*Saima Soomro, Sadaf Naeem, Muhammad Faraz Anwar, Syed Hamid Ali*  
*Department of Biological & Biomedical Sciences, NED University of Engineering and Technology, Karachi, University of Karachi, Karachi and Aga Khan University, Karachi*

Hepatitis C virus (HCV) is highly prevalent in Pakistan, and its infection can lead to chronic liver disease and hepatocellular carcinoma. The currently available treatment for treating HCV infection is not effective in all patients, has adverse side effects, and is not easily affordable. The aim of this study was to explore for natural compounds that can inhibit the replication of Hepatitis C virus (HCV). Fluoroquinolones have been shown to inhibit the replication of HCV genome by targeting its helicase protein NS3. Using 40 fluoroquinolones as reference molecules, we screened a data set of 4000 natural products that bore structural similarities with fluoroquinolones. From this data set, Random Forest classifier was used to predict active natural compounds that may have an inhibitory effect against HCV NS3 activity. This Random Forest classifier builds a set of decision trees by using molecular descriptors of the two data sets i.e., the training and testing set. Using this approach, out of 4000 test molecules, 147 molecules were predicted to be active against HCV NS3 helicase. These predicted active compounds can be analyzed further using in silico and in vitro experimental models to discover a potent drug against HCV. The above-described approach is useful in discovering new, more potent, and affordable drugs for treating HCV infection.

*Keywords:* Drug designing, HCV, cheminformatics

## 6.24 CONSERVATIVE MANAGEMENT OF ABDOMINAL GUNSHOT INJURY WITH PERITONEAL BREACH; WISDOM OR ABSURDITY

*Salma Khan, Tufail Bawa, Aryn Pardhan  
Department of Surgery, Memon Medical  
Institute, Karachi*

*Introduction:* Gunshot injuries to the abdomen have been traditionally managed by exploratory laparotomy. There is recent literature pointing towards selective non-operative management of isolated anterior or posterior abdominal gunshot injury but to the best of our knowledge no report is available about conservative treatment of trans-abdominal gunshot injury with peritoneal breach

*Methods and Result:* The authors report a case of 28 years old male who sustained trans-abdominal gunshot injury; having entered the anterior abdominal wall and exiting adjacent to the T12 vertebra posteriorly with a tangential trajectory. On presentation he was hemodynamically stable with no peritoneal signs. Based on trajectory, CT scan abdomen with intravenous (IV) and rectal contrast was done, which revealed no extravasation of rectal contrast but showed free air specks behind descending colon. Delayed renal images of the left ureter were also normal. Based on clinical findings, the patient was managed non-operatively with nothing per oral (NPO), IV antibiotics and frequent abdominal assessments. He made uneventful recovery without necessitating laparotomy.

*Conclusion:* Non-operative management of trans abdominal gunshot wound is a safe alternative to mandatory laparotomy in select group of patients • Non-operative management has a role in resource stricken environment, where geo-political situations result in significant patients having GSW • Clinical abdominal examination and CT scan are useful tools in management • Laparotomy still is the standard of care and non-operative management should be discontinued if the patients develop peritoneal signs and hemodynamic instability

*Keywords:* Gunshot, conservative treatment, laparotomy

## 6.25 LEVEL OF AWARENESS ABOUT HEPATITIS C AND PATTERNS OF HEALTH SEEKING BEHAVIOR AMONG HEPATITIS C PATIENTS IN KARACHI, PAKISTAN

*Shahina Pirani, Tazeen Saeed Ali, Ms. Saleema  
Allana, Faisal Ismail  
School of Nursing & Midwifery and Department  
of Medicine, Aga Khan University, Karachi*

*Objective:* The study aimed to assess the hepatitis C patients' level of awareness about hepatitis C, patterns of health seeking behavior, level of satisfaction with health care providers, and also the association between patients' awareness about hepatitis C and their primary contact with health care providers.

*Methodology:* A descriptive, cross-sectional study was conducted among 250 hepatitis C patients, at the AKUH and the Civil Hospital Karachi, Pakistan, between March and May 2013.

*Results:* This study found that only half of the study participants (52%) had correct knowledge about hepatitis C; in fact, most of the study participants had incorrect knowledge about transmission of HCV infection, such as sharing towel/clothes (76.8%), coughing (75.2%), tattooing (66.4%), kissing (66%), and sharing eating utensils (53.6%). Moreover, 90.8% participants had misconceptions that preventive vaccine for hepatitis C infection is available. This study also found that 61% participants had exposure to needles and 22% participants perceived the use of medical instruments as their cause of hepatitis C. The participants also reported food and water as their cause of hepatitis C. The patterns of health seeking behavior showed that a majority of the study participants approached a doctor, followed by spiritual healers (dum) and a few participants approached traditional healers (hakim) and homeopaths. Those participants who visited traditional healers, homeopaths, or spiritual healers were not satisfied with these health care providers. The study findings showed that there was no association between participants' awareness about hepatitis C and their primary contact with a health care provider.

**Conclusion:** This study concluded that participants had misconceptions regarding HCV transmission, risk factors, and preventive vaccine for hepatitis C. The patterns of health seeking behavior are strongly related to the patients' cultural practices and beliefs, which affect their choice of health care providers. Finally, this study has provided a basis for planning interventional studies aimed at improving patients' level of awareness about hepatitis C and their health seeking behaviors.

**Keywords:** Awareness about hepatitis C, Patterns of health seeking behavior, hepatitis C patients

#### **6.26** DOES MRCP FINDINGS CORRELATE WELL WITH ERCP.

*Uzma Naz, Asif Bilal, Muhammad Azam, Raza Sayani*  
*Department of Radiology, Aga Khan University, Karachi*

**Objectives:** To evaluate if non invasive magnetic resonance cholangiopancreatography (MRCP) findings correlated well with endoscopic retrograde cholangiopancreatography (ERCP).  
**Methods:** A total of 47 patients were enrolled. These patients had undergone both MRCP as well as ERCP in short interval of time. The MRCP procedure was performed before the ERCP in most cases. Findings were recorded and data reviewed  
**Results:** 47 patients were enrolled. 17 were male and 30 females. Ages range from 83-14 years . Most of these patients who had undergone both procedures had been diagnosed with either obstruction, stone or needed therapeutic intervention thus being a significant limiting factor in our study. The findings correlated well in terms of diagnosis and data is presented in graphical form.

**Conclusion:** MRCP is used with increasing frequency as a non-invasive procedure for diagnosis of biliary abnormalities. Findings correlate well in diagnosis however with the limitation of therapeutic options.

**Keywords:** ERCP, MRCP, biliary abnormalities

#### **6.27** CHOLEDOCHAL CYST, AN EXPERIENCE AT AKUH

*Zafar Nazir, Ahmad Vaqas Faruque*  
*Department of Surgery, Aga Khan University, Karachi*

**Introduction:** Choledochal cyst is a congenital anomaly of billiary tree. It is reported in all the age groups. The objective of this study is to review the presentation, Pathology and management of patients with Choledochal cyst in different age groups.

**Material & Methods:** We have conducted an audit to review the patients diagnosed as Choledochal cyst. The duration of study was from 1998-2013. Patients were divided into groups, Group I: Infants < one year & Group II: Children > 1-14 years

**Results:** Most of our children's were female. Jaundice and abdominal mass were more prevalent in group 1, whereas abdominal pain nausea, vomiting and pancreatitis are more prevalent in group 2. In majority of children Type 1 cyst was the intraoperative findings. Cyst fluid amylase levels were raised in group 2 patients showing communication with pancreatic duct. Liver pathology in Group 1 children showing ranges from portal fibrosis to cirrhosis where as in group 2 almost all cases were showing signs of inflammation. Hepatico-jejunostomy (Roux-en-y) in most of case; however in our early experience there were few cases in which we did hepaticoduodenostomy based on surgeon preference. Bile leak and Cholangitis were seen more in group 1, while pancreatitis was common observation in group 2  
**Conclusion:** This disease has multifactorial etiology in different age group. Our data support the two most common theories in terms of its origin in different age groups, i.e. defective recanalization or pancreatic biliary reflux.

**Keywords:** Choledochal cyst, hepatico jejunostomy, recanalization

## 6.28 EFFICACY AND LONG TERM REBLEEDING RATES OF SINGLE SESSION ENDOSCOPIC HISTOACRYLIC INJECTION IN PATIENTS WITH ACTIVE GASTRIC VARICEAL BLEEDING

*Ali Khawaja<sup>1</sup>, Salima Ahmed Bhimani<sup>1</sup>,  
Ambreen Sonawalla<sup>1</sup>, Sana Farhad Somani<sup>1</sup>,  
Shahab Abid<sup>2</sup> Medical College<sup>1</sup> and, Section of  
Gastroenterology<sup>2</sup>, Department of Medicine,  
Aga Khan University, Karachi*

*Introduction:* Gastric variceal bleeding is usually more severe and difficult to control and hence, it is imperative to identify the optimal therapy for its management. We aimed to evaluate the efficacy and long term outcome of patients treated with single session of Histoacryl sclerotherapy for active gastric variceal bleeding.

*Methods:* A systematic review of medical records was conducted to identify patients treated with histoacryl injection for gastric varices from January 1998 to June 2011. Patients were graded into isolated gastric varices (IGV1), gastroesophageal varices (GOV1&2). The outcome parameters such as initial hemostasis, treatment failure (rebleeding, need to change therapy or death within five days), complications and rebleeding during follow-up were recorded.

*Results:* Ninety-seven patients were included, mean age was  $51.0 \pm 12.5$  years, 62% were male. Hepatitis C cirrhosis was present in 63 (65%) patients, NonB-NonC cirrhosis in 14 (15%), Hepatitis B in 11 (12%) and alcoholic liver disease in 5 (5%) patients. Child Pugh grade B was present in 45 (46%) and grade C in 29 (30%) patients at presentation. A total of 40 (41%) patients were IGV1, 35 (36%) were GOV2, 20 (21%) patients were GOV1 and 2 (2%) patients were IGV2. Hemostasis was achieved in 87 (90%) patients. Treatment failure was seen in 14 (15%) patients including seven patients who died during the same admission. Rebleeding was seen in 24 (24/90 = 27%) patients in one year follow-up, 12 (50%) were successfully managed with repeated histoacryl injection. Mortality rate at 6 weeks (7/90), 6

months (12/90) and 1 year (19/90) was 8%, 13% and 21%, respectively.

*Conclusion:* Single session of Histoacryl sclerotherapy is effective in patients with active gastric variceal bleeding. Rebleeding was observed in one fourth of patients and in half of them it was controlled by repeated histoacryl sclerotherapy.

## 6.29 NONCIRRHOTIC PORTAL HYPERTENSION: A 19 YEAR EXPERIENCE FROM A TERTIARY CARE HOSPITAL IN PAKISTAN

*Amna Subhan Butt<sup>1</sup>, Nazish Butt<sup>1</sup>, Wasim Jafri<sup>1</sup>,  
Hasnain Ali Shah<sup>1</sup>, Saeed Hamid<sup>1</sup>  
<sup>1</sup>Section of Gastroenterology, Department of  
Medicine, Aga Khan University, Karachi*

*Aim:* To evaluate the clinical manifestations, pathological features, aetiological factors and the outcome of patients with NCPH presented at the Aga Khan University hospital, Karachi during last 19 years.

*Settings & Design:* This was a retrospective study, conducted at Aga Khan University Hospital, Karachi.

*Methods and Material:* Patients admitted with NCPH were identified from our medical records and their charts were reviewed. Information was collected regarding clinical presentation, physical findings, laboratory tests, radiological and histological findings, and for the outcome of treatment.

*Results:* Out of 3153 patients with PHT, a total of 24 patients were found to have NCPH. Causes of NCPH were extrahepatic portal vein obstruction (EHPVO) in 71% and congenital hepatic fibrosis (CHF) in 29% of patients. Twenty two (92%) patients presented with splenomegaly, 21 (87.5%) with anemia, 18(75%) with abdominal pain and upper GI bleeding in 13 (54.2%) of patients. Portal vein thrombosis was present in 13 patients with EHPVO. Portal vein cavernous transformation was seen in 16 patients with EHPVO and in one patient with CHF. A total of 16 (66.7%) patients had successful eradication of esophago-gastric

varices after serial sessions of esophageal variceal band ligation and sclerotherapy. Surgery was required in seven cases of one patient had orthotopic liver transplantation.

*Conclusions:* EHPVO was the major cause of NCPH in our group of patients. Majority of patients had disease characterized by splenomegaly with anemia, bleeding, preserved liver function and benign course. Esophageal variceal band ligation was found as a reasonable option for eradication of varices.

*Keywords:* Noncirrhotic portal hypertension, Extrahepatic portal vein obstruction, Congenital hepatic fibrosis.

### 6.30

#### USEFULNESS OF ADJUSTED BLOOD REQUIREMENT INDEX (ABRI) IN DEFINING FAILURE TO CONTROL BLEED IN PATIENTS WITH ACTIVE ESOPHAGEAL VARICEAL BLEEDING

*Shahab Abid, Shalina Darsi, Safia Awan, Saeed Hamid, Hasnain Alishah, Wasim Jafri*  
*Section of Gastroenterology, Department of Medicine, Aga Khan University, Karachi*

*Background:* Various parameters are in use to diagnose failure to control variceal bleeding which include; a fresh blood in nasogastric aspiration >100ml after endoscopic procedure, development of hypovolaemic shock or a drop of hemoglobin of 3gm in any 24 hours after intervention or death within five days. ABRI is a blood requirement index that is calculated by dividing number of blood transfused with difference of hematocrit + 0.01. We aimed to assess the value of ABRI in defining failure to control bleeding which is not yet established.

*Methods:* We prospectively analyzed the data of our patients with hematemesis due to variceal bleeding. Two cut off values (>0.5 and >0.75) of ABRI were compared with other parameters that define failure to control variceal bleeding. Patients were divided into Group1; controlled bleeding, group 2; uncontrolled bleeding

*Results:* A total of 137 patients (99male; 37females), mean age was  $52.32 \pm 11.55$  years;

(range: 20-80 years) were included in the analysis. Failure to control bleeding occur in 57(42%) of patients. No difference was observed in ABRI cutoff values of 0.5 and 0.75 between the groups. No relationship was found between ABRI cut off values and baseline hemoglobin, heart rate and blood pressure. Failure to control bleed was associated with baseline heart rate >100; p value: 0.03, with low baseline hemoglobin (p value<0.001).

*Conclusion:* No difference of ABRI was found in patients with variceal bleeding in which bleeding was controlled compared to those where controlled was not achieved.

*Keywords:* Adjusted Blood Requirement Index, esophageal variceal bleeding

### 6.31

#### FREQUENCY OF CEFTRIAXONE RESISTANCE IN PATIENTS WITH E.COLI INDUCED URINARY TRACT INFECTION

*Jamshed Ali*  
*Section of internal Medicine, Department of Medicine, Aga Khan University, Karachi*

*Background:* A urinary tract infection (UTI) is a bacterial infection that affects any part of the urinary tract. When it affects the lower urinary tract, it is known as cystitis (a bladder infection) and when it affects the upper urinary tract it is known as pyelonephritis (a kidney infection).The most common organism implicated in UTIs (80–85%) is E. coli<sup>1</sup>.Antimicrobial resistance among uropathogens causing UTIs, is increasing. Frequency of ceftriaxone resistance in E-coli induced UTI ranges from 8.3%-11.8<sup>124</sup>.This study will provide the magnitude of ceftriaxone resistance in UTI patients, based on this data decision could be made for its usage in UTI.

*Method:* This is a Cross-sectional study conducted at General Medical wards, Department of Medicine, Aga Khan University Hospital, Karachi. We included patients 100 patients with the diagnosis of E.Coli induced UTI in adults. The urine sample was collected from patients after informed consent and sent to AKUH lab for culture. The primary outcome measure was the



frequency of Ceftriaxone resistance to E.Coli induced UTI.

*Results:* Frequency of ceftriaxone resistance in e-coli induced urinary tract infection was 18% and sensitivity was 82%. Rate of resistance was high in above 65 years of age. Ceftriaxone resistance was 18.2% in male and 17.9% in female.

*Conclusion:* Ceftriaxone is affected for the treatment of complicated UTIs in adults, was generally well tolerated. Overall there is an increasing resistance to ceftriaxone in E-coli induced UTI. We therefore, recommend future studies with larger sample sizes, stronger forms of study designs and multiple settings to reach conclusive evidence.

*Keywords:* Urinary tract infection, E-coli, Ceftriaxone resistance.

### 6.32

#### PHYSICAL ACTIVITY AND VITAMIN E IN PATIENTS WITH NON ALCOHOLIC FATTY LIVER DISEASE; AN OPEN LABEL RANDOMIZED PARALLEL ARM TRIAL

*Om Parkash, Saeed Hameed*

*Section of Gastroenterology, Department of Medicine Aga Khan University, Karachi*

*Study rationale:* Since there is no effective proven therapy for patients with NAFLD or NASH which had got dreaded complications like liver cirrhosis and its subsequent complications of ascites, PSE or HCC etc. Therefore we need to see the effect of physical activity as well as vitamin E on patients with NAFLD/NASH especially in Pakistan where people are culturally and religiously different from rest of world. Because of the changing prevalence of NAFLD in this region, we need to see the effective therapy for such patients. This changing trend of liver disease is reversing in neighboring countries of Pakistan, reaching to an epidemic proportion of 30% (South Asia and Asia pacific region). Interestingly in this part of world especially Pakistan and India, where unhealthy life style and poor health awareness is very common and these may be aggravating this problem further. So it is important to determine the frequency of NAFLD in this part of country and its associated risk factors such as lack of physical activity. We need to see the effect of physical activity in

Pakistan in urban population where sedentary life style is increasing.

#### *Primary Objective*

To determine the effect of Physical activity +Vitamin E or Physical activity alone or Vitamin E alone on transaminases in NAFLD at 3 months

To determine the effect of Physical activity +Vitamin E or Physical activity alone or Vitamin E alone on NAFLD (US abdomen) at 3 months

To determine the long term ( at 12 months) effect of Physical activity +Vitamin E or Physical activity alone or Vitamin E alone on NAFLD

#### *Secondary objective:*

To determine the effect of physical activity on BMI

#### *Research/Study Question*

What is the effect of Physical activity on transaminases in NAFLD at 3 months

What is the effect of Physical activity on fatty liver (On US abdomen) in NAFLD

What is effect of vitamin E on NAFLD

What is the long term (at 12 months) effect of physical activity and Vitamin E on NAFLD

### 6.33

#### INTRA EPITHELIAL LYMPHOCYTE AND DUODENAL MASTOCYTOSIS IN DUODENAL MUCOSA IN PATIENTS WITH FUNCTIONAL DYSPEPSIA

*Shahab Abid, Mohammad Sadiq and Mohammad Akram, Zubair Ahmed*

*Section of Gastroenterology, Department of Medicine and Department of Pathology, Aga Khan University*

*Background:* Each year, about 20% to 30% people present with dyspeptic symptom. Functional dyspepsia (FD) is considered to be multifactorial, though the exact cause is still not well. Studies show increase in the intraepithelial lymphocytes and mucosal mast cell count in functional gastrointestinal disorders (FGID) including functional dyspepsia. Moreover immune- neuronal system has not been studied extensively in functional dyspepsia. Information about the association between the immune system ( eosinophils, IELs, mast cells) and neuronal system ( neuroendocrine, interstitial cells of cajal) in FD can be useful with regards to possible intervention in the form of immune modulators, mast cell

stabilizers and immune suppressants for the symptomatic control of these patients.

**Aims:** To find out the IEL quantification its subtypes and association IEL count with H.pylori infection. This immune- neuronal system has not been studied extensively in functional dyspepsia. Information about the association between the immune system (esinophils, IELs, mast cells) and neuronal system (nueroendocrine, interstitial cells of cajal) in FD can direct us to apply intervention in the form of immune modulators, mast cell stabilizers and immune suppressants.

**Methodology:** Using Rome III criteria patient will be recruited, dyspeptic symptoms will be sub classified into epigastric pain syndrome (EPS) and Postprandial distress syndrome (PDS) by assessing the files. The sections will then be stained with Haematoxylin and Eosin (H & E) for all the biopsies received. Special stain will be done for nueroendocrine cells with synaptophysin and mast cells with toluidine blue. All cases will be stained with a panel of antibodies including, CD3, CD8 and CD117 (all from Dako) by using envision detection system.

### 6.34

#### CLINICAL AND CYTOKINE RESPONSE TO *SACCHAROMYCES BOULARDII* THERAPY IN DIARRHEA DOMINANT IRRITABLE BOWEL SYNDROME: A DOUBLE-BLIND RANDOMIZED, PLACEBO-CONTROLLED STUDY

Zaigham Abbas<sup>1</sup>, Javed Yakoob<sup>1</sup>, Wasim S. Jafri<sup>1</sup>, Zubair Ahmad<sup>2</sup>, Muhammad Waqas Usman<sup>2</sup>, Muhammad Islam<sup>3</sup>.

Departments of Medicine, Pathology and Community Health Sciences, Aga Khan University, Karachi

**Introduction:** *Saccharomyces boulardii* (*S. boulardii*) is a probiotic yeast. Its effect on blood and tissue cytokines in patients with diarrhea-dominant irritable bowel syndrome (IBS-D) has not been extensively investigated. We aimed to assess the efficacy of *S. boulardii* to improve cytokine profile, symptoms, histology, and quality of life in patients with IBS-D.

**Methods:** In a double-blind placebo-controlled study we randomized 72 patients, who fulfilled Rome III criteria, to receive *S. boulardii* 250 mg

oral thrice a day for 6 weeks (n=37) or a placebo (n=35) with a 2 week pre-treatment phase and 2 week follow up. Both arms received Ispaghula husk once a day in the evening. Pre-treatment colonoscopy and end of treatment sigmoidoscopy were done. Rectal biopsies and blood samples were taken pre- and post-treatment for the evaluation of IL-8, IL-10, IL-12, and TNF- $\alpha$  level. Improvement in symptoms was assessed by the symptoms' diary completed by the patients. Any change in histopathology was recorded. Improvement in quality of life was assessed by a validated IBS-QOL questionnaire administered pre- and post-treatment.

**Results:** In the probiotic group, there was a significant decrease in blood levels of pro-inflammatory cytokines IL-8 and TNF- $\alpha$  as judged by comparing mean improvement (p=0.000). There was an increase in anti-inflammatory cytokine IL-10 level (p=0.002). The tissue cytokine IL-8 level decreased (p=0.000), while IL-10 and IL-10/IL-12 ratio increased in the probiotic group (p=0.002 & 0.004). Bowel related symptoms improved in each group without statistical differences except abdominal pain which was less severe at the end of treatment in the placebo group. There was an improvement in the overall score (p=0.002), 14 out of 34 parameters and 4 out of 8 domains of QOL-IBS in patients who received the probiotic. In the placebo group the improvement was less marked (p=0.023), in 6 parameters and 2 domains. Direct comparison of end of treatment questionnaire showed improvement in four parameters in the probiotic group and none in the placebo. Though baseline histological findings were mild, improvement was noticed within the probiotic group in the lymphocytic and neutrophil infiltrates (p=0.013 & 0.011), epithelial mitosis (p=0.001), goblet cell depletion (p=0.035), and intraepithelial lymphocytes (p=0.005). However, direct comparison of post-treatment biopsies of both groups did not show any difference. No serious adverse events noted in either group.

**Conclusion:** *S. boulardii* with Ispaghula husk was superior to placebo with Ispaghula husk in improving cytokine profile and quality of life in patients suffering from IBS-D.

**Keywords:** Irritable bowel syndrome, probiotics, *Saccharomyces boulardii*, Ispaghula husk, Cytokines

### 6.35 FOOD HYPERSENSITIVITY IN PATIENTS WITH IRRITABLE BOWEL SYNDROME AND FUNCTIONAL DYSPEPSIA, IN ADULT URBAN POPULATION OF KARACHI, PAKISTAN- A QUASI-EXPERIMENTAL STUDY

*Faisal Wasim, Shahab Abid, Saeed Hamid,  
Hasnain Ali Shah, Wasim Jafri.*  
*Section of Gastroenterology, Department of  
Medicine, Aga Khan University Karachi*

*Background:* Irritable bowel syndrome (IBS) is a gastrointestinal syndrome characterized by chronic abdominal pain and altered bowel habits in the absence of any organic cause. Food Hypersensitivity (FHS) is an adverse health effect arising from a specific immune response that occurs reproducibly on exposure to a given food. The predominant symptoms of FHS are post-prandial nausea, fullness, reflux, occasional vomiting, abdominal pain and diarrhea. IBS and FD may coexist in up to 15 % of patients. It has been noted that patients with IBS/FD often perceive that they may be allergic to certain foods, but that perception nearly always goes unsubstantiated.

*Objective:* To evaluate the frequency of food hypersensitivity in patients with irritable bowel syndrome and functional dyspepsia.

*Methods:* The trial is pending CTU/ERC approval. Patients visiting the out-patient gastroenterology clinics of the AKUH who have been positively diagnosed with irritable bowel syndrome and/or functional dyspepsia as per the Rome III criteria may be recruited, subject to consent. The well-validated Global overall improvement scale (GOS) and the gastrointestinal symptom rating scale (GSRS) will be filled both pre and post randomization to document improvement.

Patients would undergo serological testing against the 6 main food allergens described: beef, shrimp, egg white, milk, peanut, and soybean. Patients who test positive for a food hypersensitivity to any agent will be subjected to an elimination diet for 4 weeks.

Those patients who report improvement on elimination diets as per the GOS/GSRS scores

will be given an oral challenge with the specific antigen they tested hypersensitive to. Documentation of symptoms via GOS/GSRS questionnaires will be done after 2 weeks of unrestricted diet.

The sample size will calculate to estimate the prevalence of IBS with 95% level of confidence and 80% power, and 6% bound on the error of estimation. The minimum sample size required is 171 patients. After incorporating 20% of non-response/ attrition, sample size came out to be 200.

### 6.36 SECONDARY AORTO-DUODENAL FISTULA IN A PATIENT WITH TAKAYASU'S ARTERITIS

*Muhammad Kamran, Tanveer-ul-Haq, Shahab  
Abid*  
*Section of Gastroenterology, Department of  
Medicine, Aga Khan University Karachi*

*Introduction:* Secondary aorto-duodenal fistula (ADF) is a very rare cause of gastrointestinal (GI) bleeding. It occurs due to mechanical erosion or infection of a prosthetic aortic graft into the duodenum, The bleeding may range from a minor and intermittent hemorrhage at its initial stages, to life-threatening exsanguinations. We present a unique case of a bleeding aorto-duodenal fistula in a patient with Takayasu's arteritis who had undergone aorto-aortic bypass 15 years ago.

*Case report:* A 45 year old gentleman was admitted with a three weeks history of intermittent hematemesis and melena. He was a known case of Takayasu's arteritis, diagnosed 15 years ago on angiogram (had renal artery stenosis, right subclavian stenosis and distal aortic stenosis). Patient had undergone aorto-aortic bypass with 11 mm Dacron prosthesis and aorto-renal bypass with Saphenous Venous Graft 15 years ago . Physical examination revealed feeble right brachial and radial pulses. Laboratory findings were unremarkable. His upper GI endoscopy showed few erosions in the antrum of stomach, and a gush of blood coming retrograde from the third part of duodenum. Subsequently, a contrast-enhanced Computed

Tomography (CT) scan was performed, which showed a pseudo-aneurysm arising from inferior part of the aortic graft partially thrombosed at periphery. This pseudo-aneurysm had a fistulous communication with the third part of duodenum. The patient underwent radiological placement of a covered stent across the pseudo-aneurysm, followed by an elective surgical grafting and feeding jejunostomy.

*Conclusion:* ADF must be kept in mind as a possible etiology of massive GI bleeding in patients with a known history of aortic reconstruction or bypass procedure, regardless of the time of initial surgery. Fluoroscopic placement of covered stent is a useful modality to control bleeding in such patients.

### 6.37

#### TO EVALUATE THE OUTCOMES OF DRUG ASSOCIATED ACUTE PANCREATITIS AND TO COMPARE WITH GALL STONE ASSOCIATED AND ALCOHOL INDUCED ACUTE PANCREATITIS

*Manzoor Hussain, Shahab Abid, Hasnain Zafar and Inam Pal*

*Department of Medicine and Department of Surgery Aga Khan University, Karachi*

*Background:* Acute pancreatitis is an acute inflammatory disorder of the pancreas that involves the pancreas and peripancreatic tissues but can sometimes affect other organ system. The initial evaluation of patients with acute pancreatitis involves determining the cause and assessing the severity of disease.

The most common causes of acute pancreatitis are gall stones and alcohol abuse. Drugs are considered to be a rare cause of acute pancreatitis, however 525 different drugs are listed in the World Health Organization (WHO). Many of them are widely used to treat highly prevalent diseases, the causality for many of these drugs remains elusive and causality of only 31 of these 525 drugs was established.

The determination of the incidence of drug induced pancreatitis is complicated as diagnosing drug induced pancreatitis is very

difficult. No data is available from Pakistan related to drug induced pancreatitis.

*Objectives:* To determine the frequency of the etiological risk factors, frequency, complication rate predictors of poor outcome in patients with acute pancreatitis particularly drug induced pancreatitis.

*Materials and Methods:* All patients with acute pancreatitis admitted during the period of last 12 years (From 1<sup>st</sup> January 2001 to 30<sup>th</sup> June 2012) will be included in the study. Risk factors and common drugs associated with pancreatitis will be evaluated and outcomes will be assessed for the development of complications, length of stay, any surgical intervention and mortality. The patients will be divided into following groups:

- Acute pancreatitis associated with potential drugs.
- Acute pancreatitis associated with gall stones.
- Acute pancreatitis associated with alcohol.
- Other etiological risk factors of acute pancreatitis.

The outcomes will be compared between drugs induced and other risk factors associated with acute pancreatitis.

*Results:* To date we evaluated 110 patients with acute pancreatitis, the causative agents found, Gallstones 85 (77.2%), Alcohol 14 (12.72%), Drugs 03 (2.72%), and unknown cause 08 (7.27%). Among them 98 patients (89.09%) recovered completely, 4 patients (3.63%) developed pseudocysts, 7 patients (6.36%) developed sepsis and one patient (0.9%) expired. All patients with drug induced pancreatitis recovered completely.

*Conclusion:* Based on the above results patients with drug induced pancreatitis have better outcome as compared to gall stones and alcohol induced acute pancreatitis, however need further evaluation of data.

### 6.38 LOW RATE OF RECURRENCE OF HELICOBACTER PYLORI INFECTION IN SPITE OF HIGH CLARITHROMYCIN RESISTANCE IN PAKISTAN

*Javed Yakooob, Shahab Abid, Wasim Jafri,  
Zaigham Abbas, Khalid Mumtaz, Saeed Hamid  
and Rashida Ahmed*  
*Section of Gastroenterology Department of  
Medicine, Aga Khan University, Karachi*

**Background:** The aim was to investigate the reinfection rate of *H. pylori* during a follow-up period of 12 months in adults who had undergone eradication therapy.

**Methods:** One hundred-twenty patients; 116 with gastritis, 3 with duodenal ulcer and 1 gastric ulcer, were studied. Their mean age was  $41 \pm 13$  years (range 18–77) and male: female ratio of 2:1. *H. pylori* were cultured and antibiotic sensitivity was determined by Epsilometer test (E-test) for clarithromycin (CLR) and amoxicillin (AMX). Primers of urease C gene of *H. pylori* and Sau-3 and Hha I restriction enzymes were used for polymerase chain reaction-restriction fragment length polymorphism analysis (PCR-RFLP). 14C urea breath test (14C-UBT) was performed 4 weeks after the eradication therapy. The successfully treated patients were observed for 12 months with 14C-UBT to assess *H. pylori* status. If 14C-UBT was negative, it was repeated after every 12 weeks. If 14C-UBT was positive, endoscopy was repeated with biopsies.

**Result:** The eradication therapy was successful in 102(85%) patients. Out of forty-seven *H. pylori* isolates cultured, clarithromycin sensitivity was present in 30(64%) and amoxicillin in 45(98%), respectively. Follow-up 14C-urea breath tests of all 102 patients who eradicated *H. pylori* remained negative up to 9 months. However, in 6 patients, the 14C-UBT confirmed recurrence at 12 months. The recurrence rate was 6%.

**Conclusion:** A low rate of recurrence of *H. pylori* infection was found in patients with dyspeptic symptoms. *H. pylori* isolates demonstrated a high invitro clarithromycin resistance.

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### 6.39 COMPARISON OF THE VIRULENCE MARKERS OF HELICOBACTER PYLORI AND THEIR ASSOCIATED DISEASES IN PATIENTS FROM PAKISTAN AND AFGHANISTAN

*Javed Yakooob, Zaigham Abbas, Wasim Jafri,  
Muhammad Waqas Usman, Fatima Jafri, Safia  
Awan*  
*Section of Gastroenterology, Department of  
Medicine Aga Khan University, Karachi*

**Background:** *Helicobacter pylori* (*H. pylori*) virulence markers exhibit geographical variation. *H. pylori* virulence markers cytotoxin associated gene (*cagA*, *cagE*) and vacuolating associated cytotoxin gene (*vacA*) alleles in local and Afghan nationals with *H. pylori* associated gastroduodenal diseases were studied.

**Methods:** *H. pylori* infection established by both urease test and histology were studied. The *cagA*, *cagE* and *vacA* allelic status was determined by polymerase chain reaction (PCR). **Results:** The mean age and range were similar in two groups. The NUD was common in the Afghani patients ( $P=0.025$ ). The distribution of *H. pylori* *cagA* and *cagE* was similar in both groups. In Afghani *H. pylori* strains, *cagA* was positive in 14(82%) with GC compared to 29(45%) with NUD ( $P=0.006$ ), while *cagE* was positive in 11(65%) with GC and 4(67%) with DU compared to 12(18%) with NUD ( $P<0.001$  and 0.021, respectively). The *vacA* *s1a/b1* was positive in 10(59%) of GC compared to 20(31%) in NUD ( $P=0.033$ ). In Pakistani strains, *cagE* was positive in 12(60%) with GC, 7(58%) with GU, 12(60%) with DU compared to 11(16%) with NUD ( $P<0.001$ , 0.004 and  $<0.001$  respectively). In Pakistani strains *cagA/s1a/m1* was 39(33%) compared to Afghani in 17(19%) ( $P=0.022$ ). Moderate to severe mucosal inflammation was present in 51(43%) Pakistani patients compared to 26(28%) ( $P=0.033$ ) in Afghani. It was also associated with grade '1' lymphoid aggregate in Pakistani

patients 67(56%) compared to 36(40%) ( $P=0.016$ ) in Afghans.

**Conclusion:** Distribution of *H. pylori* virulence marker was similar in two groups. Chronic active inflammation was significant in association with Pakistani strains.

#### 6.40

##### ANTI-HELICOBACTER PYLORI ACTIVITY AND INHIBITION OF HELICOBACTER PYLORI-INDUCED RELEASE OF IL-8 IN AGS CELLS BY PLANT EXTRACTS

Javed Yakoob, Zaigham Abbas, Rustam Khan, Muhammad Waqas Usman, Saeed Hamid, Safia Awan, Kanza Shamim, Syed Faisal Zaidi\*, Toshiro Sugiyama\*, Wasim Jafri  
Departments of Medicine & Biological and Biomedical Sciences, Aga Khan University, Karachi, Pakistan and \*Department of Gastroenterology and Hematology, Graduate School of Medicine and Pharmaceutical Sciences, University of Toyama, Japan

Plants used in popular diet were studied for anti-helicobacter pylori activity and their effect on the expression of interleukin-8 (IL-8) from *H. pylori* infected gastric epithelial cells.

**Methods:** Extracts were prepared of *Allium sativum* (*A. sativum*), *Cuminum cyminum* (*C. cyminum*), *Piper nigrum* (*P. nigrum*) and their mix in two different dilutions. AGS cell line and *H. pylori* strains were used for co-culture experiments. Extracts bactericidal activity was determined by a viable colony count. ELISA (Enzyme linked immunosorbent assay) was used to determine IL-8 expression. DNA extracted from bacterial cells was used for polymerase chain reaction (PCR) of cytotoxin-associated gene (*cagA*) and *E* (*cagE*).

**Results:** *H. pylori* strains sensitivity to *A. sativum* (5.5mg/ml) was 57% (39/69) ( $p=0.06$ ), and to 11mg/ml was 65% (45/69) ( $p=0.02$ ) compared to amoxicillin, respectively. *CagE* positive *H. pylori*, 37% (11/30) ( $p=0.02$ ) were sensitive to plant mixture (23.5mg/ml), 60% (18/30) ( $p<0.001$ ) to plant mix (47 mg/ml), respectively. The expression of IL-8 by AGS cells treated with plant mix, ( $P=0.0037$ ), *C.*

*cyminum* ( $P<0.0001$ ), *P. nigrum* ( $P=0.0046$ ) and *A. sativum* ( $P=0.0021$ ), respectively compared to positive and negative controls.

**Conclusion:** Dietary plants demonstrated an anti-helicobacter pylori effect. They reduced IL-8 expression from the of *H. pylori* infected AGS cells.

#### 6.41

##### DISTRIBUTION OF HELICOBACTER PYLORI OUTER MEMBRANE PROTEIN Q GENOTYPES IN NATIVE PATIENT POPULATIONS AND THEIR SUSCEPTIBILITY TO ANTIADHESIVE PHYTOTHERAPEUTICS AGENTS

Javed Yakoob, Zaigham Abbas, Muhammad Waqas Usman, Saeed Hamid Safia Awan, Malik Hasan Mehmood\*, Wasim Jafri  
Section of Gastroenterology, Department of Medicine and Biological Biomedical Sciences, Aga Khan University, Karachi

Outer membrane proteins of *Helicobacter pylori* mediate pathogen–host interactions such as colonization, adhesion and the inflammatory response. The aims of this study are to determine the hopQ genotype of *H. pylori* strains, its relation to *H. pylori* related gastroduodenal diseases and histopathological changes associated with hopQ, *cagA* and *vacA* genotypes of *H. pylori* isolates. It will also test antiadhesive properties of various phytotherapeutics antiadhesive agents against cultured isolates with defined hopQ type I and hopQ type II outer membrane proteins.

**Material & methods:** *H. pylori* isolates will be cultured from gastric biopsy specimen. Genomic DNA will be extracted using QIAamp tissue kit. PCR for *cagA*, *vacA* and *hopQ* genotypes will be determined followed by nucleotide sequence analysis. Antiadhesive properties of various herbal extracts will be tested against cultured strains with defined hopQ type I and hopQ type II outer membrane proteins. Antiadhesive activity will be determined using antiadhesion assays described previously. Gastric epithelial cell lines (AGS/Kato III) will be used.

#### 6.42 EFFECT OF PLANTA OVATA (*ISPAGHUL*) ON *HELICOBACTER PYLORI* EXPRESSED INTERLEUKIN 8 EXPRESSION IN GASTRIC EPITHELIAL CELL LINE

Javed Yakoob<sup>\*#</sup>, Zaigham Abbas<sup>\*</sup>, Wasim  
Jafri<sup>\*</sup> Muhammad Waqas Usman<sup>\*</sup>,  
Malik Hassan Mehmood<sup>#</sup>, Safia Awan<sup>\*</sup>, Syed  
Faisal Zaidi<sup>□</sup>, Toshiro Sugiyama<sup>□</sup>, Saeed Hamid<sup>\*</sup>,  
Saeeda Shahryar<sup>#</sup>

Department of Medicine<sup>\*</sup> and Biological  
Biomedical Sciences<sup>#</sup>, Aga Khan University,  
Karachi, Pakistan Department of  
Gastroenterology and Hematology<sup>□</sup>, Graduate  
School of Medicine and Pharmaceutical Sciences,  
University of Toyama, Japan

**Aim:** To determine the effect of Ispaghul husk extract on 1) IL-8 expression by the AGS cells (ATCC CRL 1739) and 2) *Helicobacter pylori* (*H. pylori*) stimulated expression of IL-8 by the AGS cells.

**Methods:** AGS cells (ATCC CRL 1739) were cultured. Cells were pretreated with Ispaghul extract in different concentrations i.e., 5µg/ml and 10µg/ml prior to infection with clinical isolates of *H. pylori*. Cell culture supernatant were harvested and analyzed for human IL-8 by ELISA with commercially available kit (BD OptEIA). RNA was extracted from cells by Trizol method and complementary DNA (cDNA) was prepared. Real-time (RT)-PCR was performed with maxima SYBR Green for the messenger RNA expression of GAPDH and IL-8. The comparative CT method 2<sup>-DDCT</sup> was used to study the relative gene expression. Statistical analysis was done to determine the differences in the mean values of IL-8 using student T test and nonparametric Wilcoxon test. P value < than 0.05 was considered significance.

**Results:** The mean basal IL-8 secretion by AGS cell was 51± 1 pg/ml and *H. pylori* stimulated IL-8 was 773 ± 3 pg/ml (P<0.001). Ispaghul extract 5µg/l and 10µg/ml lowered IL-8 to 18± 3 pg/ml, P<0.001 and 12.6± 3 pg/ml, P<0.001, respectively compared to basal IL8. Ispaghul extract 5µg/l and 10µg/ml lowered *H. pylori* stimulated IL-8 to 429± 2 pg/ml (P<0.001) and 575± 3 pg/ml (P<0.001), respectively compared to *H. pylori* stimulated IL-8. The mean IL8 mRNA expression by *H. pylori* stimulated AGS cell was 53 ±1 pg/ml compared to

basal AGS (P<0.001). Ispaghul extract 5µg/l and 10µg/ml lowered IL-8 mRNA expression of *H. pylori* stimulated AGS cells to 5.2± 7 pg/ml (P<0.001) and 2.5± 3 pg/ml (P<0.001), respectively compared to *H. pylori* stimulated AGS cells

**Conclusion:** Ispaghul extract has an effect on both basal and stimulated secretion of IL-8 by *H. pylori*. It decreased IL-8 expression mediated by *H. pylori*

#### 6.43 EFFECT OF *HELICOBACTER PYLORI* VIRULENCE FACTORS ON PORTAL HYPERTENSIVE GASTROPATHY AND INTERLEUKIN-8, IL-10 AND TUMOR NECROSIS FACTOR-ALPHA LEVELS

Zaigham Abbas, Javed Yakoob, Zubair Ahmad,  
Muhammad Waqas Usman, Saeed Hamid, Wasim  
Jafri

Section of Gastroenterology, Department of  
Medicine, Aga Khan University, Karachi

**Introduction:** We aimed to assess the influence of *H. pylori* and its virulent factors cytotoxin associated gene A and E (cag A and cag E) on portal hypertensive gastropathy (PHG) and levels of interleukin (IL)-8, IL-10 and tumor necrosis factor- alpha (TNF-α).

**Methods:** Screening endoscopy was performed in patients with cirrhosis and lesions related to PHG (mosaic pattern, red spots, ectasia and spontaneous bleeding) were graded. Gastric biopsies were obtained from the antrum and corpus for histology, polymerase chain reaction for *H. pylori* 16S rRNA, cagA, cagE and for determination of tissue cytokines levels. RNA was extracted from biopsies by Trizol reagent and complementary DNA (cDNA) was prepared. Real-time (RT)-PCR was performed with maxima SYBR Green for the messenger RNA expression of GAPDH, IL-8, IL-10 and TNF-α gene. The comparative CT method 2<sup>-DDCT</sup> was used to study the relative gene expression. Absence or mild PHG was compared with moderate to severe PHG in clinical, sonographic and laboratory parameters.

**Results:** One hundred and forty patients with cirrhosis were studied; male 92, mean age 50.3±12.0. PHG was graded as negative in 16 (11.4%), mild in 48 (34.3%), moderate in 44 (31.4%) and severe in 32 (22.9%). *H. pylori* were

present in 87 (62.1%) of patients. The presence of *H. pylori* was associated with male gender ( $p=0.032$ ), younger age ( $p = 0.029$ ), hepatitis D etiology ( $p=0.005$ ), higher serum albumin (0.000), lower Child Pugh score ( $p=0.001$ ) and lower portal vein diameter ( $p=0.001$ ). There were no significant differences in the levels of TNF $\alpha$ , IL-8 and IL-10 in biopsies with or without *H. pylori*. Moderate to severe gastropathy ( $n=76$ ) was associated with more male gender ( $p =0.030$ ), hepatitis B etiology ( $p=0.020$ ), larger spleen diameter ( $p=0.000$ ), greater APRI score ( $p=0.021$ ), lesser platelet to spleen ratio ( $p= 0.000$ ), presence of varices ( $p=0.000$ ), gastric varices( $p=0.002$ ). No effects of age, Child Pugh score, MELD score, and presence of *H. pylori* on the severity of PHG could be found. There was no significant difference in the levels of TNF $\alpha$  and IL-8. However, a decrease in the anti-inflammatory cytokine IL-10 was noted with moderate to severe gastropathy. Four *H. pylori* strains were positive for both cag A and cag E while 4 were positive for cag A only. All of the four patients with both virulent factors had mild gastropathy only.

**Conclusions:** The presence of *H. pylori* infection does not affect the severity of PHG and IL-8, IL-10 and TNF- $\alpha$  levels. Severity of liver dysfunction does not affect the PHG though portal hypertension does. There is decline in *H. pylori* virulent factors strain and IL-10 levels in patients with advanced PHG.

**Keywords:** Helicobacter pylori, virulence factors, portal hypertensive gastropathy

#### 6.44

### BELLS Palsy AND HYPOTHYROIDISM ASSOCIATED WITH ACUTE HEPATITIS – A CASE REPORT

*Anela Ahmed, Anam Pal and Shahab Abid  
Section of Gastroenterology, Department of  
Medicine Aga Khan University, Karachi*

We present a case of the simultaneous occurrence of acute hepatitis, hypothyroidism and facial nerve palsy in a young female. The patient had an uneventful recovery after 2 months and is leading a normal life now.

In literature there is a case reported that had demonstrated the development of cranial

neuropathies associated with hypothyroidism in patients who were received interferon therapy for hepatitis C infection. We are reporting a case in which hypothyroidism and facial nerve palsy occurring simultaneously in a patient with acute viral hepatitis.

#### 6.45

### CASE REPORT: AN YOUNG MALE WITH BLOOD IN VOMITING, MALENA AND ABDOMEN PAIN, A RARE CAUSE OF UPPER GI BLEED AND SPONTANEOUS INTRAPERITONEAL BLEED.

*Om Parkash, Adil Ayub, Shahab abid  
Section of Gastroenterology, Department of  
Medicine Aga Khan University, Karachi*

A 15-year-old male presented to our Emergency department with complaint of black stools since 2 days, upper abdominal pain since 3 days and upper GI bleed since 1 month. The pain was in the left upper quadrant, severe in intensity and diffuse in nature. There was no radiation and no aggravating or relieving factors. On examination he was vitally stable and anemic on general physical exam. Abdominal examination revealed tenderness in the left upper quadrant and digital rectal examination was positive for melena. He was a known case of Glanzmann's thrombasthenia, Hepatitis C and was discharged from our hospital 5 days back. Further past history revealed that he presented 2 weeks back with complaints of upper GI bleed and abdominal pain. On examination, he was markedly pale and tachycardia and an NG was passed which showed mixed aspirate. An EGD done at that time revealed 2 forest class 1b ulcers in the fundus where hemoclips were applied to secure hemostasis and 1 along the lesser curvature where hemostasis was attained by adrenaline injection. Post EGD, he continued to drop Hb with ongoing melena. Hematology was consulted, who diagnosed Glanzmann's thrombasthenia after confirmation through aggregation studies. He was managed on platelet and transamine infusion and an angio-embolization was performed which revealed bleeding from left gastric artery which was



embolized using PVA particle. Post-procedure, he remained stable and was discharged in 2 days.

In current visit, an ultrasound abdomen was done which showed evidence of large heterogeneous area of minimal echogenicity in the left upper quadrant and sludge in gall bladder. A CT scan was also done which showed a 14 × 9 cm collection in lesser sac. General surgery was taken on board who advised an Ultrasound guided drainage since he wasn't a suitable candidate for surgery. So, he underwent ultrasound guided drainage and a drain was left in place. Post procedure, his symptoms improved and he was discharged with the drain in place after a week.

The patient followed up regularly in clinic after 2 weeks interval. At last follow-up, he had mild low grade fever and constipation, but there was no pain or episode of bleeding.

#### 6.46

##### CRIMEAN-CONGO HEMORRHAGIC FEVER: FIRST CASE IN A PATIENT WITH LIVER TRANSPLANT FROM PAKISTAN.

*Muhammad Akram, Muhammad Sadiq, Mohammad Salih  
Section of Gastroenterology & Hepatology, Aga Khan University, Karachi*

*Introduction:* CCHF is an acute viral infection caused by the CCHF virus, an RNA virus with very high mortality rates reaching 15-70%. The CCHF virus is also a potential bioterrorist agent. Ixodid ticks of the genus Hyalomma are its natural vectors. Human beings are infected following a tick bite or direct contact with blood or tissue of infected animals during slaughter. Human to human transmission is possible via contact with infected blood or secretions. Patient can present with fever, abdominal pain, generalized body aches and pains, rash and bleeding diathesis. We report the first case of CCHF in a patient with liver transplant. So far in literature, no case has been reported in a patient with solid organ transplant.

*Case report:* 44 yr old gentleman, doctor by profession, presented with history of fever and

loose stools for the last 5 days in GI clinic. He underwent living donor liver transplant (LDLT) for HBV and HDV CLD in India in 2008. He was on Tacrolimus, Mycophenolate mofetil and Entecavir. On examination, he was ill looking, lethargic and tachycardiac. Initial laboratory workup revealed coagulopathy and dangerously low platelet count. Workup for malaria, dengue fever, leptospirosis, cytomegalovirus, acute hepatitis A and E was negative. His Crimean-Congo hemorrhagic fever virus RNA was detected by polymerase chain reaction (PCR). He received Ribavirin but died because of multiorgan failure and disseminated intravascular coagulation (DIC).

*Conclusion:* CCHF should be considered in a patient who presents with fever and bleeding diathesis. Doctors should have a high level of suspicion in all cases with fever and bleeding diathesis. Doctors and medical staff should be educated about the CCHF and its timely management. Ribavirin appears to be effective for prophylaxis.

*Keywords:* Crimean Congo hemorrhagic fever virus; Pakistan; Ribavirin; living donor liver transplant

#### 6.47

##### CROSS SECTIONAL STUDY ON SPECTRUM OF ACUTE RENAL DISORDERS IN CHRONIC LIVER DISEASE IN A TERTIARY CARE HOSPITAL KARACHI

*Om Parkash, Faraz faizuddin, Danial Siddique, Shahab Abid, Ather hussain, Saeed Hamid  
Section of Gastroenterology, Department of Medicine Aga Khan University, Karachi*

*Introduction:* Renal Dysfunction is an important cause of morbidity and mortality associated with CLD. The combination of liver disease and renal dysfunction may arise due to a systemic condition that affects both the liver and the kidney simultaneously. However, renal dysfunction complicating primary disorders of the liver are much more common. We aimed to

see the frequency of renal disorders in patients with chronic liver disease in this part of world.

*Results:* Total of 205 cirrhotic patients were reviewed, among them 125 (61%) were male. HCV associated cirrhosis was the most common cause of cirrhosis in 131 (64%) followed by non B non C cirrhosis in 44 (22%), HBV cirrhosis in 17 (8%) and HBV/HDV cirrhosis in 11 (5%). 87 (42%) patients had no comorbidities while 63 (31%) had hypertension, DM in 46(22.4%) and IHD in 4 (2%). 89 (43.4%) had renal disorders among them 42 (21%) had acute kidney injury, 23(11%) chronic renal impairment, 19 (9.3%) type I HRS and 5(2.4%) had type II HRS.

*Conclusion:* We conclude that renal disorders are more prevalent in this part of world in chronic liver disease patients as compared west.

#### 6.48

##### TREATMENT OF CHRONIC HEPATITIS D PATIENTS WITH PEGYLATED INTERFERON

Zaigham Abbas<sup>1,2</sup>, Muhammad Sadik Memon<sup>3</sup>, Hammad Mithani<sup>2</sup>, Wasim Jafri<sup>1</sup>, Saeed Hamid<sup>1</sup>.  
Section of Gastroenterology, Department of Medicine, Aga Khan University, Karachi<sup>1</sup>, OMI Hospital, Karachi<sup>2</sup>, Isra University, Hyderabad<sup>3</sup>

*Background:* Published experience of treating chronic hepatitis D patients with pegylated interferon alpha (PEG-IFN) is limited. The aim of this study was to determine the efficacy and safety of 48 weeks treatment with PEG-IFN for naïve patients outside the clinical trial setting in the real world.

*Methods:* Patients of chronic hepatitis D with compensated disease, HDV RNA positive and elevated alanine aminotransferase (ALT) who received treatment with PEG-IFN between January 2009 and December 2011 were included. The primary end points were clearance of HDV RNA at week 48 and normalization of ALT levels.

*Results:* One hundred and four patients were treated with standard doses of pegylated interferon alpha; male 91, mean age 30.1 ± 10.0 years (range 15-55). Cirrhosis was present in 41 patients. With an intention to treat analysis,

clearance of HDV RNA at the end of treatment was achieved in 44 patients (42.3%) and normalization of ALT in 38 (35%). The efficacy of PEG-IFN was sustained in 24 (23.1%) at 24 weeks follow-up. Negative HDV RNA at 24 weeks of treatment and normal ALT at the end of treatment were associated with sustained virological response (p=0.002 & 0.041). Four patients decompensated; 3 during treatment and one during follow up period.

*Conclusion:* Treatment with PEG-IFN for hepatitis D is of limited efficacy. Negative HDV RNA at 24 weeks of treatment is a good predictor for sustained virological response

*Keywords:* Hepatitis D, treatment, pegylated interferon

#### 6.49

##### POST LIVER BIOPSY COMPLICATIONS AND FACTORS ASSOCIATED WITH THESE COMPLICATIONS AT A TERTIARY CARE HOSPITAL

Muhammad Akram, Syed Hasnain Ali Shah  
Section of Gastroenterology & Hepatology, Department of Medicine, Aga Khan Hospital, Karachi

*Introduction:* Hepatocellular injury leads to fibrosis and nodular regeneration throughout the liver and ultimately cirrhosis and hepatocellular carcinoma. Liver is a common site for metastasis from colon, breast and lung. Blood tests and ultrasound are commonly used to diagnose liver diseases. However liver biopsy is used to diagnose, stage the disease, assess the histology and response to a specific treatment. Liver biopsy is an invasive procedure. It can lead to certain complications and rarely death of the patient. Data regarding the complications and associated factors after liver biopsy in our population is limited.

*Objectives:* To determine the complications of liver biopsy and factors associated with these complications at a tertiary care hospital.

*Methods:* Cross sectional study. The study was conducted from January 10, 2011 to December 20, 2011. Patients admitted in wards or

endoscopy suite and visiting the GI clinics in Aga Khan Hospital were enrolled after fulfilling the inclusion criteria.

**Results:** A total of 100 subjects were included in this study. Mean age was 46±14 years. 61 (61%) were male out of 100 patients. Indications for liver biopsy were liver mass/metastasis in 37 (37%), deranged liver function tests in 27 (27%), chronic hepatitis C in 16 (16%), chronic hepatitis B in 8 (8%), both HBV+HDV in 4 (4%), post liver transplant in 2 (2%), miscellaneous in 6 (6%). Pain was seen in 66(66%) patients. Out of these 66 patients, 19(19%) had mild pain, 5(5%) had moderate pain, 42(42%) had severe pain. Bleeding was seen in 33(33%), 27(27%) patients had insignificant bleeding while 6(6%) had significant bleeding. 11(11%) patients developed hypotension after liver biopsy. 6(6%) developed fever after the liver biopsy. 2(2%) patients died after liver biopsy. 1 patient developed hydropneumothorax. 47(47%) patients were discharged on the same day of liver biopsy after an observation period of 6 hours. Factor associated with above complications were age ≥ 50 years, noted in 45(45%) patients and liver mass/metastasis in 27(27%) patients. In 21(21%) patients, male gender was the factor. In 5(5%) patients, serum creatinine ≥ 1.5 was the factor. Both patients who died had serum creatinine more than 1.5. More than 3 needle passes was the factor seen in 5(5%) of the cases. In 43(43%) patients, there was a single factor, 15(15%) had 2 and 9(9%) had ≥ 3 factors.

**Conclusion:** We concluded that pain and bleeding are the most frequent complications after liver biopsy. If liver biopsy is done under ultrasound guidance, chances of visceral perforation are minimized. Age ≥ 50yr, male gender, liver malignancy, > 3needle passes and renal insufficiency are the most common factors associated with complications. Mortality is high in patients with liver mass and renal insufficiency after liver biopsy.

**Keywords:** Liver biopsy, cirrhosis, factors.

## 6.50 IMPACT OF CHRONIC LIVER DISEASE ON DENGUE FEVER PATIENTS IN KARACHI SOUTHERN PAKISTAN

*Om Parkash, Saeed Hamid*  
*Section of Gastroenterology, Department of*  
*Medicine, Aga Khan University, Karachi*

**Rationale:** Hence because of the high burden of CLD in Pakistan, manifestation of dengue fever in CLD has not been studied as yet and also cytokine response is yet to be fully investigated in CLD patients with dengue infection; therefore we want to see the impact of chronic liver disease on dengue patients in terms of mortality, hospital stay and their cytokine responses. This study will help in better understanding the pathophysiology (immunopathogenesis) and help in determining the therapy. Till now there is no definite treatment for dengue fever.

**Research Questions:**

- Is there a difference in cytokine response of CLD on dengue patients
- Is there a difference in mortality, length of stay in dengue patients with CLD

**Objectives:**

**Primary:** To see the difference in cytokine response among study subjects with dengue fever in CLD, non CLD patients with dengue fever, dengue fever patients and healthy controls.

**Secondary:** To see the difference in mortality and length of stay among study subjects with dengue fever in CLD, non CLD patients and healthy controls

**Keywords:** CLD, dengue fever

# **Health Sciences Education**

## 7.1 PREVALENCE OF BURNOUT AMONG TRAINEE DOCTORS IN A DEVELOPING COUNTRY

*Akbar Jaleel Zubairi, Shahryar Noordin  
Department of Surgery, Aga Khan University,  
Karachi*

**Background:** Recent literature has focused on burnout as a specific job related distress syndrome among physicians and residents having adverse effects on patient care. Local data on burnout is lacking.

**Methods:** An online self-administered questionnaire was sent via email to all residents (368) and surgeons (54) (control group) at our institute with a response rate of 125 (34%) and 23 (43%) respectively. 82 residents and 21 surgeons who consented and completely filled questionnaires were included in the analysis. The questionnaire comprised of demographic variables, the Maslach burnout inventory and occupational risk factors.

**Results:** High levels of burnout were reported by 74.4% of residents as compared to 42.9% of surgeons ( $p=0.006$ ). Residents reported higher levels of individual components of burnout as well with the risk of Emotional exhaustion being 4.5 times and depersonalization being 3 times more as compared to Surgeons. Among residents, dissatisfaction with workload, length of work hours, relationship with co-workers (seniors and juniors) and lack of autonomy were associated with high levels of burnout. Dissatisfaction with future career prospects correlated with high level of burnout in surgeons.

**Conclusion:** High levels of burnout are prevalent among trainee doctors in our part of the world which are not seen in consultant surgeons. Our results are comparable with international literature and efforts to improve the work environment of residents may significantly reduce levels of burnout.

**Keywords:** Burnout, residents, work hours

## 7.2 CHARACTERIZATION OF GENOMIC VARIATIONS IN PE\_PGRS GENES REVEALS INCREASED DELETIONS IN EXTENSIVELY DRUG RESISTANT (XDR) M. TUBERCULOSIS CAS1 STRAINS

*Akbar Kanji, Zahra Hasan, Asho Ali, Ruth  
Mcnerney, Kim Mallard, Francesc Coll, Grant  
Hill-Cawthorne, Taane G. Clark, Sana Jafri,  
Rumina Hasan*

*Department of Pathology & Microbiology, Aga  
Khan University, Karachi, London School of  
Hygiene and Tropical Medicine, UK, and  
Emerging Infections and Biosecurity Institute and  
School of Public Health, Sydney*

**Introduction:** Mycobacterium tuberculosis (MTB) PE\_PGRS GC rich repetitive sequences belong to the PE multigene family. They represent approximately 10% of the coding capacity of the MTB genome and are characterized by their high GC content and repetitive sequences. The Whole genome sequencing (WGS) has identified single nucleotide polymorphism (SNPs) in genes associated with drug resistance in MTB. The SNPs and InDels in the PE\_PGRS genes of drug resistant MTB strains can provide insights into genomic variations between strains and explain phenotypic/immunogenic differences between MTB isolates.

**Method:** WGS analysis was performed on 5 drug-susceptible Central Asian Strain 1 (CAS1) and 37 XDR strains: 20 CAS1, 2 CAS, 1 CAS2, 2 East African Indian, 9 Orphan, 2 T1 and 1 X3 strains.

**Results:** Comparison of clinical isolates with the reference H37Rv revealed 16 Non synonymous and 95 synonymous SNPs in the PE\_PGRS genes. All 42 MTB strains had SNPs in the PE\_PGRS genes: 1, 3, 6-7, 9-10, 13 and 47. The PE\_PGRS deletion genes: 3, 5, 19, 21, 49 and 55 and PE\_PGRS insertion genes: 6, 19, 28, 30, 33, 53, 57 and 61 were common in both susceptible and XDR MTB strains. The deletions in PE\_PGRS: 19 and 49 were significantly more in XDR CAS1 vs. susceptible CAS1 MTB strains ( $p=0.0351$ ,  $p=0.0032$ ) respectively. The insertions were significantly more in PE\_PGRS6 ( $p=0.0412$ ) in XDR CAS1 vs. susceptible CAS1 strains. analysed by Pearson's Chi-square test.

**Conclusion:** More deletions and insertions in PE\_PGRS genes were observed in CAS1 XDR

MTB as compared with susceptible CAS1. The impact of antigenic variations in the PE\_PGRS needs to be studied further as this indicates possible changes which lead to antigen variation and possibly improved transmission of CAS1 strains.

*Keywords:* Mycobacterium tuberculosis, PGRS, deletions

### 7.3 ESTABLISHING VALIDITY AND RELIABILITY OF AN INSTRUMENT DESIGNED TO ASSESS TRACHEAL INTUBATION SKILLS IN ANAESTHESIA TRAINEES

*Aliya Ahmed, Fauzia Anis Khan, Samina Ismail  
Department of Anaesthesiology, Aga Khan  
University, Karachi*

*Introduction / Objective:* Anaesthesiologists perform complex clinical tasks which the trainees are expected to master during training. Technical skills are often assessed with subjective evaluations by senior colleagues. Objective assessment using well defined criteria can greatly improve assessment of technical skills. The objective of this study was to evaluate the construct validity, and reliability of an instrument to assess competence of anaesthesia trainees in tracheal intubation.

*Methods:* Approval was granted by University Ethics Review Committee. Twenty trainees were recruited, ten junior and ten senior. Informed consent was taken and residents were assessed while working in their assigned operating room. Assessment was done simultaneously by two senior consultants and a structured assessment form was filled by them independently. Each resident was observed twice within 3 – 4 weeks. Percent agreement and kappa statistics was computed to assess reliability and Mann Whitney u test was applied to compare median score between junior and senior residents to determine construct validity.

*Results:* The average kappa value for inter rater reliability was 0.76 with mean agreement of 87% while test retest reliability showed mean

kappa of 0.33 with 78% agreement. A significant difference was seen in median scores between groups, demonstrating good construct validity ( $p < 0.05$ ).

*Conclusion:* Our results show that the instrument designed by us to assess tracheal intubation skills in anaesthesia trainees has good construct validity and demonstrates inter-rater and test-retest reliability.

*Keywords:* Direct observation, procedural skills, tracheal intubation

### 7.4 THE DEVELOPMENT OF THE CLINICAL REASONING CONSTRUCT OF UNDERGRADUATE STUDENTS IN AN INTERNAL MEDICINE CLERKSHIP PROGRAM.

*Azam Saeed Afzal, Syeda Kauser Ali, Junaid  
Patel, Sara Sajid, Tabassum Zehra, Saeed  
Hamid*

*Department for Educational Development and  
Department of Medicine, Aga Khan University,  
Karachi*

*Background & Objectives:* In medical education, the curriculum is continually monitored to ensure quality standards. Often overlooked in Pakistan though are robust analysis of the assessments, that give meaningful interpretation of the results. This study was done to explore the construct validity related evidence of clinical reasoning in the multi-method assessments used for assessing student performance in the undergraduate medicine clerkship program at Aga Khan University (AKU).

*Methods:* The assessments scores of students 167 students were used, from two consecutive cohorts. Exploratory and confirmatory factor analysis was conducted to identify underlying constructs assessed by clerkship assessments; regression for direction of causality; and a multi-trait multi-method matrix for construct validity.

*Results:* The reliability of the assessment instruments used for assessing clinical reasoning were 0.76 - 0.94. Factor analysis isolated an attribute which was identified as clinical

reasoning ability. Construct validity was determined by applying the Campbell and Fiske criteria to a multi-trait multi-method matrix .

*Conclusions:* The AKU spiral curriculum, allows students first learn about the basic science information about clinical presentation in PBL tutorials. This primes learners for the clinical years and develops hypotheico-deductive reasoning. During third year they start interacting with patients and through experiences with real cases, this knowledge begins to transform into cognitive structures called illness scripts. During the clinical years clinical teaching ensures that Bowen's areas of common clinical reasoning deficiencies are addressed. The undergraduate assessment of clinical competence conducted by the department of medicine at AKU predominantly assesses students' clinical reasoning ability which is essential to certify physicians

*Keywords:* Assessment, psychometrics, construct validity

#### **7.6** ADVANCED LIFE SUPPORT IN OBSTETRICS (ALSO) WORKSHOP ON YEAR-ONE POST GRADUATE STUDENTS (PGS) - A PRE AND POST WORKSHOP ANALYSIS

*Dania Anwar, Dr Rahat Najam Qureshi, Dr Sana Sheikh*

*Department of Obstetrics and Gynaecology, Aga Khan University, Karachi*

The study is being conducted in Aga Khan University Hospital in obstetrics and Gynaecology department on year one residents admitted in the year 2013. The ALSO Provider Course is a part of on-going training for Obgyn faculty, residents and labour room staff along with participants from Family Medicine and Emergency Medicine. The aim of this study is to identify the changes, if any, in the knowledge and skills taught to manage emergency obstetrics situation, after attending ALSO Provider Course. A total of 10 candidates have been taken as post graduate students in the year

2013 and all will be included in the study. Each candidate is asked to fill in survey questionnaire, give feedback on each facilitator's performance on a five point grade scale, and appear in a pre and post written exam and viva. So far the data for 7 participants have been collected. There was a great progress observed in the pre and post results for both written and viva exam. All the candidates scored higher in the post written and viva. There was a minimum 23% increase in total Post exam marks and a maximum of 47% increase at p-value .018. The results are subjected to change.

*Keywords:* Knowledge, ALSO Provider Course, Workshop analysis

#### **7.7** NON-ACADEMIC CHALLENGES FACED BY FEMALE RESIDENTS DURING POST- GRADUATE TRAINING AT A UNIVERSITY HOSPITAL.

*Madiha Hashmi, Fauzia Anis Khan, Sobia Khan, Syeda Kausar*

*Department of Anaesthesiology and Department for Educational Development, Aga Khan University, Karachi*

*Introduction:* Post Graduate Medical training is a stressful experience for both male and female doctors but some sources of stress are unique or more prevalent amongst female residents.

*Objectives:* To find out the prevalence of stress and identify the most common stressors faced by female residents.

*Methodology:* This cross sectional survey recruited all female residents in the post graduate training programmes at the Aga Khan University after obtaining informed written consent. Job stress inventory (JSI) was used to identify symptoms and sources of job stress. This inventory consists of 20 questions related to symptoms and 50 questions to sources of job stress. A score of >25 indicates job stress. The questions related to sources of job stress are categorized under the subheadings of lack of control, information gap, cause and effect,

conflict, alienation, overload, underload, environment and value conflict.

*Results:* 155 female residents met the inclusion criteria. The response rate of the survey was 75.4%. Fifty-nine (51%) residents scored 26 or more on the JSI tool. The most common symptoms reported were change in eating or drinking habits and/or use of sedatives (37%), forgetfulness (31%) and a feeling of dissatisfaction (30%). In this cohort of residents the most frequent sources of job stress fell under the headings of “cause and effect” (33%) and “lack of control” (16.7%).

*Conclusion:* More than half of our female residents feel and display symptoms of job stress during their post-graduate training. There is a need to explore the sources of job stress and recommend a support system.

*Keywords:* Job-stress, female residents

## 7.8

### NATURE OF THE BEAST CALLED CLINICAL SUPERVISION. NEEDS ASSESSMENT OF CLINICAL SUPERVISION IN PGME AT AKU

*Tabassum Zehra, Rukhsana W Zuberi*  
*Department for Educational Development, Aga  
Khan University, Karachi*

*Objective:* The objective of the study was to identify the needs of the residents with respect to clinical supervision and to develop a model of clinical supervision based on residents’ needs and literature.

*Introduction:* Clinical Supervision has a vital role in residency training programmes and is considered as fundamental part of clinical professional training. There is a dearth of literature on the residents’ perspectives regarding the roles of a clinical supervisor. This study was done to explore the residents’ perspectives at the Aga Khan University (AKU), Karachi, Pakistan regarding their needs of the roles of clinical supervision in order to help develop a model of clinical supervision for the residency supervisors.

*Methods:* A mixed method approach was used with quantitative cross section survey and qualitative focus group discussion. All the residents registered with the Post Graduate Medical Education (PGME) office at AKU Karachi, Pakistan were surveyed. Descriptive analysis of the quantitative part and thematic coding of the qualitative part was done. Exploratory factor analysis was done to identify underlying constructs

*Results:* There was an overall response rate of n= 317/420 (75.47%). The residents rated the roles of the clinical supervisor very highly (Mean = 4.43 - 5.85, SD = 1.21- 1.86). Exploratory factor analysis yielded two component factors related to specialist skills as an expert and role modeling skills. These findings were supported by residents in the focus group discussion.

*Conclusion:* The relevance of clinical supervision to the residents’ needs and literature in defining the roles of the clinical supervisor was supported.

*Keywords:* Clinical supervision, resident, postgraduate medical education

## 7.9

### TREATMENT OF SEPTIC WOUNDS USING ULTRAVIOLET LIGHT EXPOSURE: A CASE REPORT.

*Arshalooz Rahman*  
*Department of Paediatrics & Child Health, Aga  
Khan University, Karachi*

Treating post-trauma sepsis is one of the most challenging problems that physicians and health-care providers face. Even with recent advancements in medicine and availability of new antimicrobial agents, doctors may still have trouble treating certain wound infections and resulting sepsis which remains unresponsive to wide range of antimicrobial drugs. We report the case of a female child having post-burn wound infection on her back and consequent sepsis. Tissue cultures showed infection by multiple microorganisms and a variety of antibiotic regimens were administered but showed



negligible clinical improvement. An improvised technique of wound exposure to surgical ultraviolet (UV) light lamps was then employed which resulted in a noteworthy clinical response with a favorable outcome.

*Keywords:* Sepsis, wound infection, UV light

### 7.10

#### A SURVEY OF UNDERGRADUATE ANAESTHESIA ROTATION IN MEDICAL COLLEGES OF PAKISTAN

*Muhammad Irfan Ul Haq, Fauzia Minai, Gauhar Afshan  
Department of Anaesthesiology, Aga Khan University, Karachi*

*Introduction:* Student perceptions of specialties influence career choice decisions. It is important to expose undergraduates to the scope of rewarding careers in specialities like anaesthesia by ensuring a good quality educational experience during anaesthesia rotation.

*Objective:* Our objective was to survey the curriculum structure and placement of the anaesthesia undergraduate rotation in all the medical colleges of Pakistan recognized by the Pakistan Medical and Dental Council.

*Methods:* A standardised survey questionnaire was distributed by direct contact, postal mail or e mail to one identified anesthetist in all recognized medical colleges with enrolment of 100 or more students. The response rate was 75%. We received responses by hand, email and postal mail.

*Results:* We received responses from 15 out of 20 anaesthetists contacted. 11 reported undergraduate anaesthesia rotation while 4 reported absence of this rotation in their undergraduate curriculum. The rotation placement, duration and curriculum showed a wide variation and lack of standardisation.

*Conclusion:* Our survey indicated that the inclusion of anaesthesia rotation in undergraduate medical education is not mandatory and standardised. The rotation duration, placement and curriculum need to be standardized to enhance the quality of the

experience and promote the scope of the speciality for rewarding careers. Key Message: Anaesthetists should play a more active and academically visible role in undergraduate medical education.

*Keywords:* Anaesthesia, rotation curriculum, undergraduate medical education

### 7.11

#### DEFICIENCY OF VITAMIN D -CAUSING OSTEOMALACIA

*Hunaina Hadi, Shamsa Hadi  
School of Nursing & Midwifery, Aga Khan University, Karachi*

*Introduction:* In adults, Vitamin D deficiency results in abnormal bone formation. There is a growing prevalence of vitamin D deficiency, which when becomes prolonged results in hypocalcaemia, secondary hyperparathyroidism, secondary hypophosphatemia, and osteomalacia. Nutritional vitamin D deficiency is therefore an increasingly common cause of osteomalacia in adults. Nowadays the infrastructure of houses and apartments are build in such ways that source of sunlight is rare, secondly sedentary life style, vegan diets, consumption of alcohol and energy drinks have added in increased prevalence of the disease. Therefore an attempt was made to review the published literature so as to create awareness and importance of Vitamin D among the people.

*Method:* A comprehensive literature search was conducted through electronic medium to explore the relevant literature. Various databases i.e. Pub med, Google search engines, Science Direct, JPMA and SAGA were used. In addition manual search was also done by accessing available articles in periodic library.

*Result:* In the Middle East, a high prevalence of osteomalacia has been described in Muslim women and their infants, perhaps due to increased clothing coverage of the skin. Osteomalacia was found prospectively in 3.6% of all female outpatients (3600/100,000). Purdah did not appear to influence the incidence of osteomalacia, although sunlight exposure varied

significantly. Populations at risk include the homebound elderly who have little sun exposure and people who take insufficient dietary calcium and vitamin D, patients with malabsorption related to gastrointestinal bypass surgery or celiac disease, and immigrants to cold climates from warm climates, especially women who wear traditional veils or dresses that prevent sun exposure.

*Conclusion:* The minimum recommended daily all ounces (RDA) of vitamin D is 400 international units/day or approximately 1 microg per day for adults and 800 international units/day for older people.

*Keywords:* Osteomalacia, Vitamin D, sunlight

### 7.12 TOXIC SHOCK SYNDROME – AWARENESS FOR YOUNG LADIES

*Hunaina Hadi, Shamsa Hadi*  
*School of Nursing & Midwifery, Aga Khan*  
*University, Karachi*

*Introduction:* Toxic Shock Syndrome (TSS) is multisystem toxin mediated; acute life threatening febrile illness precipitated by infection caused either by *Staphylococcus aureus* or *streptococcus pyrogens* (group A) bacteria. Women of menstruating age are at higher risk for getting TSS, which is linked with the use of superabsorbent tampons during menstrual discharge for a longer period of time which becomes breeding ground for bacteria and their toxins to enter the blood stream. Therefore an attempt was made to review the published literature regarding the ways young girls and women can prevent themselves from TSS.

*Method:* A comprehensive literature search was conducted through electronic medium to explore the relevant literature. Various databases i.e. Pub med, Google search engines, Science Direct, JPMA and SAGA were used. In addition manual search was also done by accessing available articles in periodic library.

*Result:* It has been reported that annual incidences of TSS in women between ages 12 – 30 years was 15.8/100000 whereas between ages

30 – 45 years was 2.5/100000. Mortality rate for toxic shock syndrome (TSS) is around 5-15%. A fatality rate of up to 64% has been noted in cases of streptococcal toxic shock syndrome (STSS) in the Asia. Recurrence of TSS is found in 30-40% of cases. Moreover it was revealed that lack of appropriate knowledge regarding cautious use of tampons is the main hindrance resulting in increased cases of TSS.

*Conclusion:* Awareness among young ladies is the next step that could help decrease the disease prevalence. This attenuates the requirement for framing the strategies to provide knowledge among the youth of 21st century.

*Keywords:* Toxic shock syndrome, Tampons, *S. aureus*

### 7.13 BLENDED LEARNING (BL) IN PAEDIATRIC EMERGENCY CARE: EXPERIENCE FROM AGA KHAN UNIVERSITY HOSPITAL

*Jabeen Fayyaz, Azra Naseem, Junaid Razzak*  
*Department of Emergency Medicine and*  
*Institute for Educational Development, Aga*  
*Khan University, Karachi*

*Introduction:* E-learning and blended learning (BL) as a strategy in high stake specialties like Pediatric Emergency Medicine is gaining popularity. BL is a feasible and efficient way of disseminating knowledge to healthcare providers in challenging contexts. In this poster presentation, we will share a proposal of a research study that we wish to undertake, and seek feedback.

*Objective:* To determine the effectiveness of Blended learning approach for Pediatric Emergency Care training.

*Methods:* A 13-week course of Pediatric Emergency Care will be developed, and offered to the physicians working in emergency settings of public and private sector hospitals. It will be a blend of Online and face-to-face interaction. It will contain modules on resuscitation, common Paediatric emergencies and trauma management. Knowledge will be taught online while the skills like CPR, Cardio version, Defibrillation,

Insertion of Intraosseous line will be taught in the one week face to face interaction. The modules includes different teaching and learning strategies including, self-reading, demonstration sessions, case based discussions, assignments and live online sessions. The summative assessment will be in the form of online quizzes and pre and post-tests of knowledge. To determine the effectiveness of the BL approach for the Pediatric Emergency Care training, the grades of pre and posttest will be evaluated and the change in knowledge will be assessed.

*Result:* The course is in the process of being developed. The data will be gathered before, during and at the end of the course. The data will be analyzed and shared.

*Keywords:* Paediatric, learning, emergency

#### 7.14

##### IMPACT OF PEDIATRIC EMERGENCY CARE WORKSHOPS IN IMPROVING KNOWLEDGE: SHARING EXPERIENCE FROM PESHAWAR, KABUL AND LAHORE

*Jabeen Fayyaz, Uzma Rahim Khan, Ali Merchant, Shakeel Siddiqui, Nasir Rana  
Department of Emergency Medicine, Aga Khan University, Karachi*

*Introduction:* Pediatric Emergency training is an emerging subspecialty nationally. Adequate identification and management of critically ill and injured children have a positive impact in improving morbidity and mortality in children. To assess the impact of two days workshop in improving knowledge regarding Pediatric Emergency care at Khyber medical Institute Peshawar, Kabul and Children hospital Lahore.

*Methods:* Two day workshop was conducted at KMU Peshawar and FMIC Kabul. The course comprised of didactic and case based sessions on Resuscitation in children, identification and management of cardiac arrest and common Paediatric emergencies presenting to ED. There were skill stations regarding, CPR, defibrillation, neonatal resuscitation and intraosseous line insertion for the hands on learning. The Pretest and posttest was taken to

assess the impact of course in improving knowledge. The participants also evaluate the workshop as a whole through written evaluation forms.

*Result:* Total participants in these entire workshops were 44 at KMU Peshawar, 32 at FMIC Kabul and 65 at CH Lahore respectively. The mean score in pretest was 28.4 percent (95% CI; 24-40) and in posttest the mean score was 73 percent (95% CI; 47- 61). The Wilcoxon signed rank test showed the difference in pre and posttest to be statistically significant. (p -value of <0.001). The overall workshop was evaluated as excellent by 47.46% and good by 52.63% of the participants. The weakness that was shared were shorter duration and infrequent occurrence of such workshops.

*Conclusion:* Short training workshops for pediatric emergency care has shown to improve the knowledge.

*Keywords:* Paediatric emergency, teaching, Pakistan

#### 7.15

##### PEER ADVICE ON TEACHING: A FORMATIVE AND REFLECTIVE EXERCISE

*Kulsoom Ghias  
Department of Biological & Biomedical Sciences, Aga Khan University, Karachi*

*Introduction:* The idea of peer assessment of performance is not new to the medical profession. For example, 360<sup>0</sup> feedback is used to provide accurate, reliable, and timely assessment of the competence of residents and practicing physicians. Assessment of competence provides insight into actual performance and allows physicians to identify their own areas of improvement. At Aga Khan University Medical College, evaluation of a teacher's performance by students is routine. Students complete structured evaluation forms at the end of each lecture, which are compiled and shared with the relevant faculty member. Formal peer assessment, however, does not take place.

*Methods:* A peer advice on teaching (PAT) mechanism has been piloted in the Department

of Biological & Biomedical Sciences, the purpose of which is to provide constructive, structured, formative feedback for continuous improvement of teaching skills. PAT involves observation by an ad hoc PAT team comprising of two peers of a teaching session, which is also recorded to give the teacher an opportunity for reflection and self-assessment. Following verbal and written feedback, a post-PAT teaching session is also observed/recorded and feedback provided.

*Conclusions:* The formative nature of the PAT mechanism is critical for acceptance of the process by faculty. To emphasize this, the focus is on “advice” rather than on formal assessment. Reflection is a very important tool to improve critical analysis and lifelong self-improvement. In the PAT feedback sessions conducted to date, a high degree of agreement has been observed between peer and self-assessment.

*Keywords:* Peer assessment, self assessment, reflective practice

### 7.16

#### ALIGNING TEACHING STRATEGIES WITH OBJECTIVES: EXPERIENCE FROM REVIEW OF AN UNDERGRADUATE MEDICAL CURRICULUM

*Kulsoom Ghias, Syeda Kauser Ali, Rashida Ahmed*

*Department of Biological & Biomedical Sciences, Department for Educational Development and Department of Pathology & Microbiology, Aga Khan University, Karachi*

*Introduction:* Regular curricular review is critical for quality management. An internal review of the first two years of an undergraduate program at a private medical college in Karachi, Pakistan, was precipitated by low student attendance in lectures and laboratory sessions and resulting faculty demotivation and frustration. An abundance of unnecessary lectures scheduled at the expense of student self-study and self-exploration time and inappropriate pedagogical approaches were identified as reasons for poor attendance.

*Methods:* An in-depth review of the entire Year 1 and 2 curriculum was initiated with three ad hoc working groups tasked with studying curriculum content, curriculum delivery and assessment. Importantly, a participatory approach was utilized to incorporate faculty and student stakeholders’ input in alignment of teaching strategies with the curricular objectives. *Conclusion:* Through this exercise, it is apparent that streamlining teaching schedules to remove redundancies and using appropriate teaching strategies is important to manage faculty time appropriately and ensure student engagement. Content evolution is inevitable, but should be decided depending on the needs of the discipline, and eventually the programme, rather than individual faculty strengths and interests.

*Keywords:* Curricular review, Teaching strategy, Undergraduate medical education

### 7.18

#### MEASUREMENT OF SELF-EFFICACY USING STUDENT SELF-PERCEPTION AS AN INDICATOR: INSTRUMENT VALIDATION.

*Azam Afzal, Shazia Babar*

*Department for Educational Development, Aga Khan University, Karachi*

*Introduction:* Social cognitive theory states that, the quality of one’s life is to a large extent controllable. Bandura calls this form of objective self-perception in one’s capability to achieve a goal or outcome, self-efficacy. In academics, self-efficacy has been found to translate into academic success and motivation. Students with a strong sense of self-efficacy are more likely to engage in challenging tasks and be intrinsically motivated. These students will put in greater effort in order to meet their learning goals. Students with high self-efficacy also recover quickly from setbacks, and are more likely to achieve their personal goals. One of the outcomes of this study was to determine construct validity of the measurement instrument.

*Methods:* Self-efficacy may be measured by questioning participants on their beliefs about the underlying variables which contribute to its contextual development. 144 students from 3

campuses of Dow University of Health Sciences were given, a 12 item questionnaire from a modified Dundee Ready Education Environment Measure (DREEM) questionnaire which asked about students' social, academic and learning self-perceptions. Items were scored using a 5 point Likert's scale. The analysis for instrument validation consisted of factor analysis, reliability analysis and inter-item and sub-scale correlation.

*Results:* Analysis of the questionnaire item scores revealed, a Cronbach's alpha of 0.721 with subscale reliability being 0.697. Factor analysis revealed 3 components which correspond to the 3 latent variables mentioned earlier. The correlation of the self-efficacy score with academic self-perception and learning perception subscales was 0.79 and 0.83 respectively, individual item correlation varied from 0.2 to 0.68.

*Conclusion:* The instrument is reliable and has construct validity for measuring self efficacy. This instrument will help teachers measure students' self-efficacy and identification of specific areas of development. Its use will help teachers diagnose problem areas for low achieving students. Further analysis of the relationship between self-efficacy score and academic performance is required to evaluate predictive validity is required.

*Keywords:* Assessment, psychometrics, validity

### 7.19 RELATION OF EMOTIONAL INTELLIGENCE AND PERSONAL COMPETENCIES: A MEANS TO FOSTER ACADEMIC EXCELLENCE IN HEALTH SCIENCES

*Fatima Hassan Makhani, Nazia Ali Hussain  
Alumni and School of Nursing & Midwifery, Aga  
Khan University, Karachi*

*Objectives:* This paper aims to highlight the relation between emotional intelligence and competencies of students enrolled in Health Science studies to enhance academia excellence.

*Background:* According to Cherniss (2000), emotional intelligence is "the ability to manage feelings and handle stress and is important for institutional success and problem solving approach". It involves bringing the intellectual

abilities together to solve problem along with individual capabilities to cope with stress during academic studies.

*Methods:* To analyze the issues, comprehensive literature review was carried out to explore the causal relationship of emotional intelligence with problem solving and stress management. Extensive searching of 18 articles from 2005 to 2013, through data extraction from periodical, electronic databases including Google Scholar, Pub Med, Elsevier (Pergamon), National Conferences and Journal of Psychology etc.

*Results:* Literature review highlighted that the institutions, who exercise emotional intelligence within academic studies, are able to help students in problem solving and effective coping from stress through their competencies. This will indeed provide a chance to the students to strive for excellence and give their utmost for institutional development in the long run.

*Conclusion:* The prime focus of institutions concerning higher education is academic development. However, students need more support to acquire healthy and productive lives with academic and career motives. That's why, it is important for institutions, providing higher education, to look into the academic (cognitive) and affective (emotional) domains of studies.

*Keywords:* Emotional intelligence, academic excellence, personal competencies

### 7.20 E-COMPETENCE: A TOOL TO STRENGTHEN COMPETENCIES FROM E-LEARNING TO ENHANCE ACADEMIC EXCELLENCE

*Fatima Hassan Makhani, Sumaira Khowaja  
Punjwani  
Alumni, School of Nursing & Midwifery, Aga Khan  
University, Karachi*

*Objectives:* This paper examines the concerns surrounding the implementation of E-competence into higher education and to strengthen academic excellence through self-directed learning.

*Background:* E-Competence has offered insights into the learning process resulting in environments that are student centered, encouraging students to utilize E-technology for self-directed learning.

Distant learning in academia is denoted as E-competence from E-learning.

*Methods:* Comprehensive literature review was carried out to explore the relationship of E-Competence with self-directed learning to achieve academic excellence. 33 articles were retrieved from sources like periodical, Google Scholar, Elsevier (Science Direct), Research Online, Journal and chapters on E-competence, E-learning and distant learning education from international conferences.

*Results:* From the literature review, it was suggested that institutions who implement E-competence within the academic studies, are able to facilitate learners and mentors in fortifying academic excellence. It is the leading force to inculcate E-competence within academic practice to attain excellence. E-learning is an extension of self directed learning and indeed very important in an era of digital competition.

*Conclusion:* It is very important for academic institutions that are concerning to higher education with distant learning approaches, to gain academic excellence by global educational perspectives by means of technology. The demand for didactic innovation is influenced by the insight that students need a lot more than subject matter knowlknowledge to cope with the growing challenges, rapid transition and diverse need of academia.

*Keywords:* E-Competence, e-learning, academic excellence

## 7.21 PERCEIVED COMPETENCIES AND CHALLENGES OF THE NOVICE NURSES: DEVELOPING ORIENTATION PROGRAM FOR REGISTER NURSES

*Muhammad Nasir Khan, Jacqueline Dias  
School of Nursing & Midwifery, Aga Khan  
University, Karachi*

*Introduction:* Almost every new inexperienced professional during initial months of clinical practice have certain level of anxiety and face enormous challenges to adopt new working environment. This study was designed to identify the perceptions of the novice nurses regarding their

competency level in knowledge and skills and the challenges they were facing.

*Objective:* The aim of this study was to help novice nurses in the initial days of their career and determine the need for developing or improving the orientation program.

*Methods:* The research was undertaken through quantitative descriptive study design by using convenience non-probability sampling to recruit 26 study participants with specific selection criteria from a tertiary care cardiac specialty hospital in Karachi, Pakistan. Data was obtained through a self-developed assessment tool (questionnaire) after pilot testing from 10 % of the participants and analyzed through SPSS version 19.0.

*Results:* The competency level of the novice nurses was identified to be different for various procedures, policies and skills. The study also revealed that novice nurses faced many challenges during the first year of their career which was work load, lack of confidence, lack of communication skills, little knowledge about different procedures, time management and low competency level in performing certain clinical skills.

*Conclusion:* The results indicated the need for improving the already existing orientation program in the organization to help the novice nurses in overcoming their challenges and incompetence.

*Keywords:* Novice nurses, challenges, competencies

## 7.22 EXPERIENCES OF THE PATIENTS, PHYSICIAN AND STAFF REGARDING THE LENGTH OF PATIENT STAY IN PEDIATRIC EMERGENCY DEPARTMENT

*Naureen Hussaini, Jabeen Fayyaz, Munawar  
Khursheed, Junaid Razzak  
School of Nursing & Midwifery and Department  
of Emergency Medicine, Aga Khan University,  
Karachi*

*Introduction:* Measuring patient satisfaction in emergency department serves as an initial step to evaluate the services for a better evaluation.

*Objective:* The objectives of this study were two-fold: 1.To assess the length of stay (LOS) of

pediatric patients in Emergency Department (ED) and 2. To explore the influences of delay in length of stay on the patients' care and satisfaction.

**Methodology:** We evaluate the total length of patient stay (LOS) and identify the factors of prolonged length of patient stay in Pediatric ED. Data were retrieved from the hospital electronic medical record and survey from patient's attendant, pediatrician and nursing staff (n=25) related to length of stay and its influences on the patients' care and satisfaction by using convenience non probability sampling. The study design used was quantitative correlational descriptive design, in which we evaluated the effect of prolonged length of stay on the patients' care and satisfaction level in the Pediatric ED.

**Results:** In pediatric ED weekends were the busiest days. On weekdays, pediatric ED had an increased patient inflow after noon with a slow decline over the morning hours. The average length of stay was 4 to 6 hrs of which 2- 2.5 hrs. was spent waiting for the lab results. The study showed that prolonged length of stay has negatively associated with the patient level of satisfaction.

**Conclusion:** These results demonstrated that delay in the patient stay time during waiting for different procedures and consultations affects negatively the patients satisfaction level.

**Keywords:** Pediatric, length of stay, satisfaction

### 7.23

#### PEER SUPPORTED LEARNING- A MODEL FOR OPTIMISING THE ENVIRONMENT OF MUTUAL HELP TO ENHANCE STUDENT LEARNING EXPERIENCES.

*Rabia Qadeer Malik, Hussain Mahdi  
Department of Biological & Biomedical  
Sciences, Aga Khan University, Karachi and  
University of Limerick, Ireland*

**Introduction:** The use of educational strategies that require students to be more actively involved in learning process is now strongly advocated for third level education; thus shifting the paradigm from a teacher-centred to the

student-centred approach. 'Peer learning' is an educational strategy that refers to students learning with and from their fellow learners (Boud, 2001).

**Objective:** The aim of this study was to develop a peer-learning model and ascertain the feasibility and outcome of engaging student groups to learn and develop study strategies and skills for the subject of Human Anatomy.

**Methods:** Peer groups were formed, incorporating 1st and 3rd year students. A two-day training of senior students/peer leaders was provided. In these sessions peer leaders encouraged students to take responsibility for processing course materials; facilitated review of notes and discussed their difficulties. Student leaders then used various strategies to facilitate students to structure their understanding of content. At the end of twelve weeks, student and the peer leader feedback was collected using two separate questionnaires.

**Results:** An analysis of feedback revealed that peer learning contributed very positively to the learning experiences; not only for student learners but also for peer leaders. Data suggested that through conversations in these sessions students gained confidence in their understanding of the subject knowledge and in communicating the subject information.

**Conclusion:** 'Peer Supported Learning' is an effective model for providing students an opportunity to take initiative and manage their own learning and thus can play an active role in their educational and personal development. Peer learning process can thus be potentially beneficial to all clinical and related education.

**Keywords:** Anatomy, peer learning, peer leaders

### 7.24

#### WELCOMING FUTURE NURSES: PREPARING UNDERGRADUATE NURSING STUDENTS FOR ROLE TRANSITION

*Sahreen Malik Bhanji, Neelam Saleem Punjani  
School of Nursing & Midwifery, Aga Khan  
University, Karachi*

**Introduction:** Preceptorship is a one-to-one relationship of predetermined length between an

expert nurse and a nursing student. During the preceptorship, student nurse learns the roles and responsibilities of clinical nursing in a particular area of practice. The preceptorship model is designed to assist the student in successfully adjusting to and performing his/her new role. This is a student centered approach which assists students in becoming more deeply engaged in patient care by providing more hands on care.

*Objective:* The literature review aims at establishing the significance of preceptorship and its application in clinical practice through the framework proposed by Zilembo & Monterosso (2008).

*Methods:* A comprehensive literature review was performed using various online databases such as PUBMED, CINAHL and Medline. The results were filtered to include the most relevant articles from year 1997 to 2012 including qualitative and quantitative researches and literature reviews.

*Results:* Literature review reveals that, preceptorship model is used worldwide in nursing education to provide a real learning environment and prepare nursing students for a smooth transition. Nursing organizations such as Canadian Nurses Association and The Registered Nurses Association of Ontario promote preceptorship programs as a means of achieving excellence and success in professional clinical practice. Moreover, Preceptorship model is also used by nursing faculty as a part of undergraduate clinical nursing education to enhance students' clinical skills and to bring rigor in their practices. The preceptorship model plays a significant role in providing the nursing students in their final year a comprehensive clinical learning environment to relate their theoretical concepts along with gaining a real world experience. Thus, preceptorship model contributes to effective clinical learning and facilitates the role transition for the undergraduate students.

*Keywords:* Preceptor- preceptee, preceptorship, role transition

## 7.25

### TEACHERS' ACCOUNTS OF THEIR PERCEPTIONS AND PRACTICES OF PROVIDING WRITTEN FEEDBACK TO NURSING STUDENTS ON THEIR ASSIGNMENTS

*Sajid Iqbal, Raisa Gul*  
*School of Nursing & Midwifery, Aga Khan University, Karachi*

*Introduction:* Written feedback facilitates students' learning in several ways. However, the teachers' practice of written feedback may vary due to various factors. This study aimed to explore the nurse teachers' accounts of their perceptions and practices of providing written feedback.

*Methodology:* A descriptive exploratory design was employed in the study. A purposive sample of 12 teachers from nursing institutions in Karachi, Pakistan, participated in the study. Using a semi-structured guide, in-depth interviews were conducted with the participants, between February-May, 2013. The interviews were tape recorded and transcribed verbatim and were manually content analyzed. .

*Findings:* The analysis of findings led to four categories: teachers' perceptions about written feedback, effects of written feedback on students from the teachers' perspectives, teachers' practices of providing written feedback, and factors that affect the teachers' practices of providing written feedback to their students. The findings indicated that although the teachers realize the importance of written feedback and its impact on students' learning, several factors, including teachers' competence and commitment, students' receptivity, and contextual barriers, affected their practices.

*Conclusion:* To actualize the potential power of teachers' written feedback in students' learning, both teachers and institutional administrators need to realize the importance of written feedback. Moreover concerted efforts including teachers' development and policies are required to overcome the factors that negatively influence the practices of written feedback.

*Keywords:* Nurse teachers, written assignments



## 7.26

### 2ND NATIONAL SYMPOSIUM ON RESEARCH IN ANESTHESIA, PAIN AND CRITICAL CARE.

*Sehrish Munir, Farheen Firdous*  
*School of Nursing & Midwifery, Aga Khan*  
*University, Karachi*

*Introduction:* Nurses are the first health care providers to take notice of a patient's report of pain. However, their ability to perform a complete pain assessment is challenging as they come across various barriers, which result in under-treatment of pain.

*Objective:* To identify the barriers faced by nurses in assessing pain of adult post surgical patients in order to manage pain effectively in a timely manner.

*Methodology:* A systemic review comprised of the review of related 20 articles from year 2002 - 2012. We searched the databases CINAHL, Pub Med, Medline and Science Direct.

*Findings:* Literature review revealed a various barriers that hinder nurses from doing adequate pain assessment of post surgical patients. The most common barrier includes deficiency in nurses' knowledge of pain assessment tools. Furthermore, the attitudes and beliefs of nurses related to pain management and lack of time due to high nurse-patient ratio. Lastly, it has also been documented that nurses often doubt patients' verbalization of pain scale and fail to re-assess and document the findings timely. All these barriers result in increased discomfort of patients, longer hospital stay, and amplified financial burden.

*Conclusion:* Thus, to provide best possible patient care, nurses need proper understanding, knowledge, skills and attitudes towards pain assessment so that they are able to assess pain effectively. *Recommendations:* According to literature, a nurse should take initiative to improve her knowledge of pain assessment of post surgical patients. In-service training will help nurses to upgrade the knowledge and skills of appropriate pain assessment in order to reduce discomfort.

*Keywords:* Pain, assessment, nurses

## 7.27

### FAMILY PRESENCE DURING RESUSCITATION: NURSES AND PHYSICIANS ATTITUDES AND PRACTICES

*Shaista Meghani*  
*School of Nursing & Midwifery, Aga Khan*  
*University, Karachi*

*Introduction:* Family presence during resuscitation (FPDR) has remained a controversial issue since early 1980s. Traditionally, FPDR is not encouraged by healthcare providers especially physicians and nurses. Healthcare providers have different opinions regarding FPDR and it is not an extensive practice globally. However it is gaining recognition internationally. Witnessing resuscitation gives chance to the family to see their loved ones before death and facilitates family members to take end of life medical decisions during this emotional event.

*Methodology:* The literature review was done for the period October-December 2012 from various databases such as PUBMED, CINAHL, MEDLINE, Google Scholar and 19 relevant research articles are found ranging from 2001 to 2012.

*Findings:* FPDR has been recognized by patients and their families, as agents of providing support, become source of connectedness and bonding, and facilitating the grieved. Also, studies have revealed that physicians are more reluctant than nurses to family presence during resuscitation. The reasons for exclusion of witnessed resuscitation to prevent psychological trauma or uncertain consequences to the family members, offensive attitude of family members, interruption in care and fear of staff being watched.

*Conclusion:* The practice for giving option and formulating policy regarding FPDR has shown improvement in communication between family and health care providers.

*Keywords:* Family presence, CPR, communication practices, health care providers

## 7.28 NEUROFIBROMATOSIS -A NEUROGENETIC DISORDER

*Shamsa Hadi, Hunaina Hadi*  
*School of Nursing & Midwifery, Aga Khan*  
*University, Karachi*

*Introduction:* Neurofibromatosis 1, named after Dr. Friedrich Von Recklinghausen so also known as Von Recklinghausen disease, is an autosomally dominant neurogenetic disorder characterized by the growth of noncancerous tumors called neurofibromas. It results from the mutation in a gene (17q11.2) which is encoding a protein called neurofibromin. This disease is manifested by café-au-lait spots, freckling, visual impairment, optic glioma, lisch nodule, seizures, headaches, brain tumors (macrocephaly), learning disabilities, mental retardations, bone deformities, pseudarthrosis, increase blood pressure, vomiting, chronic constipation or diarrhea, early or delayed puberty.

*Objective:* To review the published literature so as to create awareness among the people and to decrease the prevalence rate of cases with neurofibromatosis.

*Method:* A comprehensive literature search was conducted through electronic medium to explore the relevant literature. Various databases i.e. Pub med, Google search engines, Science Direct, JPMA and SAGA were used. In addition manual search was also done by accessing available articles in periodic library.

*Result:* The birth incidence of Neurofibromatosis type 1 in 1 in 4000. The features increase in frequency or severity with age and decrease the average life expectancy to about 62 years. Males and females have the same chance of developing the condition. Neurofibromatosis also appears 50% in families with no previous history of the condition. The mutation will not be present in every cell of the person's body, just in some of them. But if it does happen to be in the germ cells (egg or sperm), the person can pass it on to their children. The estimated rate of new NF1 mutations is unusually high, but the basis for this high mutation rate is not known

*Conclusion:* There is no specific treatment for neurofibromatosis however different surgeries are done to remove the tumors but there are chances of redevelopment of tumors at the same site. The psychological support is of great importance in this regards.

*Keywords:* Neurofibromatosis, Mutation, Neurofibromin

## 7.29 EXPERIENCES OF ADOPTING BLENDED PEDAGOGIES IN HEALTH ASSESSMENT COURSE IN POST RN BSCN PROGRAM, AKUSONAM

*Shanaz Hussein Cassum, Jacqueline Dias,*  
*Saleema Allana, Leah Sande*  
*School of Nursing & Midwifery, Aga Khan*  
*University, Karachi and East Africa*

*Introduction:* The increasingly global, technological and online world makes it imperative for educational institutions to re-invent their programs and curricula to reach and teach beyond the traditional methods. Use of the blended learning (BL) pedagogies has become increasingly common in western and developed countries, although there is limited literature in the developing world. To a traditional teacher, adopting BL pedagogies brings its trials as faculty needs to know how to use e learning tools and strategies effectively. While some theory based courses lend themselves well to BL, developing and executing a clinical skills based course (such as health assessment) using blended approaches, presents additional challenges to faculty and students. There is little known about whether faculty and students in a resource constricted context experience a change in learning due to the adoption of BL pedagogies in a lab based course.

*Objective:* This study aimed to identify the experiences of faculty and students related to the design, delivery and evaluation of transforming health assessment course from traditional format to BL approach.

*Methods:* An action research design was used to integrate planning, action and research in the

setting where the change is required. The study sample consisted of year 1 Post RN BScN students enrolled at the Aga Khan University School of Nursing & Midwifery, and the faculty assigned to teach in Health Assessment course. Of the 83 Post RN BScN students and the 6 nursing faculty invited, 53 students and 6 teachers (n= 59) consented to participate in the study. Data about their learning experiences and challenges towards use of BL pedagogies was obtained through focus group interviews, review of course forums and reflections.

*Results & Findings:* revealed five major categories; teacher's capacity, student's motivation, availability of resources, use of multiple active strategies, and contextual factors that influenced how students and faculty adopted to a blended approach in a lab based course. The findings can be the bases for planning, transforming and evaluating other blended courses to promote active engagement and critical thinking of students.

*Keywords:* Blended pedagogy, nursing program

### 7.30 MEDICATION ERRORS BY NOVICE PEDIATRIC NURSES: ANALYSIS OF PROBLEM AND PROPOSED SOLUTIONS

*Shela Akbar Ali Hirani*  
*School of Nursing & Midwifery, Aga Khan*  
*University, Karachi*

*Background:* The pediatric setting and associated dispensing of small quantities of medications presents an opportunity for medication errors that can result in serious consequences for children. Pediatric medication administration is more risky in clinical settings without unit dosage, a common situation in developing countries such as Pakistan.

*Objective:* To propose solutions to pediatric medication errors, this paper uses a problem solving approach.

*Methods:* The clinical issue of pediatric medication errors was analyzed and solutions derived through a three step systematic process beginning with examining case examples of

medication errors followed by a review of the literature to determine causes of pediatric medication errors followed by an informal discussions with pediatric nurses, nurse managers, and nurse educators to seek their opinions when comparing the case examples to published literature to nurse opinion.

*Results and Conclusion:* The primary causes of pediatric medication errors were lack of nurse knowledge, inadequate training, high workload, distraction, and complexity of procedures in pediatric medication administration. The literature review and nurse discussions indicated that the incidents of medication errors among pediatric nurses could be minimized by offering the nurses information on the skills of correct pediatric medication administration. The results indicate the need to better connect nursing theory to nursing clinical practice.

*Keywords:* Medication error, paediatric nurses, theory-practice gap

### 7.31 MOBILE LEARNING IN NURSING EDUCATION: A NEW TECHNOLOGY TOOL TO FACILITATE DISTANCE LEARNING

*Sumaira Khowaja Punjwani, Fatima Khuwaja,*  
*Qudsia Khatoon*  
*Alumni and School of Nursing & Midwifery, Aga*  
*Khan University, Karachi*

*Background:* Nursing education system has advanced from the traditional pedagogical approach to the most modern technology. Nurse academician's contemporary practices now focus more on incorporating innovative teaching-learning strategies into the nursing curriculum. M-learning or mobile technology for learning is one of the technologies that have considerable potential for enhancing nursing education.

*Objective:* This paper aims to elaborate the efficacy of mobile technology to enhance nursing education. *Methods:* A comprehensive Systematic review of literature from 15 research articles from 2004 to 2010 related to use of mobile technology for learning specifically in

nursing education was conducted through electronic medium by using Science Direct, Pub med, and Google and Google scholar search engines. Three review authors independently assessed research article quality and extracted the data.

*Results:* The literature evidently highlights positive impact on the usability of mobile devices in nursing education and also a positive satisfaction of participants with mobile technology. The advantages reported in research studies include easy way of learning and readily portable. However, it was also identified that the issue of wireless connectivity was a major concern. It can help to transform instructors' face to face instruction from didactic lectures to more constructivist practices.

*Conclusion:* Introduction of mobile technology into nursing education will require a significant shift in culture and significant level of training and support. The use of mobile devices as a mode of learning is feasible in nursing education, however further investigation is needed on the use of m-learning.

*Keywords:* Mobile Learning, Nursing Education, Distance Learning

### 7.33 CHILD INJURY PREVENTION SHORT COURSE IN KARACHI, PAKISTAN– LESSONS LEARNT

*Uzma Rahim Khan, Junaid A Bhatti, Shumaila  
Rupani, Rakshinda Mujeeb  
Department of Emergency Medicine, Aga Khan  
University, Karachi*

*Introduction:* Department of Emergency Medicine (WHO Collaborating Center for Emergency and Trauma Care) in collaboration with Department of Continuing Professional Education, Aga Khan University organised a two day course "WHO Prevention of Child Injury". The purpose of this course was to describe epidemiologic trend and understand principles of child injury prevention methodology.

*Methods:* Pretest and posttest were taken to assess the impact of course in improving knowledge. The two day workshop was organized on 17th and 18th

March the topics/ presentations were followed by different group and individual activities. The Wilcoxon signed rank test was applied to see the difference in pre and posttests.

*Result:* There were a total of 25 participants in the course. Most of them were from Karachi while seven participants were from other cities including Islamabad, Peshawar, Lahore, Umerkot and Sukkur. The participants included master candidate in epidemiology and biostatistics (n=5), research officers (n=4), police officer (n=1), pediatrician (n=2), health department administrators (n=6), forensic expert (n=2), and public health professionals (n=5). The mean score in pretest was 54.6%  $\pm$ 14.1% while posttest revealed a mean score of 66.8%  $\pm$ 12%. (p -value of <0.029). On a scale of 1-5, 60% and 70% of the participants evaluated this workshop on 4 points.

*Conclusion:* This workshop had a positive impact on knowledge of participants related to injury prevention principles and methodology. Such trainings/ course should be held on regular basis or incorporated in master level course to highlight the neglected injury area.

*Keywords:* Emergency Medicine, Teaching, Pakistan

### 7.34 ASSESSING INTERPROFESSIONAL CONTINUING EDUCATION AND PLANNING AHEAD

*Farhan Vakani  
Department of Continuing Professional Education,  
Aga Khan University, Karachi*

*Background:* IPE model of continuous learning has often been overlap, variedly defined, perceived and interpreted in many instances both 'within' and 'across' health care professionals and by the providers.

*Objective:* The purpose of this survey is to check the concept of Interprofessional education (IPE) to continuing education among working physicians.

*Methods:* The study assessed 150 randomly selected working physicians of the Aga Khan University Hospital. A very short questionnaire based on one-best type was designed and piloted to check its completion within 90 seconds. Four quick questions were dedicated at C1 & C2 level

focused to check the knowledge and understanding of the physicians to IPE.

*Findings:* The results showed 100% response rate. Majority (i.e. > 80%) of the respondents were familiar with the term IPE. The next three items were mainly focused to check the understanding of the physicians regarding the IPE ability in continuing education to improve communication, teamwork, healthcare coordination and quality (n=69 i.e. 46%); impact of IPE on patient-centered care and physician care (n=89 i.e. 59%); and its contextual understanding (n=40 i.e. 27%).

*Research limitations/implications –* The study is subject to desirability bias. The second limitation was the single university setting that restricts the generalizability of the results.

*Practical implications –* The results and recommendations of this survey will definitely give a kick-start to CME organizers within Pakistan to promote and address the learning needs and professional gaps through this interdisciplinary IPE model.

*Originality/value –* There is no other study in the Pakistani context that assesses the concept of IPE model to continuing education among working physicians and hence this paper is of high interest.

*Keywords:* Interprofessional education; continuing education; physicians; survey

### 7.35

#### THE INTERNAL MEDICINE RESIDENCY PROGRAM: FOUNDATIONS WEAKENED DUE TO RISING TREND OF GOING INTO SUBSPECIALTIES AFTER INTERMEDIATE MODULE

*Aysha Almas, Syed Ahsan, Quratulain Naeem and Muhammad Tariq*

*Section of internal Medicine, Department of Medicine, Aga Khan University, Karachi*

*Introduction:* With the introduction of intermediate module (subspecialty tract) more and more residents get attracted to subspecialty very early in their careers. This has led to increased dropout rate from internal medicine residency program

*Objective:* To report the trend of recruitment, graduation and resignations from internal

medicine residency program and also to identify the most common reason behind these resignations in the past six years.

*Material and Methods:* It was a cross sectional study. Residents were those who had done MBBS, one year house job, had cleared FCPS I or MRCP I in medicine, and successfully cleared the test and interview in medicine residency OR Resident medical officers who were recruited in replacement of residents. Resignations were defined as inability to continue job due to personal, joining subspecialty and training/job abroad with or without notice period. The mean number of new R1 and graduating residents is 23 % (12). All internal medicine residents who were recruited in internal medicine residency program of Aga Khan University from 2007 to 2012 were included. Data of internal medicine residents from year 2007 to 2012 was collected from PGME and human resource department of Aga Khan University Hospital Karachi. Details about resignations were collected from HR and data maintained with the program officer of department of medicine. Microsoft office Excel was used to calculate means and percentages and plot graphs.

*Results:* A total of 52 residents each year were included every year from 2006 to 2007. The % (n) of R1 recruited were; 28(14) in 2006, 36(18) in 2007, 24(12), 32(12) in 2008, 32(16) in 2009, 30(15) in 2010, 26(13) in 2011 and 40(20) in 2012. The % (n) of graduating residents each year was ; 12(6) in 2006, 6(3) in 2007, 14(7) in 2008, 16(8), 18(9) in 2010, 20(10) in 2011 and 8(4) in 2012. The total % (n) of resignations were: 19.2(10) in 2007, 19.2(10) in 2008, 16(30.7) in 2009, 21.1(11) in 2010, 30(16) in 2011 and 26.9(14) in 2012. The reasons for resignations in % (n) were (a) due to joining subspecialty was 7.6(4) in 2007, 3.8(2) in 2008, 11.5(6) in 2009, 13.4(7) in 2010, 17.3(9) in 2011 and 19.2(10) in 2012. (b) due to training abroad/job was 1.9(1) in 2007, 11(6) in 2008, 11.5(6) in 2009, 3.8(2) in 2010, 1.9(1) in 2011 and 3.8(2) in 2012. (c) due to personal issues was 1.9(1) in 2007, 3.8(2) in 2008, 7.6(4) in 2009, 3.8(2) in 2010, 11.5(6) in 2011 and 3.8(2) in 2012

*Conclusion:* In the last few years the number of resignations has significantly increased in the internal medicine residency program, leading to

less number (below the bench mark) of graduating residents and increase hiring of R1 (above the bench mark). The most common cause of resignations was joining subspecialty, followed by going abroad for training/job. This trend of decreasing number of internist and increasing number of subspecialists is a cause of concern. It is time to reflect whether common man in Pakistan needs more internist or subspecialists.

### 7.36 FACTORS INFLUENCING THE MIGRATORY PATTERNS OF INTERNAL MEDICINE GRADUATES

*Muhammad Tariq<sup>1</sup>, Nida Sajjad<sup>2</sup>, Afshan Hasan<sup>1</sup>*  
*<sup>1</sup>Section of Internal Medicine, Department of  
Medicine and <sup>2</sup>Medical Student, Aga Khan  
University, Karachi*

*Background:* The phenomenon of “brain drain”, has been long recognized; scheming interventions to address it has been constrained by a limited understanding of this phenomenon, usually stemming from the unavailability of detailed data.

*Objective:* To identify the factors influencing the decision-making of Internal Medicine graduates, with regards to practicing in Pakistan or abroad.

*Method:* This is an ongoing cross-sectional study, being conducted at the Aga Khan University Hospital, Karachi. A total of 140 internal medicine graduates, since the commencement of the program in 1989, will be invited to participate in the study. The questionnaire is aimed to survey the factors influencing the decision-making of Internal Medicine residency program graduates, with regards to practicing in Pakistan or abroad and to determine the participants’ migratory intentions.

*Results:* The preliminary results for this study have been obtained from 37 respondents. Out of the 37, 27 of the respondents were still in Pakistan and 73% of them stated that they were likely to emigrate even though 96% of graduates were satisfied with their training at AKU. The most common reasons for emigrations cited

were safety and security issues (60%), children’s future (26%) and financial concerns (19%). With respect to factors influencing their decision to work in Pakistan, Family ties and Spouse’s interest were found to be the major influencing factors while reasons such as lack of opportunities abroad and advice from peers were the least influencing factors.

*Conclusions:* Physician migration requires timely intervention from the concerned authorities. If considerable measures are not taken, serious consequences follow, which may pose a threat to the healthcare system of the country.

*Keyword:* Brain drain, physician migration, internal medicine

### 7.37 TEACHING CLINICAL THERAPEUTICS IN EARLY CLINICAL YEARS: IS IT WORTH IT?

*Sara Sajid, Tabassum Zehra, Azam Afzal*  
*Section of internal Medicine, Department of  
Medicine, Aga Khan University, Karachi*

*Introduction and Background:* Learning clinical pharmacology and therapeutics in early clinical years can be very challenging as students find it difficult to apply their pharmacological knowledge to individual patients in a clinical setting. Final year students base their choice of drugs on example provided by their teachers mainly because of a lack of experience. Application of Clinical Therapeutics is an essential and important skill that should be taught in early clinical years to teach students rational drug selection.

The students of AKU attend pharmacology lectures in preclinical years. In order to introduce the medical student’s to rational use of common drugs, clinical therapeutics session was introduced in the General Medicine clerkship (Year 3). In this way they will be able to gain knowledge sequentially and in a learning context.

*Objectives:* To evaluate the utility of clinical therapeutic sessions in early clinical years.

*Method:* Retrospective cohort study was conducted. The evaluations of each specialty session were looked into. The students filled a questionnaire of the sessions on a rating scale.

**Results:** Descriptive analysis was done, n= 117. SPSS version 19 was used to analyze the data 76% (n=89) of the students rated the utility of the sessions to be around 76%, whereas 14% (n=17) of the students rated the usefulness to be around 60% and 9% (n=11) found it useful around 85%.

**Conclusion:** Presenting students with clinical therapeutic problems early during undergraduate training will not only give them a chance to gain experience in solving medical problems but will also give meaning to what they are studying as opposed to merely reproducing what they learn or copying what they are told.

**Keywords:** Therapeutics, clinical pharmacology, undergraduate medicine

### 7.38

#### CURRICULAR ENHANCEMENT BASED ON TARGETED NEEDS ASSESSMENT: EXPERIENCE OF THE UNDERGRADUATE INFECTIOUS DISEASE CLERKSHIP AT THE AGA KHAN UNIVERSITY MEDICAL COLLEGE

*S. Faisal Mahmood, Sara Sajid*

*Section of Internal Medicine, Department of Medicine, Aga Khan University, Karachi*

**Introduction:** Infectious diseases (ID) are one of the most important causes of morbidity and mortality in developing countries. Despite this, ID teaching tends to be unstructured in most undergraduate medical curricula. Bridging between the preclinical and clinical years can also be a problem.

**Methods:** Using Kern's Six Step Approach, the undergraduate ID clerkship curriculum was evaluated. The learning objectives, teaching and learning strategies and student assessments were reviewed. Student and faculty feedback were also included to perform a targeted needs assessment.

**Results:** In our institution, a 2 week ID /microbiology clerkship was present in the 3rd year of MBBS training; the students spent the mornings in microbiology lab and afternoons on ID rounds. This rotation was adjacent to a 4 week Internal Medicine rotation.

Microbiology teaching in the lab was well-received by the students. However, major discrepancies were identified between learning

objectives, the learner level, the complexity of ID cases and student assessment. Feedback suggested that students were unable to follow the complex ID consult patients and that the brief rotation precluded in-depth teaching.

The rotation was restructured and integrated with the Internal Medicine rotation. Cases clerked by the students in Internal Medicine rounds were presented weekly (8 sessions) in ID CPC (Clinico-pathological conference) along with group discussions on predefined topics. In this way the essential learning objectives regarding common infections were addressed.

Microbiology sessions enhanced the knowledge gained in pre-clinical years and the ID CPC sessions provided a platform to apply this knowledge to patients with common infections nested in the Internal Medicine service. Unexpected advantages included enhanced internal medicine teaching during these sessions as well as informal assessment by the ID faculty of the management of infections in the medicine service.

**Conclusions:** Targeted need assessments placed in the context of the existing curricular structure, can achieve meaningful enhancement of undergraduate teaching.

**Keywords:** Curricular enhancement, infectious disease, clerkship, Kerns approach

### 7.39

#### EVALUATING THE EFFECTIVENESS OF A FORMATIVE LEARNING INTERVENTION IN INTERNAL MEDICINE RESIDENCY; EXPERIENCE AT A UNIVERSITY HOSPITAL IN KARACHI

*Muhammed Tariq, Tabassum Zehra, Azam Afzal, Aysha Almas, Afshan Hasan, Amber Sabeen, Mehmood Riaz*

*Section of internal Medicine, Department of Medicine, Aga Khan University, Karachi*

**Introduction:** For any training program there should be a process for identifying learners' deficiencies in performance and an opportunity to improve before being assessed. This is commonly deficient in post-graduate training in Pakistan where the focus lies on summative assessment.

**Objective:** To evaluate the effectiveness of an educational intervention to improve candidates' performance in residency certifying assessment.

**Methodology:** Intervention comprised of extensive FCPS II course for residents comprise of two components, theory and clinical course, each component comprising of two weeks duration and took part in a mock examination in which the standard was set higher than the actual certifying assessment.

Learners were given detailed, verbal feedback about their performance and encouragement. Kirkpatrick's Model was used to evaluate the intervention.

**Results:** Results of analysis of the quantitative data showed that the questionnaire had a high reliability ( $\alpha=0.96$ ). Residents who completed the course reported that their expectations were met in terms of Integrating the past and current clinical information to arrive at a problem oriented diagnosis, . Counseling and educating patients, applying the knowledge of the basic clinical and behavioral sciences in developing critical thinking. The clinical environment provided helped the residents in enhancing their clinical competence (medical knowledge, clinical skills and professional attitude) and gave an avenue to develop illness scripts into their minds

**Conclusion:** Residents who completed the course showed an increase their knowledge with moderate retention of information. Most residents believe that the course is important, and requested such courses as more often. Further data on their postgraduate exam performance is awaited for achieving intermediate and long term outcomes.

**Keywords:** Assessment: Feedback, medical education, post graduate education, teaching

#### 7.40

##### PSYCHOMETRICS OF A TOLL TO ASSESS COMPETENCIES OF RESIDENTS IN DERMATOLOGY

*Sadia Masood\*, Sara Sajid, Saadia Tabassum  
Section of internal Medicine, Department of  
Medicine, Aga Khan University, Karachi*

**Background:** There is increasing demand of dermatologists and dermatological procedures these days and along with increased demand the assessment of dermatological surgical skills is now an important part of residency. Micro dermabrasion is nowadays a very common procedure used for multiple skin disorders

.Dermatologist should be properly train in this procedure. There is no tool available to assess the competencies of residents regarding Micro dermabrasion. We developed an assessment tool for assessing the skills in this procedure.

**Methods:** Tool is designed for the procedure of micro dermabrasion. It comprise of 26 items. The selected scale was juster scale. In order to ensure the construct validity of the tool it was looked whether it is able to assess the competence of a trainee in dermatology regarding the use of dermabrasion. The items were reviewed and further elaborated by content experts for content validity. For predictive validity it was looked into whether the tool has very high face validity and whether tool later predict the overall performance of the residents in dermatological procedures. Cronbach's  $\alpha$  was applied to all items, those items which were increasing the errors were removed. For Inter rater reliability tool was assessed by multiple raters. We did multiple test retests to measure the validity and reliability.

**Results:** The tool has good face validity, appropriate construct validity. It has good internal consistency and inter rater reliability. The standardization of the tool was done by Angoff method,

**Conclusions:** There is no assessment tool available globally to assess the competency regarding micro dermabrasion. The problem should be fixed by budding a specific measurement scale which will enhance the reliability and validity of the procedure and also augment the competency of our future dermatologists.

**Keywords:** Microdermabrasion, Assessment. Skills

#### 7.41

##### SIMULATED PATIENT'S FEEDBACK REGARDING FINAL YEAR END OF TERM EXAMINATION IN MEDICINE AT AGA KHAN UNIVERSITY

*Muhammad Junaid Patel, Tabassum Zehra,  
Azam Afzal, Sonia Yaqoob, Kiren Habib  
Section of internal Medicine, Department of  
Medicine, Aga Khan University, Karachi*

**Introduction:** Assessment is an integral part of any medical university. Traditionally, real



patients were considered indispensable in medical training. Recent advances in health education coupled with overburdened health care systems have steered to the introduction of the relatively newer concept of “simulated or standardized patients” (SP). Simulated patients (SPs) are used worldwide and here at Aga Khan University as well. They are specifically trained according to examination need and used as simulators during end of term examinations here at Department of Medicine, AKU. It is imperative to understand the perspective of all stakeholders (360 evaluations).

*Purpose:* The purpose of our study was to understand the perspective of the SPs regarding the process of end of term examination (EOT) of final year students rotating in medicine here at Aga Khan University (AKU).

*Method:* A cross sectional survey was conducted amongst SPs participating in the final year EOT examination of the department of medicine at AKU from November 2012 to February 2013.

*Results:* The information was analyzed using SPSS. Descriptive statistics were inferred. n= 26 Majority of SPs were recruited by the Dept. for Educational Development (68.8%), work as SPs 1-3 times a month (65.2%), with an average session being 5-8hrs (56.3%). Most SPs (53.1%) were satisfied with the training provided to them.

*Conclusion:* Simulation has been proven to be a tremendous tool for healthcare educators, in that it allows students to achieve these goals without our patients being put at risk. The use of simulated patients for undergraduate assessment has become well established. The SPs were able to provide feedback to the organizers from a patient’s perspective immediately after a simulated clinical encounter.

*Limitation:* The original instrument was translated into another language. It is reported that translating an instrument always involves the risk that the original idea expressed in an item may not be conveyed fully and accurately.

*Keywords:* simulated patients, feedback, undergraduate medical education

## 7.42

### WORKPLACE LEARNING AND THE APPLICABILITY OF COGNITIVE APPRENTICESHIP MODEL IN INTERNAL MEDICINE WARD ROUNDS

*Muhammad Tariq, Syed Ahsan, Quratulain Naeem*

*Section of internal Medicine, Department of Medicine, Aga Khan University, Karachi*

Workplace provides context for learning. Collins et al. introduced “cognitive apprenticeship” as an instructional model for situated learning. Cognitive apprenticeship focuses on content, methods, sequencing and sociology as the four principle dimensions. In a study conducted by Tariq et al. (2010), on medical students and postgraduates, 55% thought the ward rounds were mainly service-oriented, only 4.5% believed teaching oriented, whereas 40% considered balanced service/teaching oriented rounds.

The cognitive apprenticeship model enhances learning in clinical practice and in the internal medicine ward rounds. There is sparse data available on application of cognitive apprenticeship model in clinical setting. We therefore would like to evaluate the effectiveness of cognitive apprenticeship model in internal medicine ward rounds. Our second aim is to evaluate the impact of this model in making the ward rounds to be a balanced service/teaching activity.

*Methods:* The situation of learning in our study is the attending physician’s ward rounds. The type of workplace learning used in this concrete situation (internal medicine ward rounds) is a situated learning where learner learns by solving problems in an environment in which they apply their knowledge and skills.

*Results & Discussion:* Clinical presentation skills is learnt & taught by coaching method. In addition medical students and junior residents learn clinical presentation skills by observing their senior residents. Scaffolding also plays a significant role. The teacher supports the trainees and gradually reduces the support as the student/resident become more competent. Moreover, increasing complexity & diversity of

cases as the trainee become more senior especially with respect to residency, improves the clinical problem solving ability.

*Conclusion:* With the above analysis we have observed the practicality of cognitive apprenticeship model in ward rounds. The balance between teaching & service can be achieved by applying apprenticeship model. We therefore propose the use of this model in clinical practice in order to maximize the benefits to the students/ residents. Further research is needed to evaluate the usefulness of this model.

*Keywords:* Cognitive apprentice, workplace learning

#### 7.43 PROFESSIONALISM IN UNDERGRAD MEDICAL EDUCATION: BLACK AND WHITE OF THE GREY ZONE

*Azam S. Afzal, Junaid Patel, Syeda Kauser Ali,  
Tabassum Zehra, Sara Sajid, Saeed Hamid  
Education, Department of Medicine, Aga Khan  
University, Karachi*

*Background & Objectives:* Professional behavior and professionalism is a construct that is often present in a curriculum but its assessment is often challenging. This study was done to explore the construct validity related evidence of professional behavior in the assessments used for assessing student performance in the undergraduate medicine clerkship program at Aga Khan University (AKU).

*Methods:* The assessments scores of students 167 students from two consecutive cohorts were collected. Exploratory and confirmatory factor analysis was conducted to identify underlying constructs assessed by clerkship assessments; regression for direction of causality; and a multi-trait multi-method matrix for construct validity.

*Results:* It was found through factor analysis, that the primary construct which the Student Continuous Assessment Form (SCAF) assesses is professional behavior. The assessment instrument used for assessing professional behavior has reliability that was moderate

(0.61). Regression found that 3<sup>rd</sup> year scores of this attribute were predictive for final year with step wise increment. Construct validity was determined by applying the Campbell and Fiske criteria to a multi-trait multi-method matrix.

*Conclusions:* The assessment of professional behavior is highly subjective and susceptible to errors. Comparing with similar instruments like the In-training evaluation report (ITER) used at the University of Calgary, the SCAF also found the convergence of item scores to a single construct. Possibly halo, Hawthorne and Rosenthal effects are at play. Professional behavior is an essential component of the curriculum and based on our findings it is seen to develop over the clinical years.

*Keywords:* Assessment, psychometrics, construct validity

# Hematologic and Oncologic Diseases

## 8.1 FREQUENCY OF TP53 GENE MUTATION IN PATIENTS WITH CHRONIC LYMPHOCYTIC LEUKEMIA

*Hira Qadir, Salman Naseem Adil*  
Department of Pathology & Microbiology, Aga  
Khan University, Karachi

**Introduction:** The p53 tumor suppressor gene mutations occur in 10% of Chronic lymphocytic Leukemia patients at diagnosis. It is associated with advanced stage and with progression of CLL to aggressive disease. Patients with this mutation either do not respond to conventional chemotherapy or have a short lived response. Current diagnostic guidelines suggest to screen CLL patients for deletion of 17p containing the TP53 gene. Considering possible poor prognosis, patients with TP53 mutation should be considered for alternative treatment approaches. However, there is no local study on TP53 mutations in chronic lymphocytic leukemia to date. This study will help in risk stratification of CLL patients in our population.  
**Objective:** To determine the frequency of Tp53 gene mutation in patients with chronic lymphocytic leukemia.

**Methods:** This is cross sectional descriptive study, currently being conducted at clinical laboratory, section of hematology and FISH technique is being used at section of molecular pathology laboratory, AKUH. All newly diagnosed cases of chronic lymphocytic leukemia are included in this study. Total calculated sample size is 71.

**Results:** This is an ongoing study and we have included 24 patients in our study so far. Out of these 5 (20.8%) were found to be TP53 mutation positive. 7 females were tested out of which 1 (14.2% ) was positive. 4 (23.5% ) males were TP53 mutation positive out of 17.

**Conclusion:** Frequency Tp53 mutation in our population is comparable to western countries

**Keywords:** Chronic lymphocytic leukemia, Tp53 gene mutation, FISH

## 8.2 ANDROGEN RECEPTOR: A POTENTIAL PROGNOSTIC MARKER IN pAKT- POSITIVE/pPTEN-NEGATIVE SUBGROUP OF BREAST CANCER PATIENTS

*Aisha Sultana, Romana Idress, Zulfiqar Ali Naqvi,  
Iqbal Azam, Shaista Khan, Anwar Ali Siddiqui, El-  
Nasir Lalani*

Departments of Pathology & Microbiology,  
Community Health Sciences, Surgery and  
Biological and Biomedical Sciences, Aga Khan  
University, Karachi

**Introduction and Objectives:** To predict BCa patient's survival, clinicians rely on conventional prognostic indicators such as estrogen (ER), progesterone (PR) and HER-2 receptors. Importance of androgen receptor (AR) as an independent prognostic marker in Pakistani women with breast cancer (BCa) remains unexplored. Our aim was to identify role of AR, its upstream regulator (pAkt) and target gene (pPTEN) as independent prognostic markers in patients with invasive BCa.

**Methods:** Immunohistochemical expression of AR, pAkt and pPTEN was determined in sections cut from blocks of formalin fixed paraffin embedded (FFPE) tissues derived from 200 patients with invasive BCa. Association of AR, pAkt and pPTEN with clinicopathological parameters and survival was determined by Chi-square ( $\chi^2$ ) and log rank test, respectively. Cox proportional hazard models were obtained to identify factors independently associated with prognosis.

**Results:** Expression of AR, pAkt and pPTEN was observed in 47.5%, 81.3% and 50.6% of patients, respectively. AR expression was positively associated with age, grade II tumors, expression of ER, PR and endocrine therapy while no association was found with tumor size, lymph node involvement and HER2 status. Women with AR-positive tumors had significantly better OS (Mean OS= 8.3 years; P=0.047) and 71% lower risk of death compared to women with AR-negative tumors (Mean OS= 5.6 years). Patients with AR and pPTEN co-expression had better OS (P=0.049) compared to patients with AR/pPTEN negative tumors. In pAkt-positive/pPTEN-negative group, expression of AR was significantly associated with better survival as compared to patients with AR-negative tumors (P=0.05).

**Conclusions:** Expression of AR was positively associated with favorable clinicopathological characteristics and better outcome irrespective of tumor size and HER2 status. In pAkt-positive/pPTEN-negative tumors, patients with AR-positive tumors had better survival hence AR could be used as a potential prognostic marker in this subset of patients.

**Keywords:** Breast cancer, androgen receptor, Pakistani women

### 8.3 RISK FACTORS ASSOCIATED WITH ANTHRACYCLINE INDUCED CARDIAC DYSFUNCTION IN PEDIATRIC PATIENTS

*Abdul Sattar Shaikh, Muhammad Matloob Alam,  
Shazia Samad Mohsin, Mehnaz Atiq  
Department of Paediatrics & Child Health, Aga  
Khan University, Karachi*

**Introduction and Objective:** Anthracyclines have significant impact on outcome in many pediatric chemotherapy protocols and therefore remain the mainstay of treatment. The aim of this study was to identify the risk factors for anthracycline induced cardiac dysfunction in pediatric oncology patients.

**Methodology:** We performed a prospective cohort study during July 2010- Jun 2012 at Aga Khan University Hospital, Karachi, Pakistan. All pediatric oncology patients aged 0 to 16 years, who received anthracycline as a part of their chemotherapy protocol and remain in regular follow up for at least 1 year post chemotherapy, were included for final analysis.

**Results:** Out of 110 patient, 75 (66%) were males and mean age was 74±44 months. ALL (n=70, 64%) was the most common primary diagnosis followed by lymphoma (n=19; 17%) and AML (n=12, 11%). Doxorubicin alone or in combination was used in (n=94, 85%) of patients and cumulative doses <300mg was used in (n=95; 86%) children. children n=24 , 22%) received radiation therapy as per protocol and sepsis were observed in 47 (43%) cases. Post anthracycline, 15 (14%) children had cardiac dysfunction within a month, out of them 10/15 (67%) had isolated diastolic dysfunction, while 28 (25%) developed dysfunction within a year. Children had pericardial effusion (n=19 17%), 11 expired and

out of them 7 had significant cardiac dysfunction. Cumulative dose >300mg/m<sup>2</sup> (p <0.001; AOR 2.3), radiation therapy (p= 0.009; AOR 3.5) and sepsis (p=0.002; AOR 2.6) were found to be independent risk factors associated anthracycline induced cardiac dysfunction. At univariant level use of daunorubicin alone or in combination therapy (p < 0.001, OR: 7) and mode of delivery (p 0.048, OR 9.7) were also found statistically significant.

**Conclusion:** Anthracycline induced cardiac dysfunction is mostly related to cumulative dose > 300mg/m<sup>2</sup>, radiation therapy and sepsis. Regular long term follow up with cardiologist is the key point for early diagnosis and therapy for a long term survival.

**Keywords:** Anthracycline, Cardiac dysfunction, Pediatric Oncology

### 8.4 THE EFFECT OF AGE AND CLINICAL CIRCUMSTANCES ON THE EFFECT OF RED BLOOD CELL TRANSFUSION IN THE CRITICALLY ILL PATIENTS

*Andre Dejam, Brian E. Malley, Shinhyuk Park,  
Saira Samani, Zahra Aziz Samani, Duane S. Pinto,  
Leo A. Celi  
Beth Israel Deaconess Medical Center,  
Boston, USA, Harvard-MIT Division of Health  
Sciences & Technology, Cambridge, USA, Mount  
Auburn Hospital, Cambridge, USA and Aga Khan  
University, Karachi*

**Introduction:** A randomized trial more than a decade ago suggested that a conservative RBC transfusion practice reduces mortality in critically ill patients. In subsequent studies, RBC transfusion has been associated with adverse, neutral, or protective effects on mortality and morbidity. We hypothesize that these varying results stem from a complex interplay between transfusion, patient characteristics, and clinical context. Specifically, we aim to test whether age, comorbid conditions, and clinical context modulates the effect of RBC transfusion on clinical outcome.

**Methods:** We used the MIMIC-II database (v.2.6) to conduct a retrospective cohort study of 9,809 patients. The effect of RBC transfusion on 30-day mortality in critically ill patients was assessed with

1-year mortality as a secondary outcome. A previously validated propensity score model was used to calculate propensity scores for the entire cohort. Logistic regression analysis using the propensity score as a covariate was then performed with 30-day or 1-year mortality as the dependent variable.

*Results:* Propensity score matching yielded 6,328 patients split evenly into transfused and nontransfused groups. RBC transfusion did not change 30-day or 1-year mortality in the entire cohort and in the matched subcohort. Younger patients (age < 55 years) who received RBC transfusion had worse outcomes than controls (OR 1.71, p<0.01). Conversely, older patients (age > 75 years) receiving RBC transfusions had a lower 30 day and 1 year mortality (OR 0.70, p<0.01).

*Conclusion:* RBC transfusion is not uniformly associated with worse outcome and in some patient populations is linked to decreased mortality.

*Keywords:* RBC transfusion, morbidity, critically ill patients

## 8.6 QUANTIFICATION OF SPINAL CORD RT DOSES IN NASOPHARYNGEAL CANCER TREATED VIA 3DCRT TECHNIQUE

*Asmara Waheed, Bilal Mazhar Qureshi, Ahmed Nadeem Abbasi, Nasir Ali*  
*Department of Radiation Oncology, Aga Khan University, Karachi*

*Introduction and Objective:* To report the maximum, minimum, mean and 1% of the total dose that is delivered to the spinal cord in definitive treatment of patients of Nasopharyngeal cancers using 3DCRT Technique.

*Methods and Material:* A retrospective study is being conducted on CDCRT plans of NPC patients treated between 2007 to 2013. A total of 45 patients plans were reviewed who were treated radically with CCRT using 3DCRT technique. Total radical doses delivered were in the range of 66-74 Gray. The range of spinal cord doses were analyzed using data extracted from approved plans using Dose Volume Histogram. Maximum, mean and 1% of total

dose delivered to spinal cord during the entire treatment was analyzed. In order to comply with the concepts of PRV (Planning Risk Volume) we have adopted to mark the spinal canal instead of spinal cord for planning purposes. As a matter of extra precaution another percentage level was introduced, as 1% dose level, which was also documented and analyzed.

*Results:* The ranges of maximum, mean and 1% of spinal canal doses were found to be (49.99Gy to 43.08Gy), (41.66Gy to 13.11Gy) and (39.73Gy to 49.75Gy) respectively. The maximum, mean and 1% doses of all 45 patients was 46.53Gy, 27.38Gy and 44.74Gy.

*Conclusion:* A Radical course of RT can be easily delivered in NPC via 3DCRT keeping spinal cord doses within acceptable tolerance level.

*Keywords:* spinalcord, dose volume histogram, nasopharyngeal cancer

## 8.7 ESTIMATING WINDOW PERIOD BLOOD DONATIONS FOR HIV-1, HCV AND HBV BY NUCLEIC ACID AMPLIFICATION TESTING IN SOUTHERN PAKISTAN

*Bushra Moiz, Tariq Moatter, Usman Shaikh, Salman Adil, Natasha Ali, Farheen Mahar, Naseem Shamsuddin, Mohammad Khurshid*  
*Departments of Pathology & Microbiology and Oncology, Aga Khan University, Karachi*

*Background:* Recently, strategic planning is initiated by National Blood Transfusion Services Pakistan to improve its blood bank facilities. Emphasis is placed on appropriate screening of blood products. Located in Southern region, Aga Khan University Hospital is a 700- bedded tertiary care academic institute with comprehensive blood banking. Screening of blood donors was based on verbal screening and serological testing till date. Additionally, the need of implementing nucleic acid testing was considered in 2011 because of an upsurge in hepatitis epidemiology.

*Objective:* The aim of this study was to analyze the efficacy of this additional donor screening program and to evaluate the impact of NAT on the yield and residual risk of transfusion-transmissible viral

infections (TTVIs). Study design and Methods: A total of 42830 blood donors collected between 2011 and 2012 were screened for routine serologic assays. Only serologically negative donors [n=41304] were tested for nucleic acid testing. The frequency of viral infections was evaluated through serological techniques and NAT yield for viral agents was estimated for computing window period donors. Residual risk per million donors was computed for viral infections in sero-negative blood donors.

*Results:* Serological work up showed 1571 abnormal screening results in 1526 blood donors with following observations. anti-hepatitis C antibodies [n=708], HBsAg [n=555], anti-HIV antibodies [n=29], malaria [n=30], VDRL [n=249] and co-infection [n=45]. Following 36 NAT-reactive samples were identified: HIV-1=1, HCV=27 and HBV=7. Incident rate/105 donors were highest for HCV [453.3] followed by HBV [171.5] and HIV [72.2]. Calculated residual risk per million donors was highest at 1 in 10,900 for HBV, intermediate at 1 in 13,900 for HCV and least at 1 in 62,600 for HIV.

*Conclusion:* Incidence rates and estimated residual risk indicate that the current risk of transfusion transmitted viral infections attributable to blood donation is relatively high in the country. The study recommends the parallel use of both serology and NAT screening of donated blood in countries that have high seroprevalence of these viral infections.

*Keywords:* Blood transfusion, viral safety, window period

### **8.8** PERIOPERATIVE MANAGEMENT OF CARDIAC SURGERY PATIENT WITH IMMUNE THROMBOCYTOPENIC PURPURA

*Amarlal Gangwani, Mohammad Hamid  
Department of Anaesthesiology, Aga Khan  
University, Karachi*

We report a case of 58-year-old male patient with immune thrombocytopenic purpura (ITP) who underwent coronary artery bypass grafting (CABG) and aortic valve replacement (AVR)

surgery. Cardiac surgery itself is known to be associated with increased risk of bleeding mainly due to extracorporeal circulation. It is also associated with higher incidence of blood products transfusion. Bleeding risk is increased further in patients who suffered from immune thrombocytopenic purpura (ITP). However, different treatment plans have been suggested and used, such as tranexamic acid (TXA), aminocaproic acid, platelet transfusion, splenectomy and immunoglobulin. We use steroids, tranexamic acid bolus as well as infusion combined with platelet, and FFPs transfusion in the operating room to reduce intraoperative and postoperative bleeding complications for a patient with ITP. A thorough preoperative assessment and intensive preparation of the patient was done before bringing him to the operating room. Multidisciplinary team of anaesthetist, surgeon, haematologist and intensivist were involved during successful perioperative management of this patient.

*Keywords:* Aortic Valve replacement, coronary artery bypass grafting, Immune thrombocytopenic purpura

### **8.9** AORTIC VALVE REPLACEMENT IN A PATIENT WITH PANCYTOPENIA SECONDARY TO MYELODYSPLASTIC SYNDROME: A CASE STUDY

*Amarlal Gangwani, Mohammad Hamid  
Department of Anaesthesiology, Aga Khan  
University, Karachi*

We report a case of 66-year-old male patient with severe Aortic stenosis who underwent Aortic Valve replacement. This patient was also diagnosed with Myelodysplastic syndrome (MDS) during the admission. The perioperative management was challenging because of associated anaemia, pancytopenia and immunosuppression. These patients also have the tendency to bleed not only due to associated thrombocytopenia but also due to the cardiopulmonary bypass related coagulopathy. A

through preoperative assessment and intensive preparation of the patient was done before taking him to the operating room. There was an effective communication and cooperation between surgeon, anaesthetist and hematologist at every stage of management due to which we were able to manage this patient successfully.

*Keywords:* Myelodysplastic syndrome, pancytopenia, aortic valve replacement

### 8.10 ANAESTHETIC MANAGEMENT OF INTRA TRACHEAL MASS LESION: CASE REPORT

*Amarlal Gangwani, Syed Shahabuddin  
Departments of Anaesthesiology and Surgery,  
Aga Khan University, Karachi*

Primary tracheal masses are very rare group of benign and malignant tumors of the trachea and are mostly malignant. They usually become symptomatic when they start obstructing more than 75% of the tracheal lumen. We are presenting a case of 50 years old male with recurrent cough and shortness of breath progressively became worsened. CT scan done two months ago did not show tracheal invasion and preoperative bronchoscope biopsy was inconclusive. Patient was scheduled for video-assisted thoracic surgery (VATS) assisted biopsy of hilar mass. On fiberoptic bronchoscopy for confirmation of left sided double lumen tube position, reddish colored mass was seen at the level of Carina. CT guided biopsy confirmed Adenocarcinoma and patient refer to oncology team for further management. The management of anaesthesia for tracheal surgery and outcome will be discussed.

*Keywords:* Tracheal masses, Malignant tumors, Video-assisted thoracic surgery

### 8.11 FREQUENCY OF NUCLEOPHOSMIN (NPM-1) MUTATION IN PATIENTS WITH ACUTE MYELOID LEUKEMIA

*Imran Ahmed Siddiqui, Salman Naseem Adil  
Department of Pathology & Microbiology, Aga  
Khan University, Karachi*

*Introduction:* Acute myeloid leukemia (AML) is a malignant disorder of the blood that is characterized by blocked or impaired differentiation of haemopoietic stem cells, resulting in abnormal accumulation of immature precursors and suppression of growth and maturation of cells involved in normal haemopoiesis. It accounts for 15– 20% of childhood leukemia and approximately 35% of adult leukemia. NPM-1 gene mutations represent the most frequent known genetic abnormality in AML, these alterations have been shown to carry prognostic significance because they seem to identify patients with better response to chemotherapy. The purpose of this study is to evaluate the frequency of NPM-1 mutation in AML patients in Pakistani population, which will generate the local data and help in risk stratification. Objective: To evaluate the frequency of Nucleophosmin (NPM-1) gene in patients with acute myeloid leukemia.

*Methods:* This study is currently being conducted at clinical laboratory, section of haematology and RT-PCR technique is being used at section of molecular pathology laboratory, AKUH. All newly diagnosed cases of acute myeloid leukemia (De novo) are included in this study. Total sample size is 83.

*Results:* This is an ongoing research and we have included 45 patients in our study so far. Out of these 45, 9 (20%) were found to be NPM-1 positive. 14 females were tested out of which 3(21.4%) were positive. 6 (19.35%) males were detected NPM-1 positive out of 31.

*Conclusion:* Frequency of NPM-1 mutation in our population is comparable to the population worldwide.

*Keywords:* AML, NPM-1, Mutation



### 8.12

#### PIMS INSTITUTIONAL EXPERIENCE "THE PRESENTATION AND MANAGEMENT OF RETINOBLASTOMA IN NORTHWEST OF PAKISTAN

*Sher Ali Khan, Ruqayya Manzoor, Nuzhat Yasmeen  
Children Hospital, Pakistan Institute of Medical Sciences, Islamabad*

*Aim:* To evaluate retinoblastoma in terms of age of presentation, consanguinity, stage of disease and laterality of disease.

*Method:* Retrospective cross sectional design. Pakistan Institute of Medical Sciences, Islamabad, Pakistan. Study is from 2004 to 2012. Data of 114 patients (155 eyes) diagnosed and treated for retinoblastoma is retrospectively analyzed. Data on age of presentation, consanguinity, laterality and stage of disease were collected. International retinoblastoma staging system (IRSS) is used for classifying the extent of disease.

*Results:* Presentation at early age (<1 year of age) is seen in 22 patients (19%). 41 patients (36%) present with bilateral disease. 18 patients (16%) have stage 1 disease, 78 (68%) patients have stage 2 disease, 14 (12%) patients have stage 3 disease and 4 (4%) patients have stage 4 disease. Parents of 70 (61%) patients have consanguineous marriage. Bilateral disease (40%) is seen more in patients with positive consanguinity than in others (30%).

*Conclusion:* Most of our patient population presented in stage 2 disease. With more aggressive surveillance we can pick up stage 1. Consanguinity results into higher burden of malignancy than otherwise. This could be addressed by genetic counseling.

*Keywords:* PIMS, Islamabad, PIMS, Islamabad, PIMS, Islamabad

### 8.13

#### IMPACT OF TUMOR VOLUME ON THE OUTCOME OF DEFINITIVE TREATMENT OF NASOPHARYNGEAL CARCINOMA

*Bilal Mazhar Qureshi, Asim Hafiz, Ahemd Nadeem Abbasi  
Department of Radiation Oncology, Aga Khan University, Karachi*

*Introduction and Objective:* To Identify the association of tumor volume with outcome of nasopharyngeal carcinoma after definitive treatment of nasopharyngeal carcinoma. Nasopharyngeal carcinoma is staged according to the American Joint Committee on Cancer (AJCC) tumor, node and metastasis (TNM) which incorporates local and regional spread. Radiation therapy is the definitive treatment for nasopharyngeal carcinoma delivered with concurrent chemotherapy. However, the impact of size and bulk of primary disease on loco-regional and distant controls needs evaluation.

*Material and Methods:* All the patients undergoing radiation therapy at Aga Khan for nasopharyngeal carcinoma were included in the study. Baseline characteristics including age, gender were recorded in addition to the disease characteristics including TNM staging. Data regarding radiation therapy dose fractionation, chemotherapy setting with the regime and the number of cycles, Local control of disease, local, regional or distant relapse and death was reviewed retrospectively from the charts. Radiation therapy treatment was planned on External Beam Treatment Planning system by Varian.

*Results:* Forty-two patients were included in the review. Frequency of tumor volume <50ml, 50-125ml, 125-200ml, 200-275ml and >275ml was 19%, 21%, 6%, 4% and 3% respectively. Patients 50% had disease controlled, 31% developed distant metastasis. Only 2 patients had local recurrence. 9/15 patients developing distant disease had tumor volume >125ml.

*Conclusion:* Size of the tumor although not incorporated in TNM staging of nasopharyngeal carcinoma has an impact on outcome. Further evaluation is warranted to study the bulk of tumor volume on results of RT.

*Keywords:* tumor volume, nasopharyngeal carcinoma, Definitive chemoradiation

### 8.14

#### OUTCOME OF COST EFFECTIVE THREE FRACTIONS OF HIGH DOSE RATE (HDR) INTRA-CAVITARY BRACHYTHERAPY AFTER EXTERNAL BEAM RADIATION THERAPY FOR CURATIVE TREATMENT OF CERVICAL CANCER

*Bilal Mazhar Qureshi, Nasir Ali, Nehal Masood, Aliya Aziz Begum, Ahmed Nadeem Abbasi, Khurshed Ahmed Khan, Asim Hafiz*  
Departments of Radiation Oncology, Pathology & Microbiology and Obstetrics and Gynaecology, Aga Khan University, Karachi

**Objectives:** To report the short term vaginal mucosal toxicity and local response after treatment of carcinoma cervix using external beam radiation therapy (EBRT) and three fractions of 8Gy each of intra-cavitary HDR-brachytherapy.

**Introduction:** Definitive chemo-radiotherapy is the standard of care for patients having FIGO stage IIB–IVA tumors. External beam radiation therapy is given with 1.8 Gy daily fraction, five days a week up to 45–50.4Gy, followed by intra-cavitary brachytherapy given with weekly cisplatin. HDR brachytherapy is given in 3-8 fractions of 5Gy-8Gy delivered in each session of brachytherapy. Shorter overall treatment time improves outcome for which various methods are tried

**Methods:** Treatment protocol for completing the entire definitive treatment within 7 weeks was formulated. Patients were given concurrent chemo-radiotherapy to a dose of 4500 cGy/25 fractions, followed by three fractions of intra-cavitary HDR-brachytherapy, 8Gy each. Vaginal mucosal toxicity and local response was evaluated at the last day and thirty days post treatment.

**Results:** From January 2008-December 2012, 30 patients of uterine cervix were treated. HDR brachytherapy started in last week of EBRT and the remaining two at one week interval. 27 patients completed treatment within 7 weeks and three completed in 8 weeks. Grade III and IV vaginal toxicity observed in 24 and 06 patients respectively. Clinically visible tumor completely resolved in all patients at 4 weeks follow-up.

**Conclusion:** 3 fractions of 8Gy HDR brachytherapy treatment is feasible and well tolerated by patients; with low cost of treatment. Long term toxicity and disease control will be reported later.

**Keywords:** Carcinoma of cervix, intracavitary brachytherapy, Definitive chemoradiation

### 8.15

#### RARE CYTOGENETIC ABNORMALITIES IN ACUTE MYELOID LEUKEMIA TRANSFORMED FROM FANCONI ANEMIA – A CASE REPORT

*Shabneez Hussain, Salman Naseem Adil*  
Department of Pathology & Microbiology, Aga Khan University, Karachi

**Introduction:** Fanconi's anemia (FA) is an inherited bone marrow failure syndrome that carries a higher risk of transformation to acute myeloid leukemia (AML) when compared with general population. AML is the initial presentation in approximately one third of patients.

**Case Description:** A 17 year old male presented to the emergency room with history of high grade fever since two weeks. Examination revealed pallor, short stature and thumb polydactyly. There was no visceromegaly or lymphadenopathy. Complete blood count showed haemoglobin 3.4 gm/dl, MCV 100 fl and MCH 36 pg, white blood cell count 55.9 X 10<sup>9</sup>/L and platelet count 8 X 10<sup>9</sup>/L. Peripheral blood smear revealed 26% blast cells. Bone marrow was hypercellular exhibiting infiltration with 21% blast cells. Auer rods were seen in few blast cells. These findings were consistent with acute myelomonocytic leukemia. These blasts cells expressed CD 33, CD13, HLA-DR, CD 117, CD34 antigens and cytoplasmic myeloperoxidase on immunophenotyping. Bone marrow cytogenetics revealed 46, XY, t (8:21) (q22; q22) [11] / 46, XY, add (2) (q37), t (8; 21) [4] / 46, XY [5]. Molecular studies showed positivity of FLT 3 D835 variant and negativity of NPM 1 and FLT3 ITD (internal tandem domain) mutation.

Peripheral blood analysis for chromosomal breakage exhibited tri-radial and complex figures. He received induction chemotherapy with cytarabine and daunorubicin (3+7). Day 14 marrow revealed clearance of blast cells.

*Conclusion:* The recognition of specific cytogenetic abnormalities present in FA known to predispose to AML is crucial for early haematopoietic stem cell transplant (HSCT) before transformation to leukemia.

*Keywords:* Fanconi anemia, Acute myeloid leukemia, Cytogenetic abnormalities

### 8.16 PATIENTS CHARACTERISTICS, TREATMENT AND SURVIVAL FOR PATIENTS WITH COLORECTAL CANCER IN OMAN, A SINGLE CENTER STUDY

*Shiyam Kumar, Ikram A. Burney, Philomena Charlotte D'Souza, Muhammad Furrakh  
Department of Medicine, College of Medicine  
and Health Sciences, Sultan Qaboos University,  
Muscat*

*Objective:* Colorectal cancer is the second most common gastrointestinal cancer in Oman with an increasing incidence according national registry over the last 15 years and incidence of 5.2/100,000. We here report the presenting features, treatment offered and survival of colorectal cancer from a University hospital in Oman and also compare our data with regional and international population based studies.

*Methods:* Electrical records of all patients who were diagnosed with colorectal cancer between June 2000 and December 2012 were reviewed retrospectively.

*Results:* A total of 140 patients were diagnosed to have colorectal cancer. Majority of the patients were males (56.4%) with mean age of 53.1 years (range 18-80). Rectum was involved site in majority of the patients (29.3%), followed by sigmoid colon (27.9%), ascending colon (20.0%), descending colon (17.1%) and transverse colon (5.7%). Forty two percent patients had stage III disease, while 32.9%, 19.3%, 3.6% patients had stage IV, stage II and

stage I respectively. 46 (29.9%) patients had synchronous metastasis, liver being the most common site 27 (19.3%). K-Ras status was checked for 67 patients, 37 (26.4%) had wild type while 30 (21.4%) had mutant type. Median overall survival (OS) for all patients was 69 months (range 0 – 140), with 5 year OS of 50%. The 5 year OS for stage I, II, III and IV was 100%, 55%, 68% and 15% respectively. On univariate analysis gender, age at diagnosis, surgical resection, adjuvant chemotherapy, cycles of chemotherapy administered, relapse free survival (RFS) and treatment for 1st recurrence were significant factors affecting the OS of patients with non-metastatic disease while age, pat

*Conclusion:* The majority of patients present with advanced disease and most at younger age. The survival rates are comparable to the published regional and international literature

*Keywords:* Colorectal cancer, chemotherapy, Oman

### 8.17 PRESENTING FEATURES, TREATMENT PATTERNS AND OUTCOMES OF PATIENTS WITH BREAST CANCER IN PAKISTAN: EXPERIENCE AT A UNIVERSITY HOSPITAL

*Shiyam Kumar, Asim Jamal Shaikh, Yasmeen Abdul Rashid, Nehal Masood  
Sultan Qaboos University Hospital, Muscat,  
Department of Medicine, Aga Khan University  
Hospital, Nairobi, Kenya and Department of  
Oncology, Aga Khan University, Karachi*

*Introduction:* Breast cancer is the most common cancer in Pakistani women. We report the presenting features, treatment patterns and survival of breast cancer from a University Hospital in Southern Pakistan and compare the data with international population based studies.

*Methods:* Medical records of patients diagnosed to have breast cancer between January 1999 and November 2008 were reviewed retrospectively.

*Results:* A total of 845 patients were identified. Median age of diagnosis was 48 years (range 18-

92). Clinical stage was as follows: Stage I 9.9%; Stage II 48.5%; Stage III 26.2%; Stage IV 3.8%; data not available 1.5%. Approximately, half (51.6%) were estrogen receptor (ER) positive and 17.5% over-expressed Her2/neu. Nearly 23% patients received neo-adjuvant chemotherapy while 68.9% received adjuvant chemotherapy. Anthracycline based treatment was the most common treatment until 2003 while later on, patients also received taxanes and trastuzumab based therapy. Age, stage, tumor size, lymph node status, tumor grade, ER status, treatment with hormonal therapy and radiation were the major predictive factors for overall survival (OS). We report an impressive 5 year OS of 75%, stage specific survival was 100%, 88% and 58% for Stages I, II and III respectively.

*Conclusion:* The majority of patients present at a younger age and with locally advanced disease. However, short term follow-up reveals that the outcomes are comparable with the published literature from developed countries. Long-term follow-up and inclusion of data from population-based registries are required for accurate comparison.

*Keywords:* Breast cancer, chemotherapy, Pakistan

### 8.18 STUDY OF LARYNGEAL MOVEMENT DURING SIMULATION OF EARLY GLOTTIC CANCERS

*Asif Iqbal, Bilal Qureshi, Khursheed Khan,  
Nasir Ali, Ahmed Nadeem Abbasi  
Department of Radiation Oncology, Aga Khan  
University, Karachi*

*Introduction and Objective:* The larynx is mobile organ which moves during deglutition normally. Radiotherapy (RT) is the effective curative treatment for laryngeal cancers. 95% and 80% cure rates are documented for T1 & T2 glottic cancer with RT alone. To measure laryngeal movement in caudo-cephalic direction during simulation of glottic tumors. This study is done in order to determine field margin for

resting and deglutition displacements in cephalic direction in patients with early laryngeal (glottic) cancer.

*Material and Methods:* Retrospectively twenty patient's simulator films were studied. Inclusion Criteria: Patients planned for radical RT of Early glottic carcinomas treated from 2008 to 2012. Varian Acuity simulator was used. Patients were immobilized with thermoplastic masks. They were imaged in the treatment position using fluoroscopy during simulation. Lateral images were acquired. Two-dimensional displacement was analyzed by noticing the movement of hyoid bone. Deglutition-induced displacements were quantified based on position change during deglutition relative to pre-swallow structure location for cephalic direction.

*Results:* Mean maximum swallowing hyoid bone displacements ranged from 5 to 19mm was observed. Mean average movement was 12mm for all patients.

*Conclusion:* The measurable mean maximum swallowing displacement for the laryngeal movement indicates that tumor motion occurs when the patient is swallowing. Laryngeal movement documentation can be considered before finalizing the field size in radical RT plans.

*Keywords:* Laryngeal Cancer, Simulation, Radiotherapy

### 8.19 MODULATING EFFECT OF THE XMN1 POLYMORPHISM IN THALASSAEMIA INTERMEDIA

*Izza Hussain, Mohammad Khurshid, Tariq  
Moatter  
Departments of Pathology & Microbiology and  
Radiation Oncology, Aga Khan University,  
Karachi*

*Background and Introduction:* The C-T substitution at position -158 of the G $\gamma$  globin gene, referred to as the Xmn1, polymorphism, is a common sequence variant in G $\gamma$ -globin gene promoter, and results in elevated fetal hemoglobin (HbF). This could explain why the same mutations on different  $\beta$  chromosomal backgrounds are

associated with disease of different clinical severity. Increased HbF confer major clinical benefits in patients with  $\beta$  thalassaemia

**Objectives:** To explore the role of Xmn I polymorphism within the  $\beta$  globin gene in thalassaemia Intermedia. Presence of clinical symptoms with and without Xmn1 polymorphism were used for comparison of clinical features.

**Methods:** After informed consent, Ethylene diamine tetraacetic acid (EDTA) blood was obtained from 50 individuals of Thalassaemia Intermedia patients. Haematological and clinical parameters were noted. DNA was extracted using the standard procedure. Homozygous/heterozygous for Xmn I polymorphism was detected by PCR-based RFLPs. Clinical severity of cases were compared. Data was analyzed on SPSS.

**Results:** This is an ongoing study and more cases will be recruited. Currently seven cases have been analyzed. Of these seven cases, three (42.8%) cases showed presence of Xmn1 polymorphism. Out of these three two cases were homozygous (T—T) (+/+) and one was heterozygous (C—T) (+/-). These results were comparable with the clinical outcomes.

**Conclusion:** It is hypothesized that presence of Xmn I polymorphism impose a good prognosis. Clinical severity and transfusion requirements were less in homozygous when compared to heterozygous. However further study will confirm this hypothesis

**Keywords:** Thalassaemia Intermedia, Xmn I polymorphism,  $\beta$  globin chain

## 8.20 CARING FOR NEONATAL PATIENTS LIVING WITH G6PD DEFICIENCY IN PAKISTAN

*Mahek J. Pethani*  
Nursing Services, Aga Khan University, Karachi

**Introduction:** WHO (2008) estimated that G6PD affects 330 million individuals worldwide, approximately 4.9% of the population worldwide. Even in past ten years of AKUH a total of 555 pediatric patients were admitted with G6PD deficiency out of which 536 were males and 19 were females. This shows the escalating prevalence of G6PD at international and national

junctures, therefore, reinforcing the need to address it.

**Method:** Systemic review of literature from 17 research articles from 2000 to 2013 was conducted through electronic medium by using JPMA, SAGE and Google search engines.

**Case Description:** A 6 months old baby girl is diagnosed with G6PD deficiency, when she was a month old. Her mother looked very anxious and wanted to know more about the disease process. She said that her daughter has not developed any complication yet nor exhibited any sign and symptoms of this deficiency. Moreover, she verbalized that physician has given her a list of medications which her daughter shouldn't use throughout her life time. Furthermore, she verbalized that she and her husband were not screened for G6PD deficiency and she has been breastfeeding her child. Discussions/Implications Following are three particular recommendations. First, when clinical and hematological findings raise the suspicion of G6PD deficiency, the disorder should be confirmed by quantitative spectrophotometric measurement of red blood cell enzyme activity. Second, patients with G6PD deficiency should avoid exposure to oxidative drugs and ingestion of fava beans. Finally, neonates should be tested for G6PD deficiency if they have a family history of hemolysis or are of a particular ethnic or geographic origin

**Keywords:** G6PD Deficiency, Neonates, Hemolysis

## 8.21 TO OBSERVE THE FREQUENCY AND SEVERITY OF HAEMORRHAGIC EVENTS IN PATIENTS WITH SEVERE HAEMOPHILIA A IN PAKISTAN

*Mehreen Mehmood, Bushra Moiz*  
Department of Pathology & Microbiology, Aga Khan University, Karachi

**Introduction :** Hemophilia A is an X chromosome linked hereditary disorder caused by defective synthesis factor VIII molecules. Its incidence ranges from 1 in 10,000 people. Patient with Factor VIII activity <1% will be considered as severe hemophiliacs. Severe hemophilia A patients

presents with haemarthrosis and life threatening bleed i.e. CNS bleeding.

**Objective:** To observe frequency and severity of hemorrhagic events in severe Hemophilia A in Pakistan.

**Materials and Methods:** In the present study, we analyzed phenotypic expression of 27 enrolled, severe hemophilia A patient registered at Fatimid Foundation blood bank. Data was obtained from medical files from January 2012 to August 2013. The phenotype includes joint bleeding frequency/year, Factor VIII level, blood products used for patients. Follow up was used to estimate mean annual number of bleeds and mean annual clotting factors used (IU/KG/YR).

**Results:** Mean age of the 27 patients included in the study is 23yrs. 13 patients i.e 48% patients had < 10 haemorrhagic events, they are referred as Group 1 and 14 patients i.e 52% patients had >10 haemorrhagic events, they are referred as Group 2. Mean blood products (FFP, CP, FVIII) transfused to Group 1 are 189.63, 152.47, 159.16 and in Group 2 are 201.17, 60.96, 3.5 respectively.

**Conclusion:** This study will help to determine treatment response in hemophiliac to improve hematological management.

**Keywords:** Haemorrhagic events, Haemophiliac, Factor VIII

## 8.22

### OUTCOME OF ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION IN PATIENTS WITH HEMATOLOGICAL MALIGNANCIES.

*Mohammad Faizan Zahid, Natasha Ali, Salman Naseem Adil, Mohammad Usman Shaikh, Nehal Masood*

*Medical College, Departments of Pathology & Microbiology and Oncology, Aga Khan University, Karachi*

**Introduction:** Allogeneic hematopoietic stem cell transplantation (allo-HSCT) is a potentially curative treatment modality for hematological malignancies. We evaluated the frequency and outcome of patients suffering from hematological malignancies, including AML, acute ALL, CML and MDS, after allo-HSCT.

**Methods:** All patients of hematological malignancies with HLA identical donors who underwent allo-HSCT were included. Pre-transplant workup consisted of complete blood count, evaluation of liver, kidney, lung, infectious profile, chest, paranasal sinus roentgenograms and dental review. Donors were given G-CSF at a dose of 5-10 µg/kg/twice daily for five days prior to harvest. The conditioning regimens included cyclophosphamide, busulfan and total body irradiation.

**Results:** A total of n=118 allogeneic transplants were performed from April 2004 to October 2012. N=45 of these were done for hematological malignancies. There were n= 34 were males and n=11 were females. N=17 patients underwent allo-HSCT for AML, n=9 for ALL, n=12 for CML and n=7 for MDS. Median age± SD was 26years ±11.4 (range: 18-50 years). A mean of  $7.7 \times 10^8 \pm 1.5$  mononuclear cells/kg were infused (range: 6.2-9.2x10<sup>8</sup>/kg). The median time to WBC recovery was 19days ± 4 (range: 15-23 days). Transplant related mortality and day+100 mortality were 14% and 40% respectively. Overall survival was 55%.

**Conclusion:** Allogeneic stem cell transplant is an effective treatment option in patients with hematological malignancies. Transplant related mortality in our patients was 14% with an overall survival of 55%, which are comparable with results from neighbouring countries as well as the western world.

**Keywords:** Allogeneic Transplantation, Hematological Malignancies, Outcome

## 8.23

### 5-FLUOROURACIL INDUCED VASCULITIC INJURY MANIFESTING AS MULTI-ORGAN DYSFUNCTION IN A PATIENT WITH ESOPHAGEAL CARCINOMA

*Mohammad Faizan Zahid, Nehal Masood, Munira Shabbir Moosajee*  
*Medical College and Department of Oncology, Aga Khan University, Karachi*

**Case report:** A 29 years old man was admitted for consolidation chemotherapy with Carboplatin and 5-Fluorouracil (5-FU) for metastatic adenocarcinoma of the esophagus. He

had previously undergone two-staged esophagectomy followed by chemotherapy with docetaxel, cisplatin and 5-FU. On the third day of the cycle his creatinine started rising and he developed shortness of breath with a pulse of 150 beats/minute followed by supraventricular tachycardia. Carotid massage and intravenous calcium gluconate and magnesium sulphate resulted in resolution of cardiac symptoms. Subsequent echocardiogram showed reduced left ventricular systolic function (ejection fraction of 15-20%). Chemotherapy was discontinued. Hours later he had sudden onset of confusion, aphasia and right sided mouth drop. Creatinine had risen upto 2.5 mg/dl. MRI of the brain showed acute demyelination in the periventricular white matter. He was given pulse doses of methyl prednisone (250mg every 6 hours). After 3 hours of the first dose, he showed rapid resolution of confusion and aphasia. Creatinine eventually returned to baseline. On his last follow up he did not show any residual neurological deficits.

**Conclusion:** We hypothesized the events resulted from iatrogenic vasculitis secondary to chemotherapy, most likely 5-FU, given the temporal relationship between the diagnosis of malignancy, infusion of chemotherapy, appearance of and rapid resolution of symptoms upon administration of steroids. Although vasculitic involvements of coronary, cutaneous and intestinal vasculature have separately been reported to be associated with 5-FU, reactions involving three organ systems simultaneously have not been reported

**Keywords:** 5-Fluorouracil, multi-organ dysfunction, vasculitic injury

## 8.24 EXTRACRANIAL SOFT TISSUE METASTASIS IN A 5 YEAR OLD CHILD WITH ANAPLASTIC EPENDYMOMA.

*Mohammad Faizan Zahid, Zehra Fadoo, Zubair Ahmad, Muhammad Ehsan Bari, Ahmed Nadeem Abbasi*

*Medical College, Departments of Oncology, Pathology & Microbiology and Surgery, Aga Khan University, Karachi*

**Case Report:** A 5 year old boy presented with worsening headaches, vomiting, drowsiness and weight loss for 1 month. He also had difficulty maintaining balance and fell down frequently. Examination revealed elevated blood pressure, sluggish pupils and grade 1 bilateral papilledema. MRI showed a 4.0x3.9 cm mass in the fourth ventricle with non-communicating hydrocephalus. A ventriculoperitoneal shunt was placed to normalize the increased intracranial pressure. Subsequently the child became stable and the mass was excised. Histopathology showed anaplastic ependymoma (WHO Grade III). Subsequently the child underwent radiotherapy, receiving 59.4 Gy of focal radiation to the primary tumor site in 33 fractions. Surveillance MRI scans showed no residual disease or metastasis. 10 months later the child complained of recurrent frontal headaches and a lump felt at the initial surgical scar. MRI showed a subcutaneous soft tissue lesion in the suboccipital region measuring 0.5x0.5x0.4 cm and a midline lesion between both frontal lobes measuring 1.6x1.3 cm, suggestive of a metastatic deposit. MRI of spine was negative for metastasis. The child underwent surgical resection of these lesions and post-operative chemotherapy was considered as follow-up treatment, however, the family deferred from this option and opted for radiotherapy instead. **Conclusion:** This case highlights extracranial metastasis in a patient with anaplastic ependymoma. Although recurrence and intracranial spread are well documented outcomes, extracranial metastasis is a very rare and unusual event with such tumors. According to literature, multiple surgeries with radiotherapy can result in a good clinical outcome.

**Keywords:** Anaplastic ependymoma., Extracranial, Soft tissue metastasis

## 8.25 PROSTASPHERE FORMATION IN DAR-19 PROSTATIC CELL LINE DEPICTS STEM CELL-LIKE POPULATION

*Muhammad Khalid, Tahira Zar Muhammad,  
Sadia Habib, Sheerien Rajput, Anwar Ali  
Siddiqui, El-Nasir Lalani  
Departments of Pathology & Microbiology and  
Biological & Biomedical Sciences, Aga Khan  
University, Karachi*

*Introduction:* In cancer, stem cells differentiate into cancerous cells and cancer stem cells (CSC), out of which CSC has the ability to propagate, spread the tumors and is capable of forming spheres in vitro. Prostate cancer initiation and progression is mediated by Androgen receptor (AR)-mediated signaling which is a key factor in castrate resistant prostate cancer.

*Objective:* To study the effect of Dihydrotestosterone (DHT) treatment on stem cell pool in DAR19 cells.

*Methodology:* DAR19 cells were cultured and the cells were labeled using CD133 labeled Microbead kit (Miltenyi Biotech) followed by Magnetic Assisted Cell Sorting (MACS) resulting into CD133+ and CD133- subpopulations. These subpopulations were cultured separately with and without Poly-HEMA coated 96 well plates in serum free DMEM (SFM) or SFM containing B27, N2, epithelial growth factor (EGF) and fibroblast growth factor (FGF) as supplements (SFMS). Prostaspheres (P0) were formed and subcultured in SFMS to generate secondary spheres P1 which were further subcultured into secondary spheres P2 and P3 in similar conditions. Transcriptional analysis of androgen receptor (AR) and stem cell markers CD44, ABCG2, Oct3/4, CD117, CD133 and immunohistochemistry (IHC) of prostaspheres (PS) with the above mentioned markers was performed.

*Results:* DAR19 formed PS both in CD133+ and CD133- subpopulation in SFMS and SFM in each passage after 15 days and the transcriptional expression of AR and stem cell markers was studied.

*Conclusion:* DAR19 PS formation was observed in CD133+/- sub-populations in SFMS and SFM. AR, stem cell markers and IHC expression in these PS indicate stem cell-like population pool.

*Keywords:* Prostate cancer stem cell, prostaspheres, immunohistochemistry

## 8.26 COMPOSITE ADVERSE EVENT OUTCOME IN PROLONGED FEBRILE NEUTROPENIC PEDIATRIC ONCOLOGY PATIENTS

*Muhammad Matloob Alam, Zehra Fadoo  
Department of Paediatrics & Child Health, Aga  
Khan University, Karachi*

*Introduction:* Pediatric cancer patients with prolonged neutropenia have increased risk for severe, recurrent or new bacterial and fungal infection. Although prompt initiation of empirical antibacterial antibiotics has leads to substantial improvement in morbidity and mortality, infectious complications still persist.

*Objective:* The aim of this study was to identify the risk factors associated with adverse outcomes in this group.

*Methodology:* This study was a retrospective analysis of clinical data on pediatric oncology patients with prolonged febrile neutropenia from a tertiary health care center of Pakistan.

*Results:* We analyzed 135 hospitalizations of pediatric cancer patients with prolonged febrile neutropenia. The mean age of the study population was 7.3±4.1 years. There was 98 (72.6%) male and 37 (27.4%) female. The mean duration was 10.3±5.2 days (range:1–25 days). Acute leukemia 88 (65.2%) were the most common diagnosis followed by lymphomas 19 (14.1%) and solid tumors. Cause of neutropenia were identified in only 58 (43%) patients, out of BSI 22 (16.3%), pneumonia 15 (11.1%), fungal infection 13 (9.6%), infectious diarrheas 5 (3.7%) and UTI 3 (2.2%). More than 50% of the patients had severe myelosuppression. The composite adverse event outcome were observed in 28 (20.7%) of patients, with in-hospital mortality occurring in 7 (5.2%), PICU admission



occurring in 12 (8.9%) and inotropic support was required in 9 (6.7%). On logistic regression analysis cancer type AML (AOR, 7.63 [95% confidence interval, 1.12-91.35 ]; P <0.001 ), severe neutropenia ANC < 50/cm (AOR, 10.83 [95% CI, 1.37-65.74]; p < 0.001), Platelets count < 50,000/cm (AOR, 5.17 [95% CI, 1.17-23.78 ]; p < 0.001), BSI (AOR, 2.33 [95% CI, 0.84-15.79]; p 0.05) and fungal infection (AOR, 4.26 [95% CI, 1.34-86.57]; p < 0.001) were found as independent risk factors associated with development of composite AE outcome in pediatric oncology patients with prolonged FN.

**Conclusions:** AML, severe myelosuppression, blood stream infection and fungal infection were identifiable risk factors associated with development of adverse event outcome in pediatric oncology patients with prolonged febrile neutropenia. Prospective studies in large cooperative trials may be beneficial in evaluating these risk factors further.

**Keywords:** febrile neutropenia, pediatric cancer, adverse outcome

## 8.27

### FEBRILE NEUTROPENIA IN PEDIATRIC CANCER PATIENTS: EXPERIENCE FROM A TERTIARY HEALTH CARE FACILITY OF PAKISTAN

*Muhammad Matloob Alam, Sonia Qureshi, Naureen Mushtaq, Zehra Fadoo  
Department of Paediatrics & Child Health, Aga Khan University, Karachi*

**Introduction:** Febrile neutropenia (FN) is a common complication of therapy among children with cancer. Although prompt initiation of empirical antibacterial antibiotics has leads to substantial improvement in morbidity and mortality, infectious complications still persist.

**Objective:** The aim of this study was to describe the demographic, clinical feature, laboratory data and management outcomes of febrile neutropenia in pediatric cancer patients.

**Methodology:** This study was a retrospective analysis of clinical data on pediatric cancer

patients with febrile neutropenia from a tertiary health care facility of Pakistan.

**Results:** We analyzed 872 hospitalizations of pediatric cancer patients with febrile neutropenia. The mean age of the study population was 5.32 ±4.07 years. There was 559 (64.1%) male and 313 (35.9%) female. ALL (n=590; 67.7%) was the most common diagnosis followed by AML (n=105; 12.2%), lymphoma (n=86; 9.9%) and sarcomas (n=51; 5.8%). Cause of neutropenia were identified in only 58 (43%) patients, out of URTI (n=192; 22%), BSI (n=58; 6.6%), pneumonia (n=31; 3.5%), infectious diarrheas (n=16; 1.8%) and UTI (n=11; 1.3%). Additionally, the median neutrophil count and platelet count revealed profound myelosuppression in more than 50% cases. Age less than 5 year (OR=1.5; p= 0.043), AML (OR=1.8; p=0.019), patients who received chemotherapy within 2 week of FN (OR=1.9; p=0.007), severe neutropenia ANC < 50/cm (OR=1.5; p < 0.041), platelets count < 50,000/cm (OR= 1.5; p < 0.027), Fungal infection (OR=15.6 ; p <0.001), and pneumonia were identified as risk factors associated with development of prolonged FN (> 5 days) in pediatric cancer patients. A total of 25 (2.9%) patients were required PICU admission and overall 12 (1.4%) patients were expired. Both outcome variables were statistically significant regarding PICU admission (9% Vs 2%; OR= 5.4; p < 0.001) and mortality rate (5.2% Vs 0.8%; OR=8.1; p < 0.001) in patients with prolonged FN versus FN respectively.

**Conclusions:** Younger age, AML, severe myelosuppression, fungal infection and pneumonia were identifiable risk factors associated with development prolonged febrile neutropenia. Outcomes regarding PICU admission and mortality was worse in patients who had prolonged FN.

**Keywords:** Febrile neutropenia, prolonged, pediatric

## 8.28 PROLONGED FEBRILE NEUTROPENIA: RISK FACTORS AND OUTCOME IN PEDIATRIC ONCOLOGY PATIENTS

*Muhammad Matloob Alam, Sonia Qureshi, Syed Raza Iftiqar, Naureen Mushtaq  
Department of Paediatrics & Child Health, Aga Khan University, Karachi*

*Introduction:* Pediatric cancer patients with febrile neutropenia (FN) have increased risk for severe, recurrent or new bacterial and fungal infection. Although prompt initiation of empirical antibacterial antibiotics has leads to substantial improvement in morbidity and mortality, infectious complications still persist.

*Objective:* The aim of this study was to describe the demographic, clinical feature, laboratory data, risk factors and outcomes of febrile neutropenia in pediatric cancer patients.

*Methodology:* This study was a retrospective analysis of clinical data on pediatric cancer patients with febrile neutropenia from a tertiary health care center of Pakistan.

*Results:* We analyzed 872 hospitalizations of pediatric cancer patients with febrile neutropenia. The mean age of the study population was  $5.32 \pm 4.07$  years. There was 559 (64.1%) male and 313 (35.9%) female. ALL (67.7%) was the most common diagnosis followed by AML (12.2%), lymphoma (9.9%) and sarcomas (5.8%). Cause of neutropenia was identified in only 58 (43%) patients, out of URTI (22%), BSI (6.6%), pneumonia (3.5%), infectious diarrheas (1.8%) and UTI (1.3%). Additionally, the median neutrophil count and platelet count revealed profound myelosuppression in more than 50% cases. Age less than 5 year ( $p = 0.043$ ), AML ( $p = 0.019$ ), patients who received chemotherapy within 2 week of FN ( $p = 0.007$ ), severe neutropenia ANC < 50/cm ( $p < 0.041$ ), platelets count < 50,000/cm ( $p < 0.027$ ), Fungal infection ( $p < 0.001$ ), and pneumonia were identified as risk factors associated with development of prolonged FN (> 5 days) in pediatric cancer patients. A total of 25 (2.9%) patients were required PICU admission and overall 12 (1.4%) patients were expired. Both outcome variables

were statistically significant regarding PICU admission and mortality rate in patients with prolonged FN versus FN respectively.

*Conclusions:* Younger age, AML, severe myelosuppression, fungal infection and pneumonia were identifiable risk factors associated with development prolonged febrile neutropenia. Outcomes regarding PICU admission and mortality were worse in patients who had prolonged FN.

*Keywords:* Febrile neutropenia, pediatric oncology, adverse outcome

## 8.29 CONGENITAL FACTOR VII DEFICIENCY IN CHILDREN AT TERTIARY HEALTH CARE FACILITY IN PAKISTAN

*Muhammad Matloob Alam, Bushra Moiz, Karim Abdur Rehman<sup>2</sup>, Priyanka Jethwani, Zehra Fadoo*

*Departments of Paediatrics and Child Health, Pathology & Microbiology and Medical College, Aga Khan University, Karachi*

*Introduction and Objective:* Congenital Factor VII deficiency (CFVIIID) is the most common form of rare coagulation factor deficiencies globally. This study presents the demographics, clinical spectrum and outcome of pediatric patients diagnosed with CFVIIID.

*Methodology:* This is a retrospective review of patients aged 0 to 18 years who were diagnosed as CFVIIID, at Aga Khan University Hospital (AKUH), Karachi over a period of 12 years (2001-2012).

*Results:* Out of the 49 patients, 27 (55%) were males and 22 (45%) were females. Consanguinity was found in 92% of cases. The median age of symptom onset was 2.4 (IQR: 1.1 – 6.5) years with a median age of 5.8 (IQR: 3.1-10) years at diagnosis. In only 27% of subjects, diagnosis of FVII deficiency was made simultaneously or within 6 months of symptom onset. Epistaxis, bruises, prolonged umbilical cord bleeding, mucosal bleeds were the common clinical presentations. In females, menorrhagia was prevalent in 45% of patients of fertile age.

Life threatening complications like intra-cranial bleeds (ICB) and intra-abdominal bleeds (IAB) were observed in 8 (16.4%) patients. Out of 8 patients presented with life threatening bleeding, 5 (63%) of them presented within the first year of life. The levels of FVII:C were as follows: 20 (41%) patients; <1%, 12 (24%) patients; 1% to 5% and 17 (35%) patients; >5% to 50%. We found, that 11/20 (55%) patients with FVIIc < 1% were either asymptomatic or showed mild phenotype. In contrast, 9/17 (53%) patients with FVIIc > 5%, were affected by severe symptoms. Age < 1 year was the only identified independent risk factor associated with development life threatening bleeding episodes (p = 0.042; OR 6.46). Overall 4 (8.2%) were expired as a consequence of ICB (3) and IAB (1).

*Conclusions:* CFVIID is associated with severe bleeding and death particularly in the infant and neonates. Therefore, it is important to investigate bleeding diathesis in this age group thoroughly.

*Keywords:* Factor VII deficiency, bleeding disorder,, intra-cranial bleed

### 8.30

#### CLINICAL FEATURES, TREATMENT AND SURVIVAL OF METASTATIC PANCREATIC CANCER: A CROSS SECTIONAL ANALYSIS

*Muhammad Nauman Zahir, Adnan Abdul Jabbar*

*Department of Oncology, Aga Khan University, Karachi*

*Introduction:* Metastatic pancreatic cancer is a deadly disease with median survival ranging from 3 to 6 months. Palliative chemotherapy has been the backbone of treatment and has evolved over time. Data for this lethal disease is scarce from our part of the world.

*Methods:* Retrospective chart review was performed for all patients presenting with stage IV disease at a tertiary care hospital in Karachi, Pakistan between January 2008 and December 2012. Analysis was done using SPSS.

*Results:* 94 patients were found to be eligible during the study period. Mean age of patients was  $57 \pm 13$  years and male to female ratio was 2:1. More than half of the tumors were located in the head (57%) and almost all were adenocarcinomas (94%). 31% of patients received Gemcitabine based and 16% received FOLFIRINOX as first line chemotherapy. Median survival was 4.3 months (IQR=1.9-7.7) for the entire cohort, 5.0 months (IQR=2.3-9.6) for first line gemcitabine based treatment and 11.3 months (IQR=7.4-15.5) for first line FOLFIRINOX therapy (P<0.01). The median time to progression for gemcitabine based treatment was 3.5 months (IQR=1.8-6.0) as opposed to 9.0 months (IQR=5.7-11.1) for FOLFIRINOX (P<0.001). Although side effects necessitating inpatient admissions and dose reductions were more frequent with FOLFIRINOX, the difference between the two regimens was not statistically significant.

*Conclusion:* FOLFIRINOX remains a suitable first line option in patients with metastatic pancreatic cancer with good performance status even in a resource-poor country where diagnostic and supportive care facilities may be less than optimal and cost is a limitation.

*Keywords:* Pancreatic, folfirinox, gemcitabine

### 8.31

#### CLINICAL FEATURES AND OUTCOME OF EARLY ONSET, SPORADIC COLORECTAL CANCER: A CROSS SECTIONAL ANALYSIS

*Muhammad Nauman Zahir, Eisha Mahpara, Sobia Rafiq, Kulsoom Ghias, Munira Shabbir-Moosajee*

*Departments of Oncology and Biological and Biomedical Sciences, Aga Khan University, Karachi*

*Introductions:* Early onset colorectal carcinoma, defined as CRC at age below 45 years, is rare but an increasing incidence has been noted in Southeast Asia. It is hypothesized to be an aggressive disease with poor survival but data is scarce from this part of the world.

**Methods:** Data was collected by a retrospective chart review. 131 patients were found eligible for the period between January 1, 2004 and December 31, 2011. A pre-designed and coded questionnaire was used and analysis was done using SPSS. Cox proportional hazard model was used to compute prevalence ratios.

**Results:** Early onset CRC accounted for 32% of all CRC treated in the specified time period. Rectal cancers accounted for 45% of the study population. Multivariate analysis revealed signet ring morphology (PR 2.39, CI 1.19-4.80) and appropriate reception of neoadjuvant/adjuvant therapy (PR 4.52, CI 1.05-19.5) to be significantly associated with rectal cancers as opposed to colon cancer when adjusted for all other variables. Median survival was 19 months for both groups but Kaplan-Meier analysis revealed a trend towards an inferior survival for rectal carcinoma 2 years after initial diagnosis.

**Conclusions:** A high incidence of early onset CRC is noted in our population of which almost half had rectal disease. This group had a higher prevalence of poor prognostic factors and showed a trend towards inferior prognosis 2 years after diagnosis despite the fact that a larger percentage of patients from this group had completed appropriate therapy.

**Keywords:** Early onset, Colon carcinoma, Rectal carcinoma

### 8.32 LITERATURE ANALYSIS PRESENTING PALLIATIVE CARE: ADDRESSING SOCIAL AND PSYCHOLOGICAL NEEDS.

*Nadia Nizar Ali Vadsariya, Saleema Shoukat Ali  
Jassani, Noureen Abdul Malik Dossani  
School of Nursing & Midwifery, Aga Khan  
University, Karachi*

**Introduction:** This paper is addressing social and psychological aspects for palliative patients. Construction of social aspect in lives of terminally ill patients includes financial crisis, caregiver role strain and psychological dimensions such as demoralization, hopelessness, depression. These aspects are main concern in health care setting for patients with life limiting diseases.

**Method:** Journal research articles from 2009-2013 were chosen and these domain provide ongoing and enhancement of care through significant investigation, application of best accessible care which promote effectiveness and advancement of quality of palliative care.

**Results:** It has been observed that palliative care is a broader aspect and need to advance our palliative care environment. Impending in this approach, we can reduce social and psychological needs for care in palliative patients.

**Conclusion:** This approach should provide holistic care for the patient with life-threatening disease. Their families principally focus on encouraging life satisfaction. This paper will recognize various factors and recommendations to improve quality of life of patients with life-limiting illness.

**Keywords:** palliative care, psychological needs, life limiting diseases.

### 8.33 FEBRILE NEUTROPENIA; MEDIAN DOOR TO NEEDLE TIME – RESULTS OF AN INITIAL AUDIT

*Natasha Ali, Muhammad Baqir, Aasma Hamid,  
Mohammad Khurshid  
Departments of Pathology & Microbiology,  
Emergency Medicine, Pharmacy and Oncology,  
Aga Khan University, Karachi*

**Background & objectives:** Recently due to inadequacies during immediate management of patients with febrile neutropenia, a new gold standard “door-to-needle” time of one hour for the administration of intravenous antibiotics was introduced.

**Objective:** The aim of this audit was to identify whether that target was being met in our emergency department. This is phase one of the study which will be followed by identification of barriers to the achievement of the target and recommendations for improvement. Subject and

**Methods:** Data was collected from January 2013 - April 2013 of consecutive patients (adult and pediatric age group) who presented to the ER with febrile neutropenia for various underlying causes. Febrile neutropenia was defined as temperature spike of > 38.0C on two occasions 30 minutes apart or a single spike of >38.50C. Variables analyzed

included age, gender, antibiotics administered, underlying diagnosis, day of presentation and door-to-needle-time.

**Results:** During the study period there were n=81 patients who presented with febrile neutropenia. N= 49 were males and n=32 were females. There were n=37 patients in the pediatric age group while rest were adults. The most common underlying diagnosis was solid tumors (n=30) followed by acute lymphoblastic leukemia (n=27). Other causes included acute myeloid leukemia, chronic myeloid leukemia and lymphomas. A combination of Piperacillin/Tazobactam (4.5gms x q8hrly) and Amikacin (750mg x once daily) was most frequently administered (n=57) to these patients. The median door-to-needle time was 45 minutes (Range±SD: 10mins – 6 hours ± 1 hour 10 minutes). Long delays of over 4 hours occurred in n=4 patients (all were adults). There were minimal delays observed in pediatric patients due to “red alert” policy implementation. N=2 of the long delays occurred on a weekday and n=2 on the weekend.

**Conclusion:** The overall median door-to-needle times were 45 minutes which was in the accepted range. However, delays that occurred demand improvements like introducing “red alert” policy for adult patients, counseling of staff and residents, identifying potential barriers in achieving the target time along with solutions and developing hospital based guidelines on managing patients with neutropenic sepsis.

**Keywords:** febrile neutropenia, antibiotics, median time

### 8.35 IDIOPATHIC THROMBOCYTOPENIC PURPURA: A 10 YEARS' EXPERIENCE AT TERTIARY CARE HOSPITAL

*Naureen Mushtaq, Muhammad Matloob Alam,  
Fatima, Malik, Zehra Fadoo  
Department of Paediatrics & Child Health and  
Medical College, Aga Khan University, Karachi*

**Introduction and Objective:** The aim of the study was to describe the presenting features, treatment modalities and response to therapy in

children with Idiopathic Thrombocytopenic Purpura (ITP).

**Methodology:** We conduct a retrospective chart review of all pediatric patients (0-15 years) of ITP, admitted over a period of 10 year (2001 to 2010).

**Results:** A total of 95 children with diagnosis of ITP were analyzed. The mean age was 6.1 +/- 3.8 years. There were 45 (47.3%) male and 50 (52.7%) female. 34 (35.8%) patients had history of preceding illness, out of 17 (18%) had respiratory tract infections, 14 (15%) had acute gastroenteritis and 3 (3.2%) had chicken pox. Bruises (85.3%), petechial rash (79%), epistaxis (24%) were the common presentations followed by menorrhagia and gastrointestinal bleeding 6 (6.3%) each and intracranial bleeding 2 (2.1%). Median platelet count was 5,000 (IQR; 4000-13000). Bone Marrow was done of diagnosis in 61 (64.2%) of patients. Spontaneous recovery was seen in 7 (7.4 %). Rest of the 88 (92.6%) patients received treatment. Eighty patients were initially treated with Prednisone, out of 49(61.3%) patient were responded. Over all 24 patients received intravenous Anti D and 10 showed complete responses, another 24 received IVIG and 19 patients showed complete response. We did not observed significant toxicity and/or adverse events relate to the treatment except mild allergic reactions with IVIG and cushingoid effects and mild hypertension in children received steroids. Around 19 (20%) were relapses on initial treatment and later on only 5 (5.2 %) developed into chronic form. Chronic cases were treated as, one received rituximab showed complete response We did not observed significant toxicity and/or adverse events relate to the treatment except mild allergic reactions with IVIG and cushingoid effects and mild hypertension in children received steroids. Around 19 (20%) were relapses on initial treatment and later on only 5 (5.2 %) developed into chronic form. Chronic cases were treated as, one received rituximab showed complete response, 3 received azathioprine only one responded while the other alive with borderline platelet count around 20,000 and 1 patient underwent a splenectomy. None of our patients were died

**Conclusions:** ITP is a common pediatric disease presenting at any age with low morbidity and mortality. Several successful therapeutic options exist. The overall prognosis in childhood ITP is good

**Keywords:** Idiopathic thrombocytopenic purpura, Children, Response

### 8.37

#### RADIATION INDUCED ORAL COMPLICATION IN HEAD AND NECK CANCERS: A NON-MALFEASANCE FACTOR

*Numan Hussain*  
*Department of Community Health Sciences, Aga Khan University, Karachi*

**Introduction:** Head and neck cancers are treated in different approaches. Radiation is one of the vital treatment modality but it can bring along other health concerns like oral complications. These complications include dental caries, oral mucositis, xerostomia, pulpitis fungal and viral infections. These conditions not only cause discomfort but it also alters the nutrition of patients.

**Objective:** To analyze the oral complications caused by radiation in treatment of head and neck cancers. To advocate preventive measures while inducing radiation in head and neck cancers.

**Method:** Systematic review of 18 articles through print and electronic media published from 2000-2008.

**Results:** Prevention of oral complications due to radiation therapy for head and neck cancers is doable. It can be achieved by proper evaluation of oral health before and after radiation therapy. Besides oral health consults, guiding patients about the effect of radiation on oral health and its preventive measures is essential.

**Conclusion:** Although radiation is significant in most of the head and neck cancers but efforts of health professionals can lessen the burden of oral complications on patients. Patients should be sent for dental consultation before radiation therapy to evaluate oral health and treat any

existing condition. Patient teaching resources should be available for patients going through radiation therapy. Educating patients about impact of radiation therapy on oral health will compel patients to intervene oral care before and after therapy.

**Keywords:** Head and neck cancers, oral complications, radiation

### 8.38

#### USE OF PORT-A-CATH IN CANCER PATIENTS: A SINGLE CENTER EXPERIENCE

*Philomena Charlotte D'Souza, Shiyam Kumar, Ikram A. Burney, Mansour S. Al-Moundhri*  
*Department of Nursing, Sultan Qaboos University Hospital, Muscat and College of Medicine and Health Sciences, Sultan Qaboos University, Muscat, Oman*

**Aim:** We report on the pattern of use and rate of complications of Port-a-Cath in patients diagnosed to have malignancy at a single institution.

**Method:** The data were collected retrospectively from patients who received the treatment for solid tumors or lymphoma through port-a-cath at our hospital between January 2007 and February 2013.

**Results:** A total of 117 Port-a-Cath were inserted in 107 patients. The majority was implanted by an interventional radiologist (73.5%), and right internal jugular vein was accessed in 79 (67.5%) patients. Mean catheter indwelling time was 354 (range 3-1876) days for all patients, 252 (3-1876) and 389 days (13-1139) for patient with and without complications respectively. Thirty (25.6%) Port-a-Caths were removed prematurely, mainly due to infectious complications while 14.5% were removed after completion of treatment. Staphylococcus aureus was commonest isolated organism (6.8%). Underlying diagnosis ( $p = <0.001$ ), chemotherapy regimen ( $p = <0.001$ ), sensitivity to antibiotics ( $p = 0.01$ ) and any complication ( $p = <0.001$ ) were significant factors affecting duration of Port-a-Cath; while gender, intention

of treatment, site of placement, tip location, interventionist, BMI and single or multiple lines of chemotherapies were not significantly associated. None of these factors were significant on multivariate cox regression analysis.

*Conclusion:* Mean duration of use of port-a-cath was almost 1 year. Infection was the most common complication; leading to premature removal followed by port thrombosis.

*Keywords:* Port-a-Cath, Infection, Cancer

### 8.39 EFFECTS OF INDIVIDUALIZED PATIENT EDUCATION BY A NURSE ON THE QOL OF BREAST CANCER PATIENTS RECEIVING CHEMOTHERAPY AT PRIVATE TERTIARY CARE HOSPITAL KARACHI

*Sajida Khowaja, Asho Ali, Raisa Begum Gul  
School of Nursing & Midwifery, Aga Khan  
University, Karachi*

*Introduction and Objective:* The purpose of this pilot study was to identify the effect of individualized patient education with emotional support, by a nurse, on the quality of life (QoL) of breast cancer patients receiving chemotherapy, to see the association between QoL and self-efficacy and to determine the feasibility of intervention in Pakistani setting.

*Method:* A quasi-experimental design, with two groups, based on time blocks with 15 patients in each group was used. The QoL and self-efficacy of both the groups was assessed at the beginning of first (Time 1) and at the completion (Time 2) of last cycle of chemotherapy. The control group received hospital's routine care and the intervention group received the intervention for 12-18 weeks. The intervention included: availability of nurse during chemotherapy, provision of educational material, discussion through telephonic follow-up calls by the nurse to patients and by patients to nurse researcher. The data was analyzed using descriptive and inferential statistics.

*Result:* The effect of individualized educational intervention on patients' overall QoL was not significant in the intervention group (p value: 0.151). However, 91% of total 411 issues shared by the patients were handled by the nurse, 7.38% by medical oncology officer, and 1.53% at emergency department. A stronger positive association was found between QoL and self-efficacy in the intervention group ( $r=0.696$ ), than in the control group ( $r=0.336$ ) Although QoL was not significantly different between intervention and control groups, however, intervention was found feasible in Pakistani context.

*Conclusion:* Keeping clinical significance in view, a larger study is recommended in a multi-center setting.

*Keywords:* Individualized-education, QoL, Feasibility

### 8.40 THE 8.40 KNOWLEDGE, ATTITUDE AND BEHAVIOR OF FAMILIES WITH THALASSEMIA CHILDREN TOWARD THALASSEMIA SCREENING-A SINGLE CENTRE STUDY IN KARACHI, PAKISTAN

*Salima Muhammad Khowaja, Saqib Ansari  
Alumni, Aga Khan University, Karachi*

*Objective:* To identify knowledge, attitude and behavior of families with thalassaemic children towards thalassemia screening.

*Methodology:* A cross-sectional study was conducted at a private hospital from December 2012 to February 2013. 40 participants were conveniently selected and interviewed through the structured questionnaire. Data from 39 participants was analyzed using SPSS version 17.0. *Results:* Consanguinity was present in 41% (first cousin), 17.9% (second cousin). 82% of the responders were parents. 84.6% believed thalassemia to be preventable and were aware of the screening available (95%). 66.7% considered thalassemia to be inherited disease while 33.3% reported it to be the result of nutritional deficiency or just a fate. 82% had adequate

knowledge. Those having affected child in immediate family were significantly more likely to have adequate knowledge ( $p < 0.05$ ) while no significant differences were seen on the basis of socio-economic status or the period of child's illness. Doctors were major source of information (92.3%). 74% got their carrier status checked after 1st thalassemic child. Participants underwent PND (76.9%) when suggested and termination was done in case of thalassemia major fetus. 55.9% of those having thalassemic child, had plans for PND in future pregnancies however 8.8% were not convinced being doubtful of its results. 20.6% were not planning for future pregnancies. 41% checked their children's carrier status. Participants having carrier children were convinced to screen their partners before marriage.

*Conclusion:* Majority of the family members was aware of thalassemia screening and practicing it however continuous health education is required.

*Keywords:* Thalassemia screening, knowledge, attitude

#### **8.41** FREQUENCY AND TYPES OF CHROMOSOME 21 ABERRATIONS IN PERIPHERAL BLOOD OF CLINICALLY SUSPECTED PATIENTS

*Sarwat Maroof, Dr Farooq Ghani, Samuel Sharif, Mahesh Kumar, Ambreen Zehra, Shahid Hussain*

*Department of Pathology & Microbiology, Aga Khan University hospital, Karachi*

*Introduction:* Down syndrome is the most common chromosomal abnormality in humans. It is typically associated with a delay in cognitive ability and physical growth, and a particular set of facial characteristics.

*Objectives of Study:* The objective of this study was to determine the pattern of Trisomy 21 and its variants in peripheral blood of clinically suspected cases referred to a tertiary care hospital in Karachi, Pakistan

*Study Design:* Cross sectional data of suspected cases of Down syndrome referred for peripheral

blood testing by chromosomal analysis by conventional karyotyping.

*Place and Period of Study:* Sub section of Cytogenetic, section of Histopathology, Department of Pathology & Microbiology, Aga Khan University Hospital (AKUH) from January 2011 to Sep 2013.

*Material and Methods:* Cross sectional data of cases were collected from Cytogenetic department, section of Histopathology, Department of Pathology & Microbiology of Aga Khan University Hospital (AKUH) from 2011 to Sep 2013. A questionnaire was developed, addressing different variables considered in the study, including age, sex, location, clinical indications on the basis of which individual blood samples were sent for testing for Trisomy 21. The Karyotyping pattern and their variants for each patient were also noted.

*Results:* A total of 674 cases were included in the study. Ages ranged from 3 days to 15 years. Out of 674 cases, 514 cases (93%) turned out to be positive for Trisomy 21 on karyotyping. Analysis of the results showed that this syndrome was more common in males (61.5%) between 1 day-15 years of age. The common clinical indications for suspicion patients were dysmorphic features mental retardation and delayed milestones.

Amongst the 514 positive cases, Karyotyping showed, 478(93%) cases of standard Down syndrome, 27(5%) cases with different variants of Robertsonian translocation and 4(1%) cases showed mosaic, while 05(1%) cases showed complex karyotype.

*Conclusion:* This study shows a relatively high frequency of Down syndrome and different variants in this region. This cytogenetic data assist clinicians and genetic counselors to determine the importance of cytogenetic study. Data from this study would also allow us to make recommendations for prenatal screening for trisomy in all pregnant women

*Keywords:* Down Syndrome, Trisomy 21, Robertsonian Translocation



#### 8.42

### ANALYSIS OF RECTAL RADIATION DOSES IN RADICAL TREATMENT OF PROSTATE CANCER PLANNED WITH IMRT TECHNIQUE

*Sehrish Abrar, Asmara Waheed, Asif Iqbal, Nasir Ali, Khursheed Khan, A Nadeem Abbasi*  
Department of Radiation Oncology, Aga Khan University, Karachi

*Introduction and Objective:* To observe variation in Rectal doses in IMRT Planning of Ca Prostate radical patients.

*Method and Material :* A retrospective study was conducted on first ten IMRT plans of prostate cancer patients . A total of 10 patient's R.T. plans were reviewed who were treated radically using IMRT technique. One of the patient received RT in adjuvant setting after radical prostatectomy while the rest were treated with RT in definitive setting. Total radical doses delivered were in the range of 66.6 – 79.2 Grays. The Rectal doses were analyzed using data extracted from approved plans using dose volume histograms (DVH) . Doses of 60, 65, 75 & 78 Grays were analyzed for the % volume of rectum receiving RT. According to RTOG guidelines 78 Grays should be received by less than 5 % volume. Likewise, for 75 Grays it should be less than 15% while at 65 Grays it is quoted as 35% and for dose of 60 Grays it should be less than 55%.

*Results:* In our study mean % volume of rectum was found to be 2.1 % at 78 Gy, 9.83% at 75 Gy, 29.2 % at 65 Gy and 34.5% at 60 Gy.

*Conclusion :* Dose escalation of Radiotherapy can be done with limited side effects of gastrointestinal tract by keeping rectal doses within acceptable tolerance levels .

*Keywords:* prostate cancer, intensity modulated radiation dose (IMRT), rectal dose

#### 8.43

### THE EFFECT OF INDIVIDUALIZED PATIENT EDUCATION WITH EMOTIONAL SUPPORT ON THE QUALITY OF LIFE AT A PUBLIC HOSPITAL KARACHI

*Sehrish Pirani, Aasho Ali, Dr. Raisa Gul, Ahmed Mateen, Shafquat Rozi*  
School of Nursing & Midwifery, Departments of Oncology and Community Health Sciences, Aga Khan University, Karachi

*Introduction and Background:* The purpose of this study was to determine the effect of the individualized patient education with emotional support on the quality of life (QoL) and self-efficacy of breast cancer patients undergoing chemotherapy and the feasibility of the intervention in the Pakistani context.

*Method:* A quasi-experimental design with pre and post-test in two groups via time block were used. A total of 50 patients, 25 each in intervention and control groups at a public hospital in Karachi participated in the study. The intervention consisted of six-weeks and it comprised of verbal and written patient education, availability of the nurse during patients' chemotherapy administration and over the phone as well as telephonic follow up calls by the nurse to the patients. The control group received hospital's routine care. Patients' QoL and self-efficacy were assessed at the baseline and at the sixth week of receiving chemotherapy. Descriptive and inferential statistics were applied for the analysis.

*Result:* A statistically significant improvement was observed in the overall QoL, and physical well-being, emotional well-being, and breast cancer subscale scores of the intervention group when compared with the control group. The intervention effect size was moderate (0.655) for the QoL. In addition, a positive association was found between the QoL and self-efficacy. Moreover, the intervention was well-received by the patients and their families. Individualized patient education and support was found to be effective in improving the patients' QoL over six-weeks' intervention.

**Conclusion :** In view of this finding, considering a small sample size, a larger study in a multi-center setting is recommended.

**Keywords:** Individualized Patient Education, Quality of Life, Breast Cancer

#### 8.44

##### COMPARISON OF TWO DIFFERENT HPLC ANALYZERS FOR THE MEASUREMENT OF HEMOGLOBIN A1C

*Shumaila Qamer, Bushra Moiz,  
Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Introduction:** HbA1c is the combination of glucose & HbA which is relative to the average concentration of glucose in the blood over the past 90 to 120 days. HPLC shows a high degree of precision in the retention time for HbA1c and Hb variants. We have two analyzers (variant-II turbo & variant-II) for measurement of HbA1c, based on HPLC but their throughput is different. These instruments are compared in order to increase the turn around time of HbA1c reporting.

**Objective:** To compare the results of Hb A1c generated through two different HPLC analyzers & to study their result correlation.

**Materials and Methods:** This study was conducted in section of Hematology-Clinical Laboratories, The Aga Khan University Hospital. Study duration was one month (October 2012). We picked 50 different samples of excellent, good and bad glycemic control. These samples were whole blood collected in EDTA and analyzed on Variant II and Variant II Turbo. These analyzers are HPLC based and are provided by BIO-RAD, USA. Result correlation was done using SPSS version 19.

**Results:** Among the 50 samples analyzed, we have 30 samples in the range of HbA1c 4-7%, 10 samples 8-9% and 10 samples 9-15%. Age range was 31-76 yrs with almost equal male to female ratio. The results showed correlation co-efficient of these three glycemic groups as 0.98, 0.95 & 0.92 respectively.

**Conclusion:** Both instruments showed good correlation of results for good, excellent and bad glycemic balance patients. Variant II Turbo has better throughput than Variant II.

**Keywords:** HbA1c, Glycated Hb, variant-II turbo

#### 8.45

##### FIRST CASE OF HAEMOGLOBIN K WOOLWICH IN PAKISTAN – A CASE REPORT

*Sidra Asad Ali, Natasha Ali  
Departments of Paediatrics and Child Health and Pathology & Microbiology, Aga Khan University, Karachi*

**Introduction:** Haemoglobin variants are abnormal haemoglobin which in most of the cases is produced as a result of single point mutation of the amino acid sequence. Over 1100 of these mutant haemoglobins have been described according to database of human hemoglobin variants. Hb K Woolwich is a rare haemoglobin variant which is reported in several Black families from the West Indies, Ghana, and the Ivory Coast. It results as a substitution of lysine by glutamine ( $\beta$ 132 Lys-Gln).

**Objective:** To describe first case of haemoglobin K Woolwich to be identified in Pakistani population.

**Case Presentation :** We report a case of 32 year old male who presented in haematology clinic for evaluation of anemia. He had complaint of weakness and his medical history was otherwise unremarkable. Examination revealed no abnormal findings except pallor. His complete blood count showed haemoglobin of 6.1g/dl with hypochromic, microcytic indices and normal WBC and platelet count. His serum ferritin was found to be low. Haemoglobin electrophoresis done as a part of initial workup showed an abnormal band which moved faster than HbA. For further evaluation, haemoglobin analysis by high performance liquid chromatography was subsequently performed. Results HPLC revealed a peak at the region of P2 with retention time of 1.28 min comprising

22.1% of total Hb, consistent with Haemoglobin K Woolwich.

*Conclusion:* A rare haemoglobin variant is identified in Pakistani population for the first time through careful interpretation of the chromatographic behavior of the haemoglobin using high performance liquid chromatography.

*Keywords:* Haemoglobin K Woolwich, high performance liquid chromatography, haemoglobin electrophoresis.

#### 8.46

##### ASSOCIATION OF FACTOR V LEIDEN G1691A AND PROTHROMBIN GENE G20210A MUTATION WITH RECURRENT PREGNANCY LOSS

*Sidra Asad Ali, Bushra Moiz, Lumaan Shaikh, Amna Nasir*

*Departments of Pathology & Microbiology and Obstetrics and Gynaecology, Aga Khan University, Karachi*

*Introduction:* Familial defects and polymorphisms of clotting cascade proteins protein S, protein C, factor V Leiden G1691A and factor II G20210A are linked with increased risk of thromboembolism which is better known as inherited thrombophilia. Thrombophilia causes deep venous thrombosis, pulmonary embolism and is strongly associated with poor pregnancy outcomes. Pathophysiology of these outcomes is thought to involve thrombosis in uteroplacental blood flow hence, anticoagulation therapy can be helpful. There is local limited data on the role of these genetic abnormalities causing adverse pregnancy outcomes.

*Objective:* Determine the association of factor V Leiden G1691A and prothrombin gene G20210A mutation with recurrent pregnancy loss.

*Methods:* It is an ongoing prospective case control study, being conducted at clinical laboratory, section of haematology, and PCR-RFLP technique is used. Females with recurrent pregnancy loss coming to obstetrical clinic are recruited as cases. Control samples are selected from females with  $\geq 2$  consecutive normal

pregnancies. Calculated sample size is 100 which comprise of 50 cases and 50 controls.

*Results:* So far, factor V Leiden and prothrombin gene mutation has been performed in 40 cases (mean age 28.6years) and 20 controls (mean age 34.8years). One case(1/40) had heterozygous mutation of factor V Leiden G1691A and while none was identified in control arm(0/20). Heterozygous prothrombin gene mutation was identified in one case (1/40) while none of the controls (0/20) exhibited this mutation.

*Conclusion:* Preliminary results showed that there is no association of factor V Leiden and prothrombin gene mutation with recurrent pregnancy loss.

*Keywords:* factor V Leiden G1691A, Promthrombin gene G20210A, recurrent pregnancy loss

#### 8.47

##### MSI STATUS IN EARLY ONSET SPORADIC COLORECTAL CANCER PATIENTS IN PAKISTAN

*Sobia Rafiq, Aisha Rashid, Noorjehan Sarfaraz, Sabeeh Siddiqui, Nauman Zahir, Rashida Ahmed, Munira Moosajee, Kulsoom Ghias, Departments of Biological & Biomedical Sciences, Pathology & Microbiology and Oncology, Aga Khan University, Karachi*

*Introduction:* Colorectal cancer (CRC) is one of the most commonly diagnosed cancers worldwide. Although Pakistan is considered a low risk region, the ratio of early onset CRC cases, (patients diagnosed at age <45 years), is much higher than the international average. It has been hypothesized that early onset sporadic colon cancer is a biologically and clinical distinct entity from typical onset sporadic colon cancer. In colorectal cancer, microsatellite instability (MSI) is an important genetic maker of defective DNA mismatch repair. This study is investigating MSI in early and typical onset CRC in Pakistani population.

*Methods:* This is a retrospective case control study. Cases and control are defined CRC

patients either <45 years (early onset) and >50 years (typical onset) at diagnosis, respectively. Normal and tumour DNA was obtained from CRC patient samples. Five fluorescence-labeled microsatellite markers (BAT25, BAT26, D2S123, D5S346 & D17S250) were amplified through PCR and sequenced to analyze MSI.

**Results:** From the period 2006-2011, we have identified 183 patients with early onset and 1137 patients with typical onset CRC. A subset of these patients from whom adequate tumor tissue and corresponding clinical data are available have been selected for analysis. In early onset CRC patients, 5/30 patients (16.66%) showed microsatellite instability. In 30 late onset colorectal tumors, 3 (10%) were MSI and 27 (90%) were MSS.

**Conclusions:** Additional early and typical onset CRC samples are currently being processed to analyze MSI status, which will be correlated to the available clinical data.

**Keywords:** colorectal cancer, early onset, microsatellite instability

#### 8.48

##### CANCAER KILLER FRUIT : LITERATURE REVIEW

Zohra Hasan Ali Meghani  
School of Nursing & Midwifery, Aga Khan University, Karachi

For past several years many researches has been conducted in order to cure cancer with natural elements. A plant fruit Soursop, commonly known as graviola has been found effective in treating cancerous cells without giving any harm to the normal cells. This fruit is mainly found in cities like Malaysia, Brazil, Peru, Mexico etc. A group of anti-neoplastic agents: Annonaceous acetogenins acts on the cell cycle at G1 stage and inhibits the growth. These acetogenins can be isolated from the bark, leaves, stems and fruit seeds. The doses can vary from 2-4 ml tincture of any part of the fruit three times a day. It has found to be 10000 times more effective than chemo drugs. It is better than chemotherapeutic agents in sense that it does not have severe side

effects chemo drugs have like alopecia; darkening of skin etc. Literature says that it has been found effective in lung, colon, pancreatic, breast, liver and multi-drug resistant breast cancers. It is contraindicated during pregnancy, to patients who have low blood pressures or are on antihypertensive. This fruit may cause sedation and kill the friendly bacteria in the gastrointestinal tract. It can be used as complementary therapy along with the chemotherapeutic drugs. Other than that it has been found useful for many other diseases like Parkinson's disease. The researchers suggest that for treatment of cancer it should be taken as a complementary therapy along with chemotherapeutic drugs.

**Keywords:** graviola, anti-cancer elements, chemotherapeutic drug

#### 8.49

##### ASSESSMENT OF EGFR MUTATIONS IN PAKISTANI LUNG ADENOCARCINOMA FOR PREDICTING RESPONSE TO TARGETED THERAPY

Zeeshan Ansar Ahmed, Shahid Pervez, Toheed Kausar, Areeba Siddiqui and Tariq Moatter  
Department of Pathology & Microbiology, Aga Khan University, Karachi

**Objective:** To screen for EGFR mutations in tumor tissue of NSCLC patients by Cobas EGFR mutation test.

**Introduction:** In lung cancer, the discovery of acquired genetic alteration in EGFR has changed the way it is currently being diagnosed and treated. EGFR mutation screening has become imperative for the selection of metastatic NSCLC patients eligible for targeted treatment. This report presents distribution of EGFR mutations in 38 NSCLC patients.

**Methods:** EGFR mutation in tumor samples was screened by multiplex real time PCR (Roche Diagnostics, USA) according to the manufacturer's instructions. Briefly, DNA from FFPE tissue, obtained from Histopathology sections, was extracted and amplified with primers and probes specific to 43 different

EGFR mutations in Cobas z 480 instrument. The assay can detect 43 mutations in four exons (18-21) of EGFR gene, including several point mutations, deletions and insertions.

*Results:* Out of 38 patients, 21 were male and 17 were females; male to female ratio was 1.2. The mean age of the patients was 60 years and age distribution was 5.5 and 85 years. On the basis of histopathological finding tumors were categorized into two groups; well to poorly differentiated adenocarcinoma 27(71%) and metastatic adenocarcinoma 11 (29%). EGFR mutation Del 19 was detected in 7 patients, whereas L858R mutation was found in 6 patients. In one patients compound mutation [S768I and G719X] was observed. EGFR mutations were more common in female patients (67%) compared to male. In addition, none of the 43 mutations was detected in 14 tumors samples.

*Conclusion:* Our study showed Del 19 and L858R were the most frequent mutations in Pakistani lung cancer patients. In additions, more than 50% of the patients were found eligible for targeted therapy.

*Key words:* EGFR, NSCLC, Mutations, Gene, TKI

### **8.50** PAPILLARY CARCINOMA IN THYROGLOSSAL DUCT CYST WITH NODAL METASTASIS IN THE PRESENCE OF A NORMAL THYROID GLAND

*Ali Asghar, Muhammad Qamar Masood*  
*Section of Endocrinology, Department of*  
*Medicine, Aga Khan University, Karachi*

*Background:* Thyroglossal duct cyst is the most common congenital anomaly of the neck. Occurrence of papillary thyroid carcinoma in thyroglossal duct cyst with nodal metastasis in the presence of a normal in situ thyroid gland is rare.

*Case presentation:* We present the case of a 44 year old male, who presented with anterior midline neck swelling. The swelling was present since birth, but had been gradually increasing in

size recently. CT scan of neck showed a 7.0 x 5.0 x 4.5 cm multi-loculated well defined cystic mass, incorporating an enhancing area within it measuring 1.9 x 1.7 cm showing calcification. Fine needle aspiration revealed a benign cystic lesion. Therefore a sistrunk's procedure was performed. Histopathology showed papillary carcinoma of thyroid. Subsequent ultrasound examination of neck revealed few lymph nodes in left cervical chain but a normal thyroid gland. Nodal metastasis was suspected with thyroid gland thought as the likely primary site of origin for the cancer. Total thyroidectomy with bilateral neck dissection was done. Histopathology showed benign thyroid tissue with lymph node metastasis. Patient subsequently received radioactive iodine ablation and long term TSH suppressive therapy. There is no recurrence of disease after 18 months of follow up.

*Conclusion:* This case depicts a rare presentation of papillary carcinoma in thyroglossal duct cyst with nodal metastasis but a normal in situ thyroid gland. This case highlights the fact that malignancy should always be considered while dealing with thyroglossal duct cysts, and nodal metastasis may be present with a normal thyroid gland.

*Keywords:* Thyroglossal duct cyst, papillary thyroid carcinoma, nodal metastasis

### **8.51** MULTIPLE BROWN TUMOURS MIMICKING MULTIFOCAL GIANT CELL TUMOUR IN PRIMARY HYPERPARATHYROIDISM

*Ali Asghar, Asma Ahmed*  
*Section of Endocrinology, Department of*  
*Medicine, Aga Khan University, Karachi*

*Background:* Primary hyperparathyroidism is an uncommon disease. In the past, it was usually the symptoms that pointed towards this disease. But today, it is usually the asymptomatic hypercalcemia detected on routine laboratory investigations that give the diagnostic clue. Longstanding primary hyperparathyroidism

leads to increased bone resorption and osteopenia. Rarely, it presents as brown tumours. Brown tumours are non-neoplastic lesions that mainly occur in secondary hyperparathyroidism, but are extremely rare manifestation of primary hyperparathyroidism. They appear as lytic lesions on X-ray imaging & giant cells on histopathology. Their main differential diagnosis is giant cell tumour of the bone.

*Case presentation:* We report the case of a 34 year old lady, who had a ground level fall leading to right humerus fracture. There is history of hairline fracture of the right humeral shaft four years ago as well. Examination revealed bony prominences over nasal bridge and right third metacarpal bone. Her corrected serum calcium was 13.4 mg/dL. She underwent open reduction and internal fixation of her right humerus. Histopathology showed giant cell tumour. Skeletal survey showed generalized osteopenia, multiple lytic areas, multiple old fractures and medullary nephrocalcinosis. A diagnosis of multi-focal giant cell tumour of the bone was made. She was treated with monthly 4mg intravenous zoledronic acid for next eight months. But her serum calcium remained high. Subsequently, her intact parathyroid hormone level (PTH) came out to be 2326 (16-87) pg/mL. Ultrasound neck and sestamibi scan revealed parathyroid adenoma. The lesion was surgically excised. Serum calcium and intact PTH normalized after surgery.

*Conclusion:* This case highlights the rare clinical manifestation of primary hyperparathyroidism in the form of brown tumours. It also emphasizes the fact that brown tumour of hyperparathyroidism should always be ruled out by checking PTH level, before a diagnosis of giant cell tumour of the bone is made.

*Keywords:* Brown tumour, giant cell tumour, primary hyperparathyroidism

## 8.52

### A CASE OF NON-FUNCTIONING CYSTIC PITUITARY ADENOMA

Ali Asghar, Asma Ahmed

Section of Endocrinology, Department of Medicine, Aga Khan University, Karachi

*Background:* Cystic mass lesions within the sella are uncommon in clinical practice, yet they are

commonly seen in autopsy studies. Cystic degeneration of the pituitary adenoma is the most common cystic lesion within the sella. Cystic pituitary adenoma can be both functional as well as non-functional. Other causes of cystic sellar lesions include craniopharyngioma, Rathke's cleft cyst and arachnoid cyst.

*Case presentation:* We report the case of a 38 year old lady, who presented with worsening headache for last two years. She had regular menstrual periods. She did not have visual disturbance or galactorrhea. On examination, she had normal visual field by confrontation testing. Laboratory investigations revealed normal anterior pituitary function, apart from a mildly elevated prolactin level of 42 (1.9-25.0) ng/mL. MRI of sella revealed a 1.6 x 1.6 x 2.5 cm cystic lesion in the sella, with rim enhancement, extending to the suprasellar region, with mild compression of the optic chiasma. The MRI of sella raised radiological suspicion of Rathke's cleft cyst. She underwent a trans-sphenoidal drainage of the cyst and a tissue biopsy was obtained. The histopathology showed multiple small fragments of neoplastic tissue, 0.7 x 0.4 cm in aggregate, which was pituitary adenoma. She received steroids perioperatively. A month after surgery, she had normal anterior pituitary hormones, with a screening MRI of sella showing significant reduction in the size of the sellar cyst, with post-operative changes.

*Conclusion:* This case highlights an uncommon case of non-functioning cystic pituitary adenoma. The prolactin level was mildly elevated, which most probably indicated stalk effect, rather than a prolactinoma. Previous studies have also shown that about half of these cystic pituitary adenomas have mildly elevated prolactin levels. Although pituitary adenoma is the most common cystic lesion of the sella, differential diagnosis should always include craniopharyngioma, Rathke's cleft cyst and arachnoid cyst.

*Keywords:* Cystic pituitary adenoma, non-functioning, sella, prolactin

### 8.53 DIAGNOSTIC VALIDITY OF THYROID ULTRASONOGRAPHY IN THYROID NODULES

*Nanik Ram, Zahid Anwar, Najmul Islam  
Section of Endocrinology, Department of  
Medicine, Aga Khan University Karachi*

*Introduction:* Palpable thyroid nodules occur in about 5% of the population. Approximately 5–9% of thyroid nodules are malignant. A thyroid ultrasound scan is recommended in the assessment of any suspected thyroid nodule. The ultrasound characteristics of nodules have been shown to be useful in assessing their malignant potential. The aim of this study is to determine diagnostic validity of thyroid ultrasound in differentiating benign & malignant thyroid nodule.

*Material and Methods:* It was cross sectional study, conducted at Aga Khan University Hospital Karachi from August 2011- July 2012. All patients of either gender with thyroid nodules referred for ultrasound thyroid and FNAC were included. Patients with known thyroid malignancy, pure cystic lesion, indeterminate, non-diagnostic, suspicious finding in cytology without subsequent surgery were excluded. Ultrasonography was performed by radiologists with Toshiba US machines. The ultrasound parameters were assessed and compared with FNAC results in all nodules. Diagnostic validity of each ultrasound feature was calculated. Study was approved from Ethical Review Committee of Hospital.

*Results:* Total 101 patients were included in the study on this basis of availability of ultrasound images, pathology report and after exclusion. Mean age of patients was 43 ±13 Years (Range 15-73 Years) and n=81(80%) were females. Among 101, n=96 benign and n=5 nodules were malignant on histocytopathology. The sensitivity & specificity of each ultrasound feature in predicting malignancy were: microcalcification, 80% 68%; hypoechogenicity, 80% 52%; ill defined lobulated margin, 40% 96%; solid, 80% 40%; taller than wider, 50% 63% respectively. Each US feature have negative predictive value ranges from 95-98%.

*Conclusion:* Identification of microcalcification, hypoechogenicity & solid with ill defined margins thyroid nodules on ultrasound is helpful in

diagnosing thyroid malignancy and warrants urgent diagnostic biopsy.

*Keywords:* Thyroid Nodule, Ultrasonography, Validity

### 8.54 PARATHYROID ADENOMA PRESENTING AS BROWN TUMOR OF TIBIA MISDIAGNOSED AS A GIANT CELL TUMOR

*Rabia Basit, Qamar Masood  
Section of Endocrinology, Department of  
Medicine, Aga Khan University, Karachi*

*Background:* Parathyroid adenoma is the commonest cause of hypercalcemia and usually presents with symptoms and signs of hypercalcemia. This case highlights an unusual presentation.

*Case Report:* A 26 years old female presented in the surgical clinic with a painful right tibial swelling suspicious of neoplasia. An incisional bone biopsy was performed. Based on the histology result, a giant cell tumor of right tibia was diagnosed. Surgical excision of the mass was carried out. Intact Parathyroid hormone level (PTH) was sent, confirming hyperparathyroidism. Serum calcium was 11.5 mg/dL, with corrected calcium of 12.22 mg/ dL, phosphorus was 1.7 mg/dL, consistent with primary hyperparathyroidism. Ultrasound scan revealed a hypochoic lesion on the inferior pole of left thyroid gland in the region of the left inferior parathyroid gland. Tc Sesta MIBI scan showed a focus of uptake and retention at the inferior aspect of the left thyroid lobe in the region of left parathyroid gland. A 24 hour urinary calcium level was 222mg. Subsequently a diagnosis of primary hyperparathyroidism with a parathyroid adenoma was made.

*Conclusion:* This case highlights the importance of a thorough history and examination. Clinicians should always bear in mind atypical presentations of parathyroid adenomas, with the need to exclude this differential in the presence of hypercalcemia

*Keywords:* Primary hyperparathyroidism, Giant cell tumor, Brown tumor.

### 8.55

#### DEVELOPMENT OF SKIN HYPOPIGMENTATION IN A PATIENT WITH METASTATIC PAPILLARY CARCINOMA THYROID TREATED WITH SORAFENIB

Syed Zubair Hussain, Mubashir Ikram, Najmul  
Islam

Section of Endocrinology, Department of  
Medicine, Aga Khan University, Karachi

**Background:** Tyrosine kinase inhibitors (TKI'S) can be considered as the standard option of treatment in patients with metastatic radioiodine refractory differentiated thyroid cancers . The cutaneous manifestations of Sorafenib include rash, desquamation, hand foot skin reactions, pruritus, alopecia and erythema. We report the first case of hypopigmentation related to sorafenib therapy.

**Case presentation:** We report the case of a middle aged gentleman with metastatic papillary carcinoma of thyroid diagnosed in 2005. He was managed with total thyroidectomy, radioactive iodine and TSH suppressive therapy. Despite receiving radioactive iodine 530 mci cumulative dose, patient had persistant disease with lung metastasis. Therefore a TKI, Sorafenib, was started at a dose of 400 mg twice daily. He developed hypopigmentation of the skin more prominent on face 6 weeks after starting Sorafenib treatment. He also developed diarrhea, desquamation of hands and feet, hair loss over scalp, eye brows and moustache. Sorafenib treatment was discontinued. His diarrhea stopped in one week, his skin became normalized in 4 weeks and he regained his hairs in six weeks.

**Conclusion:** To our knowledge, Hypopigmentation in our patient appears to be the first reported of its kind in the literature to date. Sorafenib is used in Renal cell carcinoma, Hepatocellular carcinoma and radioactive iodine refractory thyroid carcinoma, therefore it is very important to be aware of hypopigmentation as a potential side effect for both physicians and patients. Further studies are needed to unveil the pathophysiology of this unique side-effect of hypopigmentation with sorafenib in differentiated thyroid cancer patients.

**Keywords:** Thyroid Carcinoma, Sorafenib, Hypopigmentation

### 8.56

#### CLINICAL PRESENTATION OF YOUNG PATIENTS WITH COLORECTAL CANCER

Abdullah Bin Khalid<sup>1,2</sup>, Syed Ahsan<sup>2</sup>, Zahid  
Azam<sup>1,2</sup>, Shahid Majid<sup>1,2</sup>, Saeed Hamid<sup>2</sup>, Wasim  
Jafri<sup>2</sup>

<sup>1</sup>National Institute of Liver & GI Diseases

(NILGID), Dow University Hospital, Karachi

<sup>2</sup>Section of Gastroenterology Department of  
Medicine, Aga Khan University, Karachi

**Introduction:** Colorectal cancer (CRC) is a potentially preventable as well as treatable cancer by early screening and diagnosis. Studies have shown that CRC presents at an early age in South Asian population. We therefore aim to find the clinical presentation and stage of the disease in young patient with CRC.

**Materials and methods:** Data of all patients with CRC from Jan 2010 till January 2013 was collected from National Institute of Liver & GI Diseases (NILGID), Dow University Hospital, Karachi and The Aga Khan University Hospital, Karachi. Symptomatology of patients and the stage of the disease at diagnosis were recorded. Patients were divided into 2 groups. Group 1 comprised of patients with CRC who are younger than 50 years and group 2 more than 50 years of age having CRC. Lesions located distal to the splenic flexure were characterized as distal lesions while lesions located proximal to the splenic flexure were characterized as proximal lesions. Staging of CRC was done by TNM (for tumors/nodes/metastases) system, from the American Joint Committee on Cancer (AJCC).

**Results:** Total of 206 patients were found to have CRC during the study period. 124(60%) patients were more than 50 years of age while 82(40%) patients were less than 50 years of age. The mean age of presentation of CRC in our cohort was 53.7±16 years. 130(63%) patients were males while the rest were females. 127(61%) patients had distal lesions while proximal lesions were found in 76(36) patients; 3 patients had both distal and proximal lesions. Bleeding PR was the commonest etiology in both groups 38(46%) in group 1 and 40(32%) in group 2 (P= NS), followed by anemia in 12% and 13% in group 1 and group 2 respectively



(P= NS). Regarding stage of the disease at presentation majority of patients in both groups had stage 3 disease at presentation; 43% in young patients vs 42% in older group(P= NS) while 36% and 32% of patients had stage 2 disease at presentation. (P= NS).

*Conclusion:* The predominant symptom among young patients with CRC is bleeding PR followed by anemia and weight loss. Majority of young patients present with advanced disease. Both the symptomatology and stage of the disease at presentation are similar to their elder counterparts. Hence a high index of suspicion and increased awareness of symptoms is required for the young population as well to diagnose and treat them early in the course of disease.

*Keywords:* Colorectal cancer, young patients.

### 8.57 PREDICTORS OF MORTALITY AND RECURRENCE OF THE HEPATOCELLULAR CARCINOMA (HCC) IN THE PATIENTS AFTER LIVER TRANSPLANTATION

Rustam Khan,<sup>1,2</sup> Jason Chang Pik Eu,<sup>1</sup> Safia Awan,<sup>2</sup> Cheow Peng Chung<sup>3</sup> and Tan Chee Kiat.<sup>1</sup>  
<sup>1</sup>Department of Gastroenterology and Hepatology, Singapore General Hospital Singapore, <sup>2</sup>Aga Khan University Hospital Karachi Pakistan and <sup>3</sup>Department of General Surgery, Singapore General Hospital Singapore.

*Background:* Hepatocellular carcinoma (HCC) is a common malignancy in Asia for which orthotopic liver transplantation (OLT) offers curative treatment in selected patients.

*Aims:* To determine the predictors of mortality and recurrence of HCC in the patients transplanted for HCC in Singapore General Hospital and to compare the survival of the patients transplanted for HCC with those transplanted for non-HCC related diseases.

*Methods:* Medical records of patients transplanted for HCC were reviewed. Survival after OLT and factors associated with mortality and recurrences were determined. Kaplan Meier graph for survival in HCC patients was compared with patients transplanted for non-HCC related diseases

*Results:* Twenty-four patients were transplanted for HCC of which 21(87.5%) were male. At median follow up of 36 months, 8 (33%) patients died and 2(8.3%) mortalities were due to recurrence of HCC. Factors associated with mortality were more than three lesions (p< 0.001), largest HCC lesion>6.5cm (p<0.001), micro vascular invasion (p<0.01) and associated cholangiocarcinoma on explanted liver (p<0.001) and living donor liver transplantation (p<0.02). Three patients had recurrence of HCC. Factors associated with recurrence were number and size of lesions beyond UCSF criteria, micro vascular invasion and associated cholangiocarcinoma on explanted liver. A control group of thirty patients who received liver transplantation for diseases other than HCC during the same period had 2 (6.6%) mortalities with overall survival at one, three and five years of 100%, 96%, and 93% respectively.

*Conclusions* HCC with large size and increase number of lesions, micro-vascular invasion, associated cholangiocarcinoma and living donor liver transplantation were associated with increased mortality in patients transplanted for HCC. Lesions beyond UCSF criteria and concomitant cholangiocarcinoma were associated with increased recurrence of HCC. Survival of the patients transplanted for non HCC cases were better than HCC.

*Keywords:* predictors of mortality and recurrence of HCC, transplant and HCC, Liver transplant, Hepatocellular carcinoma.

### 8.58 SURVIVAL RATES AND PROGNOSTIC FACTORS FOR UNRESECTABLE HEPATOCELLULAR CARCINOMA AFTER TRANSCATHETER ARTERIAL CHEMOEMBOLIZATION

Amna Subhan Butt<sup>1</sup>, Saeed Hamid<sup>1</sup>, Nazish Butt<sup>1</sup>,  
Tanveer -Ul- Haq<sup>2</sup>, Faraz Kazmi<sup>3</sup>, Sajjad Ali<sup>3</sup>,  
Wasim Jafri<sup>1</sup>  
<sup>1</sup>Section of Gastroenterology, Department of  
Medicine, <sup>2</sup>Department of Radiology, <sup>3</sup>Aga Khan  
University, Karachi

*Background:* Transcatheter arterial chemoembolization (TACE) is recommended as palliative treatment for unresectable Hepatocellular

carcinoma (HCC). No data is available from Pakistan in this regard.

*Aims:* To estimate the survival of the patients with unresectable HCC treated with TACE and to analyze the prognostic factors affecting survival.

*Methods:* All patients diagnosed with unresectable HCC who underwent for TACE during 2000-2011 at The Aga Khan University Hospital, Karachi, Pakistan were reviewed. Child-Pugh and MELD score were used to define severity of liver disease. Information was collected regarding demographic characteristics, baseline laboratory parameters, tumor characteristics and staging, response to TACE and survival. Survival at 1, 3 and 5 years and the predictors for survival were estimated.

*Results:* TACE was performed in 350 patients with HCC. Mean age was  $57.60 \pm 10.06$  years and 75% were males. Hepatitis C was the most prevalent (73.7%) etiological factor. Mean Childs and MELD score was  $7.11 \pm 1.61$  and  $19.34 \pm 4.70$  respectively. Median AFP was 51.98 (range 1.20-100,000) IU/ml. The mean tumor size was  $6.1 \pm 3.31$  cm. A total of 46.6%, 22.0%, 22.6% and 8.8% had solitary, paucifocal, multifocal and infiltrative/massive HCC respectively. Majority of patients (65.7%) had one session of TACE while two sessions were done in 24.0%, three sessions in 6.0%, four sessions in 2.3% and five sessions were done in 2% patients. The follow-up duration ranged 1-120 months. The overall median survival was 28.000 months (95% CI 20.43-35.56). Moreover, the cumulative 1-year, 3-year, and 5-year survival rates were 82%, 38%, and 20%, respectively.

Age >65 years (Hazard ratio 2.50; 5% CI 1.40-4.47; p 0.002), Child's class B (Hazard ratio 2.54; 5% CI 1.48-4.38; p 0.001), advanced HCC (Hazard ratio 2.13; 95% CI 1.29-3.52; p 0.003) and incomplete tumor response (Hazard ratio 2.12; CI 95% 1.28-3.05; p-value 0.02) were the factors associated with a poor survival.

*Conclusions:* TACE was useful and well tolerated palliative therapy for unresectable HCC. Age >65 years, Child's class B, advanced HCC and incomplete tumor response were the factors associated with a poor survival.

## 8.59

### MIDDLE AGE MALE PRESENTING WITH RIGHT KNEE SWELLING

Sara Sajid, Farhala Baloch

Section of Internal Medicine, Department of Medicine, Aga Khan University, Karachi

*Introduction:* The site of origin of a histologically documented carcinoma is not identified clinically in approximately 3% of patients; this situation is often referred to as carcinoma of unknown primary (CUP) origin or occult primary malignancy. Majority of CUP are adenocarcinomas or undifferentiated tumors and less commonly, squamous cell carcinoma, melanoma, sarcoma, and neuroendocrine tumors. The prognosis for patients with CUP is poor. As a group, the median survival is approximately 3 to 4 months with less than 25% and 10% of patients alive at 1 and 5 years, respectively.(2)

*Case Report:* This is the case of a 45 years old male Functional class 1 with no prior co-morbid who presented to us with right knee swelling, abdominal pain and fever for 2 months. On examination he was mildly anemic, icteric with hepatomegaly and had pitting edema of right ankle. Right knee was warm, tender and swollen with decreased range of movement. CT scan of the abdomen showed multiple cystic and solid mass lesions of various sizes in the both lobes, showing peripheral enhancement and causing mass effect on porta hepatis. MRI of the right knee showed multiple marrow replacement areas in the epiphysis and adjacent diaphysis of femur, tibia and fibula with cortical erosion and minimum soft tissue component showing patchy enhancement and diffusion restriction. Simultaneous right knee and liver biopsy was done and patient was discharged on request with advice to follow up with biopsy reports. Tissue from right proximal tibia showed metastatic squamous cell carcinoma. Tissue from liver showed metastatic squamous cell carcinoma of liver. The patient expired before any further workup could be done

*Conclusion:* Metastatic squamous cell carcinoma with unknown primary site is rare entity and comprises approximately 5 percent of CUPs and metastasis to liver is very rare as in our case.

*Keywords:* Cancer of unknown Primary, Squamous cell metastases

### 8.60

#### ACUTE KIDNEY INJURY IN LYMPHOMA: A SINGLE CENTRE EXPERIENCE

*Abdul Mabood Khalil, Abdul Rehman Qureshi, Hira Latif, Maria Ahmed, Uzair Mushtaq, Zarghoona Khalil, Safia Awan*  
*Section of Nephrology, Department of Medicine, Aga Khan University, Karachi*

**Background:** Acute kidney injury (AKI) is on rise worldwide. Acute kidney injury causes significant morbidity and mortality. Acute Kidney Injury is least studied complication of lymphoma. Tumor lysis syndrome, sepsis, use of nephrotoxic medication, obstruction of urinary tract and lymphomatous infiltration of kidney can cause kidney injury. The presence of AKI can potentially delay chemotherapy in patient with lymphoma. This study was carried out to determine frequency and predictor of AKI in lymphoma and to study the impact of AKI on hospital stay and mortality.

**Objectives:** To determine frequency and predictor of AKI in lymphoma and to study the impact of AKI on hospital stay and mortality.

**Methods:** This was a retrospective observational study conducted from January 2008 to December 2011 at Aga Khan University Hospital in patients who presented with lymphoma. Baseline characteristics were analyzed for all eligible participants (n=365). Continuous variables with normal and non-normal distributions were reported as mean (SD) and median [range], respectively. The Chi-square and t-tests were used to test for significance for associations between the outcome and possible risk factors. All P-values were two tailed and were considered statistically significant if <0.05.

**Results:** Out of 365 patients 121 patients (33.2%) developed AKI. Increasing age  $53.62 \pm 15.20$  (0.006), median hospital stay 6 days (<0.001), maximum median creatinine 2 (<0.001), diuretic use in 22.3% (<0.001), aminoglycosides use in 9.9% (0.001), vancomycin use in 14% (0.03), RCVP in 12.4% (0.002), sepsis in 63.1% (<0.001) and tumor lysis in 17.4% (<0.001) were found to be significant on univariate analysis. Sepsis [Odd ratio (OD) 3.89; 95% CI 1.67-9.07], use of aminoglycosides [Odd ratio (OD) 4.54; 95% CI 1.16-17.7] and presence of tumor lysis syndrome [Odd ratio (OD) 3.85; 95% CI 1.54-9.59] was found to be important predictor for development of

AKI. AKI resulted in prolonged hospital day and mortality was reported in 14% patients in AKI with lymphoma.

**Conclusions:** Around one third patients with lymphoma develop AKI. Acute kidney injury was significantly associated with sepsis, use of aminoglycoside and presence of tumor lysis syndrome in patients with lymphoma and resulted in significant increased hospital stay.

### 8.61

#### TRANSFUSION THERAPY AS A SOLE TREATMENT OPTION IN A THALASSEMIA PATIENT WITH ACUTE PARAPLEGIA - A CASE REPORT AND REVIEW OF LITERATURE

*Sana Rashid, Sarwar Jamil Siddiqui*  
*Section of Neurology, Department of Medicine, Aga Khan University, Karachi*

Spinal haematopoiesis is an extremely rare phenomenon in patients with Thalassaemia intermedia. Various modes of therapy are available. Our patient with Thalassaemia intermedia who developed paraplegia due to spinal haematopoiesis was successfully treated with blood transfusion alone.

**Keywords:** Extra medullary haematopoiesis, Thalassaemia intermedia, Paraplegia

### 8.62

#### CLINICAL FEATURES AND OUTCOME OF SPORADIC COLORECTAL CARCINOMA IN YOUNG PATIENTS: A SINGLE CENTER, CROSS SECTIONAL ANALYSIS

*Muhammad Nauman Zahir<sup>1</sup>, Esha Mahpara<sup>2</sup>, Sobia Rafiq<sup>2</sup>, Kulsoom Ghias<sup>2</sup>, Munira Shabbir-Moosajee<sup>1</sup>*

*<sup>1</sup>Department of Oncology, <sup>2</sup>Department of Biological & Biomedical sciences, Aga Khan University, Karachi*

**Background:** Early onset colorectal carcinoma (CRC), defined as CRC at age below 45 years is rare. However, an increasing incidence has been noted in Southeast Asia. It is hypothesized to be a biologically and clinically distinct entity personifying aggressive disease and a worse

survival. Data on this subject is scarce from this part of the world.

*Objective:* Our objective was to study the clinical presentation and outcome of early onset sporadic CRC in patients at a single tertiary care center in Pakistan.

*Methods:* Data was collected by a retrospective chart review. 131 patients were found eligible for the period between January 1, 2004 and December 31, 2011. A pre-designed and coded questionnaire was used and analysis was done using SPSS. Cox proportional hazard model was used to compute prevalence ratios.

*Results:* Early onset sporadic CRC accounted for 32% of all CRC treated in the specified time period. Colon and rectal cancers accounted for 55% and 45% of patients respectively. The mean age was  $33.3 \pm 7.9$  years and the male to female ratio was 2:1. 96% of rectal carcinoma patients received appropriate therapy as opposed to 65% of colon cancers. On multivariate analysis, signet ring morphology (PR 2.39, CI 1.19-4.80) and appropriate reception of neoadjuvant/adjuvant therapy (PR 4.52, CI 1.05-19.5) remained significantly associated with rectal cancers as opposed to colon cancer when adjusted for all other variables. Median survival was 19 months. However, Kaplan-Meier analysis revealed a trend towards an inferior survival for rectal carcinoma 2 years after initial diagnosis.

*Conclusion:* A high incidence of early onset CRC is noted in our population of which almost half had rectal disease. This group had a higher prevalence of poor prognostic factors and showed a trend towards inferior prognosis 2 years after diagnosis despite the fact that a larger percentage of patients from this group had completed appropriate therapy.

*Keywords:* Early onset, colorectal carcinoma, clinical presentation, outcome

### 8.63

#### 5-FLUOROURACIL INDUCED VASCULITIC INJURY MANIFESTING AS MULTI-ORGAN DYSFUNCTION

Mohammad Faizan Zahid<sup>1</sup>, Nehal Masood<sup>2</sup>,  
Munira Shabbir Moosajee<sup>2</sup>

<sup>1</sup> Medical College, <sup>2</sup> Department of Oncology,  
Aga Khan University, Karachi

We report a case of simultaneous dysfunction of three organ systems after the administration of 5-fluorouracil (5-FU) based chemotherapy. A 29 years old man was admitted to our hospital for consolidation chemotherapy for metastatic adenocarcinoma of the esophagus. He was admitted electively for carboplatin and 5-FU infusion. Patient was asymptomatic on admission. On the third day of the cycle he developed acute renal insufficiency along with shortness of breath and supraventricular tachycardia of 150 beats/minute. He then developed ventricular tachycardia followed by spontaneous conversion to sinus rhythm. Subsequent echocardiogram showed reduced left ventricular systolic function with an ejection fraction of 15-20%. Chemotherapy was immediately discontinued.

Hours later the patient had sudden onset of confusion, aphasia, right hemianopia and right sided mouth drop. Creatinine now had increased further to 2.5 mg/dL. MRI of the brain showed acute demyelination in the periventricular white matter, most likely secondary to a vascular event. He was started on pulse dose of methyl prednisone 250mg every 6 hours. After 3 hours of the first dose, the patient showed rapid resolution of confusion and aphasia. Creatinine, upon subsequent investigations, eventually returned to baseline. On his last outpatient follow up the patient does not show any residual neurological deficits.

Multisystem manifestation pointed towards to diffuse systemic process. We hypothesized that the events could be a result of a vascular injury secondary to chemotherapy, most likely 5-FU, given the temporal relationship between the underlying malignancy, infusion of the chemotherapy, appearance of symptoms with a rapid resolution of symptoms upon administration of steroids.

This case highlights an iatrogenic vasculitic process. Although vasculitic involvement of coronary, cutaneous and intestinal vasculature have separately been reported to be associated with 5-FU chemotherapy, multisystem adverse reactions involving three organ systems simultaneously have not been reported in literature.

#### 8.64

##### EWING'S SARCOMA ARISING FROM THE ADRENAL GLAND IN A YOUNG MALE: A CASE REPORT

Muhammad Nauman Zahir<sup>1</sup>, Tayyaba Zehra Ansari<sup>1</sup>

<sup>1</sup>Department of Oncology, Aga Khan University, Karachi

*Introduction:* The Ewing sarcoma family of tumors (ESFTs) share similar histologic and immunohistochemical features, characteristically expressing CD99 (MIC2 antigen) and harboring the defining translocation t(11;22) (q24;q12). ESFTs typically involve the extremities and the axial skeleton but less commonly arises in soft tissue and rarely in parenchymal organs. Only a few cases of primary adrenal ESFTs have been reported in literature.

*Case Presentation:* A 17 year old Asian male was referred to the outpatient oncology clinic at our center with a three month history of concomitant pain, swelling and dragging sensation in the right hypochondrium. Abdominal examination revealed a large, firm mass in the right hypochondrium extending into the right lumbar region and epigastrium. His genital exam was unremarkable and there were no stigmata of hepatic or adrenal disease.

Computed tomography (CT) scans revealed a large peripherally enhancing mass in the hepatorenal area, biopsy of which showed a neoplastic lesion composed of small round blue cells which exhibited abundance of glycogen as highlighted by the periodic acid-Schiff (PAS) stain and stained diffusely positive for CD99 (MIC2 antigen). A final diagnosis of ESFTs was made and was followed by a bone scan which

ruled out osseous disease. He has subsequently received his first cycle of chemotherapy.

*Discussion:* ESFTs occur more commonly in adolescents with a peak incidence in the second decade of life with a slight male preponderance. Metastatic ESFTs needs to be considered before a conclusive diagnosis of a primary arising from a parenchymal organ is made. Extensive radiological imaging failed to demonstrate any other site of tumor in our patient's case and other causes of small round blue cell tumors were excluded by an appropriate panel of immunohistochemical stains.

The reporting of this case is important because it reminds us to consider this rare diagnosis when a young patient presents with a large nonfunctional adrenal mass.

*Keywords:* Ewing sarcoma family of tumors, Adrenal, Immunohistochemical

#### 8.65

##### A PATIENT WITH AN ENORMOUS MEDIASTINAL MASS

Saima Kamal, Aamir Hameed, Hassan Bari, Saulat Fatimi

Section of Pulmonary and Critical Care Medicine, Department of Medicine, Aga Khan University Karachi

*Introduction:* Primary liposarcomas rarely arise in the mediastinum, comprise less than 1% of all mediastinal tumors and approximately 17% of all mesenchymal sarcomas. There is no gender difference in the incidence, mean age of onset is between 43–58 years of age and can grow to an enormous size; symptoms such as chest pain, dyspnea, cough, are present in 85% of cases, remaining 15% cases are asymptomatic. The mean tumor size is 15.7 cm (range 2.2–61 cm), and mean weight is 1500 g. The recommended treatment is complete surgical resection with a wide margin. Radiation therapy, chemotherapy, or both are less effective than resection, and reserved for unresectable tumors. Here we present a case with an enormous primary mediastinal liposarcoma.

*Case:* A 29 year old male with no co-morbidities presented to clinic with dry cough, worsening exertional dyspnea, low grade fever. His chest x-ray showed complete opacification of left hemithorax, and ultrasound showed large solid hypoechoic lesion on left side with collapsed lung, CT scan with contrast showed a large mass lesion in the left hemithorax, no abnormality seen in abdomen and pelvis. He had ultrasound guided transthoracic biopsy of the mass showing possibility of lipoblastoma vs liposarcoma. He underwent resection of mass, the tumor was adherent to the mediastinal structures but not invading any major vessel. The left vagus nerve was involved but not invaded by the mass and had to be resected. The tumor was removed in piece meal fashion. Histopathology confirmed diagnosis of well differentiated liposarcoma, the largest piece measured 14 x 7.5 x 4 cm, the smaller tissue piece measured 4 x 3 x 1.5 cm, total weight of 4.19 kilograms. He is being followed in clinic 1 month from procedure.

*Conclusion:* Primary Mediastinal liposarcoma is a rare disease. Surgery is the primary therapeutic modality. Different pathological subtypes have different epidemiological features, biological behaviors, and malignant potentials. Pathological subtype is an important prognosis factor. Patients with well-differentiated tumors have much better prognosis than those with other subtypes.

*Keyword:* Primary Mediastinal liposarcoma, tumor weight, surgical resection

### 8.66

PATIENT WAS BEING TREATED AS PULMONARY EDEMA FOUND TO HAVE NON-SMALL CELL CARCINOMA OF UNKNOWN ORIGIN

*Nousheen Iqbal, Muhammad Irfan, Ahmed Suleman Haque*

*Section of Pulmonary and Critical Care Medicine, Department of Medicine, Aga Khan University Karachi*

*Introduction:* Cancer of unknown primary site (CUP) is a relatively common clinical entity, accounting for 4 to 5 percent of all invasive

cancer. Squamous cell carcinomas (SCCs) comprise approximately 5 percent of CUPs. Here we presented a case of a lady she was treated as pulmonary edema multiple times for her shortness of breath finally come out to be non-small cell carcinoma of unknown primary.

*Case:* 72 years old female house wife resident of Dubai with DM, HTN, IHD and had CABG 10 years back admitted through emergency with complains of Cough for 2 months and shortness of breath for 2 weeks. She was treated multiple times as pulmonary edema during last 6 months in Dubai and Karachi. Her chest x ray showed bilateral diffuse interstitial prominence suggestive of interstitial edema. Echocardiogram revealed EF 55-60%, normal LVSF; grade 1 LVDD, mild AR, mild TR, mild PAH of 30 mm Hg. HRCT chest showed multiple enlarged soft tissues density nodules of variable sizes are seen scattered throughout both lungs. Largest soft tissue nodule at the right upper lobe measures approximately 17 x 14 mm in dimensions. Largest pleural based soft tissue nodule at the left upper lobe measures approximately 24 x 22 mm. Significantly enlarged lymph nodes are seen in the mediastinum in precarinal, pretracheal, paratracheal, subcarinal, both hilar locations. CT guided biopsy done from left lung nodule showed Non-small cell carcinoma, probably squamous of unknown origin.

*Conclusion:* Patient complaining of recurrent shortness of breath need work up as in this case she was treated as pulmonary edema despite being on diuretics her symptoms persist & finally come out to be malignancy.

*Keywords:* Pulmonary edema, non-small cell carcinoma

### 8.67

SARCOIDOSIS PRESENTED AS RETROPERITONEAL AND LUNG MASS

*Nousheen Iqbal, Muhammad Irfan*  
*Section of Pulmonary and Critical Care Medicine, Department of Medicine, Aga Khan University Karachi*

*Introduction:* Sarcoidosis is a multisystem granulomatous disorder of unknown etiology

characterized pathologically by the presence of noncaseating granulomas in involved organs. Sarcoidosis most frequently involves the lungs followed by eye and skin. Presentation as retroperitoneal mass is rare in Sarcoidosis. Here we presented an unusual case of Sarcoidosis where patient was presented with large retroperitoneal and lung masses and treated as tuberculosis.

*Case:* A 53-years old male resident of Ghotki presented in clinic with 4 month history of epigastric pain, weight loss (4-5 Kg) and generalized weakness for 3 months. No history of fever nausea or vomiting. He was diabetic, hypertensive and HCV CLD for which he took no treatment. His ultrasound abdomen revealed a hyper echoic area of 4×4 cm in retroperitoneum behind the tail of pancreas. His chest x-ray showed round opacity in right lower lobe of lung, CT scan chest and abdomen showed a retroperitoneal mass of 6.1×5.3cm & a mass 3.6×3.1 cm in right post basal segment of lung with hilar & mediastinal lymphadenopathy. CT guided biopsy of right lung mass and retroperitoneal mass was done. Biopsy of right lung mass was non conclusive but retroperitoneal mass revealed chronic granulomatous inflammation. Tissue for fungal and AFB smear and culture were negative. Diagnosis of tuberculosis (TB) was made and patient was started on ATT. Patient condition did not improve even after 4 months of ATT. CT scan was repeated that showed increased in size of retroperitoneal and lung masses. His ACE level was 87 at that time. Patient underwent repeat biopsy through VATS after 8 month of ATT that again showed chronic granulomatous inflammation. Now patient was started on Steroids with presumptive diagnosis of Sarcoidosis. He showed dramatic improvement of symptoms and significant decrease in size of masses after a month of steroids.

*Conclusion:* This is an unusual presentation of Sarcoidosis. This shows that every granulomatous inflammation is not TB and alternative diagnosis like Sarcoidosis should be considered if patient is not responding to ATT.

*Keywords:* Sarcoidosis, retroperitoneal mass, tuberculosis

## 8.68 RARE LUNG TUMOUR

*Naveed Haroon Rashid, Hashir Majid*  
*Section of Pulmonary and Critical Care*  
*Medicine, Department of Medicine, Aga Khan*  
*University Karachi*

*Introduction:* IMT Inflammatory myofibroblastic tumour of the lung also known as plasma cell granuloma, inflammatory pseudotumour, fibrohistiocytoma, fibroxanthoma, include lesion with a spectrum of pulmonary manifestation from the more common solitary pulmonary nodule to the rare locally invasive tumour or multiple nodule. both sex are equally affected and are usually less than 40 years. These tumour are 1% of all surgically resected lung lesion.

The most consistent pathological features of these lesion is the background proliferation of spindle cells associated with a variety of dense polymorphic infiltrates of mono nuclear inflammatory cells, exact etiology of these tumour is unknown.

Clinical manifestation includes concurrent respiratory infection, cough, dyspnea, chestpain, or haemoptysis.

Treatment is usually is complete surgical resection, and in people who do not have complete surgical resection due to <poor surgical candidate multiple nodule or unresectable disease> then there are trial with steroids, radiation and chemo. A novel agent <CRIZOTINIB> is in pipeline which is a <ALK> ANAPLASTIC LYMPHOMA KINASE TYROSINEKINASE competitive inhibitor.

*Case history:* PT 24 male no co-morbid, nonsmoker grocery store worker known case of ASTHMA on inhalers.

Presenting complaint: He presented with 1 week history of progressive dyspnea, cough, chest pain, tachypnea and tachycardia.

CT scan outside AKUH was done which was consistent with rt upper lobe mass lesion.

Clinical examination: was unremarkable except for bilateral wheeze.

PT was initially managed as acute exacerbation of asthma and was then discharged with follow up in CT SURGERY. Where after 1 week had VATS done with complete resection of mass?

**Conclusion:** In this case complete resection was done, and pt tolerated the procedure well and no immediate complication observed. Plan to repeat a CT in 3-6 month for any recurrence.

**Keywords:** inflammatory myofibroblastic tumour<imt>, asthma

#### 8.69 ADENOCARCINOMA PRESENTATION AS CONSOLIDATION

*Naveed Haroon Rashid, Muhammad Irfan  
Section of Pulmonary and Critical Care  
Medicine, Department of Medicine, Aga Khan  
University Karachi*

**Introduction:** Adenocarcinoma is the most common type of lung cancer in contemporary series, accounting for approximately one-half of lung cancer cases. The increased incidence of adenocarcinoma is thought to be due to the introduction of low-tar filter cigarettes in the 1960s, although such causality is unproven. Histologic diagnosis requires evidence of either neoplastic gland formation or intracytoplasmic mucin. The detection of intracellular mucin requires special histochemical stains, such as mucicarmine or Periodic Acid-Schiff (PAS).

**Treatment:** Patients with stage I, II, or III NSCLC are generally treated with curative intent using surgery, chemotherapy, radiation therapy (RT), or a combined modality approach. In contrast, palliative systemic therapy is appropriate for patients with stage IV disease. Palliative systemic therapy is also used for patients who have relapsed with advanced disease following prior definitive treatment.

**Case history:** 55 Female non-smokers known case of diabetes on ATT since 3 months, diagnosis made empirically on history and CXR finding.

**Presenting complain:** Admitted with history of fever, wt loss and worsening dyspnea.

According to patient no improvement after taking ATT, condition continue to deteriorate

**Physical examination:** Middle age female cachexia lying in bed alert but lethargic very tachypnea and tachycardia.

Bilateral crept on auscultation. CXR worsened over time with increase infiltrates.

Admitted in special care treated with broad spectrum antibiotics and ATT to continue, but her condition continue to deteriorate and she was intubated because of respiratory failure, after that bronchoscopy was also done which on cytology shows malignant cell, no microbiology positive.

BRONCHOALVEOLAR CARCINOMA was also among the differentials so Lung Biopsy was done which shows ADENOCARCINOMA with primary lung origin. Patient continue to deteriorate and was withdraw from ventilatory support as per wishes of the family.

**Conclusion:** Adenocarcinoma many a times specially bronchoalveolar carcinoma present with consolidation and is being treated as pneumonia or TB, like in this case, so if pt infiltrates are non-resolving malignant process should be kept in mind.

#### 8.70 REFRACTORY LIFE THREATENING AUTOIMMUNE DISORDERS AND RITUXIMAB

*Muhammad Amer, Saima Kamal, Murtaza  
Kazmi*

*Section of Pulmonary and Critical Care  
Medicine, Department of Medicine, Aga Khan  
University Karachi*

Systemic autoimmune diseases (AID's) are a heterogeneous group of entities which may pose life threatening complications, such as alveolar hemorrhage, intractable vasculitis, and severe vital organ damage. Of all the patients with AIDs presenting to the emergency room, the majority have a rheumatologic autoimmune disease and up to 25% of them require hospitalization. Of these, up to one third will require an intensive care unit (ICU) admission. The reported in-ICU mortality of patients with autoimmune disease reaches as high as 55%. The initiation of efficient and prompt therapy is crucial. Due to the rarity of these complications, there are no randomized controlled trials evaluating the efficacy of any treatment regimen. Rituximab (RTX) is a chimeric anti-



CD20 antibody, which is used occasionally for life-threatening autoimmune diseases (AIDs). We report the experience of use of RTX in life-threatening AID at our center.

8.71

#### CMV PNEUMONITIS IN A PATIENT WITH SMALL LYMPHOCYTIC LYMPHOMA

*Saima Kamal, Ali bin Sarwar Zubairi  
Section of Pulmonary and Critical Care  
Medicine, Department of Medicine, Aga Khan  
University Karachi*

*Introduction:* Small Lymphocytic Lymphoma (SLL) is a mature (peripheral) B cell neoplasm characterized by a progressive accumulation of functionally incompetent lymphocytes, it is monoclonal in origin and has morphology and immunophenotype of chronic lymphocytic leukemia (CLL) in a patient with an insufficient number of circulating leukemia cells to fulfill the criteria for CLL. It is an indolent disease associated with a prolonged (10 to 20 years) clinical course. Survival time from initial diagnosis range from 2 to 20 years, and a median survival of 10 years. Some patients die rapidly, within two to three years from diagnosis, from complications, mainly infections. CMV pneumonitis is a common presentation of CMV disease in immunocompromised patients.

Here we present a case of CMV pneumonitis in a patient diagnosed and treated for SLL.

*Case:* 45 year old male, diagnosed on cervical lymph node biopsy in 2006 to have small lymphocytic lymphoma, received 6 cycles of chemotherapy; disease process remained stable for a few months, followed by relapse of disease. He presented to us with two months history of worsening shortness of breath, worsening cough and fever. His chest x-ray showed bilateral patchy airspace shadows and consolidation. He was started on broad spectrum antibiotics in view of health care associated pneumonia. He subsequently underwent bronchoscopy and lavage were sent for microbiology including bacterial, AFB, PCP and fungal cultures of whom all initial smears were negative, serum CMV PCR was negative, final

cultures of BAL showed acenitobacter, he was continued on broad spectrum antibiotics but had persistent fever, despite of broad spectrum antibiotic coverage, he eventually underwent open lung biopsy to determine the cause of his deterioration. His hypoxemia worsened, and subsequently got intubated due to ARDS, his biopsy specimen showed “Foci of atypical lymphoid infiltrate seen with immunohistochemical features favoring Small Lymphocytic Lymphoma and Prominent intranuclear viral inclusion bodies consistent with Cytomegalovirus Pneumonia”. He was started on valacyclovir, later developed pancytopenia, bone marrow showed leukemic infiltrate. Due to his worsening condition and poor progression of disease it was decided by the family along with ICU team and primary oncologist to withdraw his care and he later on died.

*Conclusion:* In conclusion CMV is an important cause of morbidity and mortality in immunosuppressed patients. Clinical CMV disease, particularly CMV pneumonitis, greatly impacts the morbidity and mortality of immunosuppressed patients.

*Keywords:* Small Lymphocytic Lymphoma, Cytomegallo-virus Pneumonitis, Immunocompromised

8.72

#### HODGKIN'S LYMPHOMA WITH BILATERAL PULMONARY NODULES: A DIAGNOSTIC DILEMMA

*Sidra Kiran, Muhammad Irfan, Ali Bin Sarwar  
Zubairi, Salman Adil  
Section of Pulmonology, Department of  
Medicine, Aga Khan University Karachi*

*Introduction:* Tuberculosis and malignancy are the major cause of sufferings worldwide. Studies have shown evidence of association of tuberculosis in patient with Hodgkin's lymphoma. It is always difficult to differentiate tuberculosis from relapsed Hodgkin's lymphoma on clinical presentation as Hodgkin's lymphoma with pulmonary involvement and tuberculosis is

quite similar. We report a case of a young girl treated with chemotherapy for Hodgkin's lymphoma and later developed pulmonary nodules.

*Case:* 25 year old female diagnosed to have Hodgkin's lymphoma in 2011, received 8 cycles of chemotherapy with ABVD, patient had relapse so underwent 3 cycles of salvage therapy with DHAP from Jan-March 2012, followed by 25 sessions of radiotherapy. Post radiotherapy CT chest showed regression of lymph nodes. Later patient received autologous stem cell transplantation. CT chest done 4 months after transplantation showed increase in the size of hilar and mediastinal lymph nodes along with multiple bilateral lung nodules, she underwent VATS and her lymph node biopsy showed no evidence of any lymphoproliferative disease. She developed persistent severe cough and dyspnea. Her CT chest was repeated which showed increase in the size of multiple bilateral lung nodules whereas size of lymph nodes remained unchanged with some necrosis. CT guided biopsy of lung nodule was done which showed organizing pneumonia in occasional foci and focal acute on chronic nonspecific inflammation. She was started on oral prednisolone, initially cough did respond but later she worsened clinically as well as radiologically. Her bronchoscopy revealed occlusion of right upper lobe bronchus. Her BAL was negative for any microbiological etiology. Patient eventually underwent lung biopsy. Histopathology of lung nodule showed chronic granulomatous inflammation along with dense acute and chronic inflammatory infiltrates suggestive of TB. Patient tolerated ATT well and frequency of her cough reduced. Later patient was discharged on ATT.

*Conclusion:* This is an unusual presentation of TB in patient with Hodgkin's lymphoma. This shows that possibility of TB co-existence in patient with history of malignancy and vice versa should be kept in mind as rate of association between Hodgkin lymphoma and TB is quite high in countries where TB is endemic.

*Keywords:* Hodgkins lymphoma, Tuberculosis, Lung nodules.

### 8.73

#### USEFULNESS OF 3-D CELL CULTURE IN CANCER RESEARCH

*Shagufta Naz<sup>1</sup>, Syed Zulfiqar Ali Naqvi<sup>1</sup>, Anwar Ali Siddiqui<sup>2</sup>, El-Nasir Lalani<sup>1</sup>*

*<sup>1</sup>Departments of Pathology & Microbiology and <sup>2</sup>Biological and Biomedical Sciences, Aga Khan University, Karachi.*

*Background:* Tumor spheroid (TS) is a heterogeneous cellular aggregate, of tumor cells and stroma arranged in a 3-D arrangement. It mimics the avascular tumor in terms of growth kinetics, tissue microenvironment and restoration of pathophysiological functions of tumor cells in vivo. TS serve as a better model to study anti-cancer drugs owing to the complex cell-cell and cell-matrix interactions which not only affects the distribution of essential biological factors but also the drug penetration and its action.

*Objective:* To study tumor spheroids in 3-D Culture.

*Methods:* Flat bottomed 96-well plates were coated with 1% agarose in aseptic conditions. Upon agarose solidification MCF7 cells were seeded at an optimized cell density into each well of the plate containing serum free medium. Plate was incubated at 37 °C in 5% CO<sub>2</sub>.

*Results:* It was observed that cells formed a spherical dense structure within 24 to 48 hours of cell seeding. The agarose coating formed a concave surface which aided in the formation of a 3-D tumor spheroid in the center of the well. The size of the spheroid was proportional to the seeding cell density.

*Conclusion:* The agarose provides a non-adherent surface for the formation of TS which closely reflects the microregions of solid tumors are considered as a better in vitro model than its 2-D monolayer counterpart. This protocol provides the simple and easy way to characterize TS using 3-D culture technique.

*Keywords:* Tumor spheroid (TS), three-dimensional culture (3-D), agarose.

### 8.74 LYCOPERSICON ESCULENTUM SELECTS LOW TUMORSHERE FORMING BREAST CANCER CELLS IN VITRO

Shagufta Naz<sup>1</sup>, Sadia Habib<sup>3</sup>, Syed Zulfiqar Ali Naqvi<sup>1</sup>, Anwar Ali Siddiqui<sup>2-3</sup>, El-Nasir Lalani<sup>1-3</sup>

<sup>1</sup>Departments of Pathology & Microbiology,

<sup>2</sup>Biological and Biomedical Sciences and

<sup>3</sup>Research Office, Aga Khan University,  
Karachi.

**Background:** Cell surface glycoconjugates play fundamental role in biological processes such as cell differentiation, cell adhesion, cell-cell interaction and cancer metastasis. However, aberrant expression of these glycans is a hallmark of cancer. Lectins, the main binding partners of glycans, are proteins that preferentially recognize and bind to the glycans protruding from glycoconjugates. There is an overwhelming evidence of lectin biomarkers to identify, characterize and to isolate novel sub populations such as mouse embryonic stem cells (mESCs) and human pluripotent stem cells (hPSCs). We report the differential expression of N-acetylglucosamine (GlcNAc) on breast cancer cells and its correlation with tumorigenic cancer cells.

**Objective:** To enrich Stem-like cells using LEL.

**Methods:** MCF7 cells were labeled with biotin conjugated Lycopersicon esculentum lectin (LEL) and Magnetic Activated Cell Sorting (MACS) was carried out to deplete LEL- and LEL+ cells and were cultured in serum free medium (at low cell density up to 10 cells / well) on agarose coated 96-well plate for 4 weeks. Semi quantitative PCR was performed for the differential expression of AR, E-cadherin and Vimentin.

**Results:** LEL- cells produced more spheres with comparatively higher tumor sphere forming efficiency (56.97%) than LEL+ (30%). Expression of E-cadherin and Androgen receptor, markers of differentiated cell was down regulated with an upregulated Vimentin, an important indicator of epithelial to mesenchymal transition (EMT), in LEL- spheres whereas LEL+ spheres showed increased

expression of AR, E-cad and decreased expression of Vimentin.

**Conclusion:** Lycopersicon esculentum (tomato) lectin (LEL) which recognizes N-acetylglucosamine (GlcNAc) 2-4, binds to tumor cell with low tumorsphere forming capability. These findings can further be confirmed by Immunohistochemistry and lineage specific differentiation.

**Keywords:** *Lycopersicon esculentum*, N-acetylglucosamine, breast cancer, EMT

### 8.75 THE AGAROSE-PARAFFIN BLOCK FACILITATES EMBEDDING AND SUBSEQUENT IHC ANALYSIS OF PROSTASPHERES

Sadia Habib<sup>1</sup>, Shagufta Naz<sup>2</sup>, Muhammad Khalid<sup>2</sup>, Zulfiqar Ali Naqvi<sup>2</sup>, Anwar Ali Siddiqui<sup>1,3</sup>, El-Nasir Lalani<sup>1,2</sup>

<sup>1</sup>Research Office, <sup>2</sup>Department of Pathology & Microbiology, <sup>3</sup>Department of Biological & Biomedical Sciences, Aga Khan University  
Karachi

**Background:** Cancer stem cells (CSCs) are tumorigenic cells with self-renewal and sphere forming ability. CSCs are resistant to radiation and chemo-therapies. CSCs grow in sphere which is a characteristic of stem-like cells but often they are very small in size and difficult to visualize and it is challenging to perform IHC studies on them. To overcome this limitation an embedding medium is needed to facilitate IHC studies on paraffin-embedded prostaspheres. Here we report a modified method to embed prostaspheres in Agarose-Paraffin block.

**Objectives:** To embed prostaspheres in Agarose-Paraffin and study the expression of CD44 in serial section using IHC.

**Methods:** Prostaspheres were harvested in 1.5ml eppendorf tube; 100µl of eosin was added to keep them visible and allowed to settle down. Supernatant was removed by gentle aspiration and washed once with 1X PBS. Prostaspheres were fixed in 10 % paraformaldehyde for overnight. Agarose (2%, w/v) in distilled water

was poured into Tissue-Tek®Cryomolds. Prostaspheres were placed in the center of molten agarose, mixed gently and allowed to solidify. The solidified block was dehydrated, infiltrated with molten paraffin followed by embedding. Serial sections of 5 µm were cut using microtome. H&E staining and Immunohistochemistry (CD44) were performed on selected serial sections.

**Results:** CD44 antibody showed strong and specific membranous staining without background.

**Conclusions:** The Agarose-paraffin block provides an ideal matrix that facilitates serial sectioning of prostaspheres. Furthermore, spheres sections obtained not only standup the harsh pretreatment required for IHC but also facilitates staining.

**Keywords:** Agarose paraffin matrix, Prostaspheres, CD44

8.76

#### DIFFERENTIAL EXPRESSION OF CD10 IN PHYLLOIDES TUMORS; A PREDICTOR OF RECURRENCE AND METASTASIS

*Muhammad Usman, Saroona Haroon, Naila Kayani*

*Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Background:** Phylloides tumors are classified as benign, borderline, and malignant according to a group of histological features, subjected to significant inter-observer variability. The expression of many biological markers has been explored to discriminate between different grades of Phylloides tumor and to predict their behavior. The immunohistochemical expression of CD10 has been shown to discriminate between different grades of Phylloides tumor but a very limited number of studies have evaluated its role as a predictor of recurrence or metastasis.

**Objectives:** The purpose of this study was to study the immunoexpression of CD10 in benign, borderline and malignant categories of Phylloides tumor. Moreover, we also evaluated the usefulness of immunohistochemical staining

of CD10 in predicting the likelihood of recurrence and metastasis in Phylloides tumors.

**Methods:** The expression of CD10 was studied in 43 Phylloides tumors (16 benign, 11 borderline, and 16 malignant) using immunohistochemistry to evaluate whether differences in expression correlated with the presence of locoregional recurrence and lymph node metastasis.

**Results:** 02 out of 16 (12.5%) of benign, 6 out of 11 (54.5%) of borderline and 13 out of 16 (81.3%) of malignant tumors expressed significant (2+ or 3+) staining. This expression of CD10 significantly varied among histological categories (P<0.001). Recurrence occurred in 02 malignant and 02 borderline Phylloides tumors. Lymph node metastasis was observed in 01 borderline tumor. 3 out of 4 recurrent cases and single case of lymph node metastasis expressed significant (2+ or 3+) staining, which did not significantly correlated with the occurrence of recurrence or metastasis.

**Conclusions:** The expression of CD10 can be used to characterize the Phylloides tumors of the breast. Although, the staining pattern is observed in recurrent and metastatic cases but a larger sample is needed to validate its predictive role

**Keywords:** Phylloides tumor, CD-10 immunostain; Recurrence, Borderline Phylloides tumor

8.77

#### VULVOVAGINAL ANGIOMYOFIBROBLASTOMA AND AGGRESSIVE ANGIOMYXOMA: A CLINICOPATHOLOGICAL AND IMMUNOHISTOCHEMICAL ANALYSIS OF DISTINCTIVE MESENCHYMAL TUMORS

*Saroona Haroon, Shabina Sikandar, Romana Idrees, Naila Kayani*

*Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Background/Introduction:** In 1983, Steeper and Rosai termed a unique perineal soft tissue myxoid tumor as “aggressive angiomyxoma” (AA) which was distinctive from angio-my-

fibroblastoma (AMF). After their comprehensive description, studies were done pertaining to mesenchymal lesions of lower female genital tract and perineum. However no large study was done in Pakistan to find the epidemiology and clinicopathological features of these tumors in our population.

**Objectives:** We aimed to report clinicopathological and immunohistochemical features along with variables, if any, associated with aggressiveness (Recurrence or metastasis) of these lesions.

**Methods:** All the cases of AA and AMF diagnosed during January 1992 till July 2013 were included. Slides were reviewed and follow up was included.

**Results:** Total 17 cases of AMF and 31 cases of AA were reviewed. For AA, mean age + SD was 42.2 years + 16.9. Median age was 42 years. Mean size of the tumor was 8.4 cm. Total 20 patients with follow up information were identified. There was local recurrence in 3 cases (15%). Positive tumor margin was found to be associated with recurrence. The median age of AMF patients was 39 years and mean size of tumor was 5.4 cm. Follow up of only 9 patients was available and there was no recurrence.

**Conclusions:** AMF and AA are rare vulvovaginal tumours with AMF behaving as completely benign entity. Positive margins of AA but not the mitotic count was found significantly associated with recurrence.

**Keywords:** Aggressive angiomyxoma, Angiomyofibroblastoma, vulvovaginal tumours

### 8.78

#### CK19 REACTIVITY IN FOLLICULAR VARIANT OF PAPILLARY THYROID CARCINOMA

*F.A.Firdousi, Nasiruddin, Shahid Pervez  
Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Introduction:** Papillary thyroid carcinoma (PTC) constitutes about 80% of all thyroid malignant neoplasms. Among the subtypes of papillary carcinoma, the follicular variant (FV-PTC) is the

most common. This lesion is characterized by an exclusive or almost exclusive follicular growth pattern and a set of nuclear features identical to those of the usual type of papillary carcinoma (UT-PTC). A common diagnostic dilemma arises when an encapsulated nodule with a follicular pattern of growth exhibits some but not all of the features of PTC. In such instances distinguishing encapsulated FV-PTC from follicular adenoma (FA) may be a challenge. Cytokeratin (CK) 19 has been proposed as an immunohistochemical marker to distinguish FV-PTC from other benign and malignant follicular lesions. So the purpose of the present study was to analyse the reactivity of CK 19 in FV-PTC and its potential utility in routine histopathology practice.

**Material and Methods:** Fifty cases of follicular neoplasms with morphological features consistent with FV-PTC were included. All the cases were stained by a monoclonal mouse anti-Human CK19, using indirect immunohistochemical technique with Flex detection system.

**Results:** CK 19 was diffusely expressed in 92% of cases of FV-PTC and was completely negative in 4% otherwise morphologically consistent cases of FV-PTC. In 4% of cases staining was focal and weak. The cellular localization of staining with CK 19 was similar in all positive tissues examined, that is cytoplasmic staining with frequent enhancement adjacent to the cell membranes. A significant observation was that in many cases adjacent normal thyroid tissue also showed staining with CK19.

**Conclusion:** It was concluded that CK 19 immunohistochemistry alone is highly sensitive but non-specific, hence has limited value in the work-up of FV-PTC diagnosis

### 8.79

#### CLINICO-PATHOLOGICAL PATTERNS OF ADRENAL LESIONS; AN EXPERIENCE FROM A SINGLE CENTRE IN PAKISTAN

*Saroona Haroon, Anita George, Sheema H. Hasan, Naila Kayani, Shahid Pervez, Rashida Ahmed, Zubair Ahmed, Romana Idrees, Saira Fatima*

*Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Background/Introduction:** The existence, importance, and physiology of the adrenal

glands have been described more than 500 years ago. Further in the mid of 19th century, Addison and Brown-Séquard validated the important role of these glands regarding the mineral and corticoid function. Adrenal gland lesions can be clinically symptomatic or they can be diagnosed as incidentilomas on autopsies.

*Objectives:* A retrospective cohort study was done in section of histopathology, Pathology & Microbiology Lab, The Aga Khan University.

*Methods:* All specimens of adrenal gland, either adrenalectomies or trucut/incisional biopsies received in the department from January 1992 till July 2012 were included.

*Results:* During the study period, a total of 256 patients presented with different adrenal lesions. Median age was 45 years. Male:female was 1.1:1. 151 (58.9%) were benign and 10 cases (4.6%) remained uncategorized and were coined the term, adrenocortical neoplasm. Rests were malignant lesions. Of all, the most common lesion was Pheochromocytoma (n=70, 27.3%). Next in frequency were Adrenal cysts (n=27), Adrenocortical Adenoma (n=26), Adrenocortical carcinoma (n=17), 16 Ganglioneuromas, 13 Neuroblastoma, 8 Ganglioneuroblastoma and 7 Myelolipomas. Of other interesting tumours sarcomas comprised 12 cases and 10 patients presented with primary adrenal Lymphomas. 13 cases of Tuberculosis were present and 9 cases showed hemorrhagic infarction or abscess formation. 15 metastatic tumors from various primary sites to adrenal glands were also identified.

*Conclusions:* We conclude that pheochromocytoma is the most common adrenal disease in patients having adrenal lesions in the study area. The lesions mostly present in middle age and males are slightly more affected than females. Histotesting is recommended for all patients with adrenal lesions because of wide morphological spectrum.

*Keywords:* Adrenal mass, Pheochromocytoma, Adrenocortical carcinoma, Adrenal neoplasm, Adenoma,

## 8.80

### CRANIOPHARYNGIOMAS; A SINGLE CENTRE EXPERIENCE OF MORE THAN 2 DECADES

*Saroona Haroon, Faiza Rasheed, Sheema Hasan, Naila Kayani, Shahid Pervez, Rashida ahmed, Zubair Ahmad*

*Department of Pathology & Microbiology, Aga Khan University, Karachi*

*Background:* Craniopharyngiomas account for about 3% of all primary intracranial tumors which usually present in younger age group however a later presentation can be seen. These are of two main morphological patterns; adamantinomatous and papillary.

*Objectives:* The purpose of this study was to present the clinic-morphological features of various varieties of craniopharyngiomas in our set-up.

*Methods:* All the tumours that presented in Histopathology section, Department of Pathology & Microbiology, The Aga Khan University Hospital, Karachi from January 1992 till July 2013, diagnosed as craniopharyngiomas, were included in the study.

*Results:* Total 226 cases of craniopharyngiomas were included. Mean age was 25.7 years and median age was 22 years. The male to female ratio was approximately 2:1. Craniopharyngiomas were mainly sellar/suprasellar, other locations included frontopontine and midbrain regions. Major histological subtype was adamantinomatous (n=223) with keratin and squamous epithelium present in 76% of these. A continuum of mixed morphology rather than discrete subtypes of tumors was found. Calcifications were identified in 43% of tumours, more so in tumours of children. Bone formation was also seen in 6 tumours. Most common manifestations were headaches and nausea/vomiting, visual disturbances and growth failure in children and visual disturbances in adults. Follow up of less than half of patients was available, 10 (4%) patients experienced recurrence and 9 patients died of disease.

*Conclusions:* Craniopharyngiomas are predominantly found in adults in our region.

Males are more affected than females. Wide variety of morphological spectrum is present among admantinomatous subtype however papillary subtype is very rare

**Keywords:** Craniopharyngiomas, Recurrence, Sellar tumor

### **8.81** FREQUENCY OF LOSS OF PTEN IN ENDOMETRIOID ADENOCARCINOMA OF ENDOMETRIUM BY IMMUNOHISTOCHEMISTRY

*Sidra Arshad, Rashida Ahmed*  
*Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Introduction:** Endometrial carcinoma is the most common malignancy of female genital tract. It constitutes the fourth most common cancer in women and is the third most common cause of deaths due to gynecological disorders. Endometrioid adenocarcinoma shows various genetic alterations, of which Phosphatase and Tensin homolog (PTEN) loss is the most common

**Objective:** To determine the frequency of loss of PTEN expression in endometrioid adenocarcinoma of endometrium by immunohistochemistry.

**Study Design:** Cross sectional descriptive study.  
**Setting:** Aga Khan University Hospital, Karachi.  
**Duration:** One year (1st March 2012 to 1st March 2013)

**Materials and Method:** PTEN protein expression was evaluated by immunohistochemistry on 128 paraffin embedded blocks of endometrial currettings and hysterectomy specimens received at Section of Histopathology. Immunohistochemical staining was performed on the selected slides, utilizing commercially available PTEN antibody on automated immune stainer.

**Results:** Total 128 cases of endometrioid adenocarcinomas were received during the study period. These cases were graded according to FIGO grading system. Thirty four of the cases were FIGO grade I, seventy seven were grade II

and seventeen were grade III carcinomas. The mean age was 57.16 (range 26-83). These cases were stained for PTEN antibody, (84) cases showed loss of PTEN expression, while 44 of the cases were positive. This Loss of PTEN was predominantly seen in grade III cases, while most of the Grade I cases were positive for PTEN immunostain.

**Conclusion:** PTEN loss was seen in 65.5% of the cases, of which most of them were grade III endometrioid adenocarcinoma, indicating that PTEN is one of the most common alteration seen endometrioid adenocarcinoma, however there are other pathways which are also involved in its carcinogenesis

**Keywords:** PTEN (Phosphatase and Tensin homolog), Endometrioid adenocarcinoma,

### **8.82** ENDOMETRIAL STROMAL SARCOMA, A REVIEW OF 50 CASES

*Sidra Arshad, Roman Idrees, Nasir Ud Din, Naila Kayani*  
*Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Introduction:** Endometrial stromal sarcomas (ESS) are rare malignant tumors that make around 0.2% of all uterine malignancies. In the latest WHO classification, endometrial stromal tumors are divided into (a) endometrial stromal nodule (ESN)(b) Low-grade endometrial stromal sarcoma (LGESS) or ESS (c) Undifferentiated endometrial or uterine sarcoma (UES).

**Objective:** To evaluate the behaviour of endometrial stromal sarcoma in relation to their clinical and pathological features.

**Study Design:** Retrospective study

**Material and Method:** Total fifty cases of endometrial stromal sarcomas registered from different regions of Pakistan were retrieved for the current study using the AKUH pathology-based cancer registry data-base. Cases were diagnosed on the basis of hematoxylin eosin (H&E) stain. Immunohistochemistry was used as an additional diagnostic tool. Data was reviewed, validated and patients were actively

followed to determine disease progress and survival.

*Results:* ESS was predominantly observed in the fourth decade of life. The mean age of all patients was 43 years (range 22 years to 68 years). Most of the patients presented with abdominal pain. Out of these fifty cases, 31 were of low grade endometrial stromal sarcoma and 19 were of high grade. Follow up was available in 21 patients, 17 were alive and 04 died of the disease.

*Conclusion:* ESS is a rare aggressive tumor. Majority of our cases presented in the perimenopausal age. In our study it was seen in sites other than uterus such as ovary and vulva. Metastasis in the omentum was also seen in one the case.

*Keywords:* Endometrial stromal sarcoma, uterus,

### 8.83

#### HER-2/ NEU BASOLATERAL IMMUNOHISTOCHEMICAL STAINING IN GASTRIC CANCER IS DUE TO TIGHT JUNCTIONS IN NEOPLASTIC EPITHELIUM

*Sidra Arshad, Shahid Pervez  
Department of Pathology & Microbiology, Aga Khan University, Karachi*

*Background:* Herceptin is recently approved by EU commission in selected cases of gastric adenocarcinoma. Invariably positive cases i.e., IHC 3+ or IHC 2+/FISH + are of intestinal type. Scoring criteria on IHC for Her-2/neu assessment states basolateral or complete membrane staining in >10% of tumor cells. This study was undertaken for possible explanation of varied staining patterns.

*Study design:* A cohort of gastric adenocarcinomas (30) of intestinal type with variable histological differentiation were stained with antibody to Her-2/neu using the standard IHC technique.

*Results:* It was observed that well differentiated gastric adenocarcinomas with prominent glandular differentiation largely expressed only basolateral staining with no luminal staining. In contrast to this poorly differentiated

adenocarcinomas mostly expressed circumferential staining i.e., both basolateral & luminal. Intermediately differentiated carcinomas showed a mixed staining pattern.

*Conclusion:* Basolateral & Luminal domains of epithelium are biochemically, antigenically & functionally distinct. Tight junctions are essential for maintaining this biochemical, antigenic & functional polarization as in well differentiated gastric adenocarcinomas. It was observed that structural & functional abnormalities of tight junctions in poorly differentiated carcinomas results in loss of polarity with progressive invasion of the luminal surface by antigenic glycoproteins and resultant circumferential antigenic expression. This study also demonstrates that antigenic expression on cells is not static but dynamic and factors like spatial configuration may alter its expression pattern.

*Keywords:* Her 2 neu, gastric carcinoma,

### 8.84

#### CLINICAL CHARACTERISTICS, OUTCOME AND EARLY INDUCTION DEATHS IN ACUTE PROMYELOCYTIC LEUKEMIA: FIVE YEARS' EXPERIENCE AT A TERTIARY CARE CENTER

*Farheen Karim, Mohammad Usman Shaikh, Salman Naseem Adil, Mohammad Khurshid  
Department of Pathology & Microbiology and Department of Oncology, Aga Khan University, Karachi*

*Introduction:* Acute promyelocytic leukemia (APL) is a distinct clinical and biologic subtype of acute myeloid leukemia (AML). APL is notorious for causing early deaths which is a major cause of induction failure.

*Objective:* To report the clinical characteristics, outcome and early induction deaths in patients with acute promyelocytic leukemia at our institution

*Methods:* This was a retrospective study carried out at Aga Khan University Hospital . Patients aged > 15 years and diagnosed as having acute



promyelocytic leukemia from September 2007 to September 2012 were included in the study.

**Results:** Twenty-six patients were diagnosed as having APL based on the morphology, detection of t(15;17)(q24.1;q21.1) and PML-RARA. The male: female ratio was 1:1. The median age of patients was 41 years (Range 16-72). Thirteen patients (50%) presented in the high risk category. Early induction death rate was 61.5%. The causes of early induction deaths were: hemorrhage in 7(43.7%), infection in 2(12.5%) and Differentiation (ATRA) syndrome in 7(43.7%). Survival of patients who survived the early period was 70% at 42 months. Relapse rate was 30%.

**Conclusion:** Early induction death rate is very high in APL. The most common cause of early induction death is hemorrhage. The outcome of APL is better provided the patients survive the initial period.

**Keywords:** adults, promyelocytic, leukemia

### 8.85 ROOT CAUSE ANALYSIS OF NON- INFECTIOUS TRANSFUSION REACTIONS AND THE LESSONS LEARNT

*Farheen Karim, Bushra Moiz, Naseem Shamsuddin, Safia Naz, Mohammad Khurshid*  
Department of Pathology & Microbiology and  
Department of Oncology, Aga Khan University,  
Karachi

**Introduction:** Transfusion of blood and blood products can be associated with hazards which may be at times fatal. Timely reporting of transfusion reactions is imperative for root cause analysis and their prevention in future.

**Objective:** To evaluate frequency of all transfusion reactions including ABO-mismatch incompatible red cell transfusions and their root cause analysis in our institute.

**Methods:** We retrospectively reviewed the transfusion reactions at our institution during last seven years. The data was retrieved from our computerized blood bank information system. The frequency of adverse effects, implicated products, wrong blood transfusion and its outcome were observed.

**Results:** During study period (2006-2012), a total of 39, 3662 blood or blood products were

transfused. There were 479 adverse events with an estimated rate of 1.2 per 1000 blood products administered. During 2011-2012, 142 transfusion reactions were reported of 119921 transfused units. The most common adverse effects were allergic reactions [70 episodes of 142 or 49%] followed by febrile non hemolytic transfusion reactions or FNHTR [43 events of 142 or 30%]. Transfusion associated dyspnea; circulatory overload and transfusion associated lung injury were less frequent. A total of 14, 2066 red cell units were transfused with nine ABO-mismatch transfusions and two fatalities. The computed incidence of ABO-mismatch transfusion was 1 in 15,785 with a mortality rate of 1 in 71,033 units transfused. Etiology included: errors in final bed side check [n=5] and blood bank clerical errors [n=4]. A review of these cases prompted hospital transfusion committee for re-enforcing policies and protocols to minimize accidental ABO incompatible transfusions.

**Conclusions:** We concluded that urticaria and FNHTR are the most frequent transfusion reactions in our setting. ABO mismatched blood transfusions are rare but preventable errors and result mainly from clerical imprecisions

**Keywords:** Transfusion reaction, non-infectious, causes

### 8.87 ENHANCING PATIENTS' SAFETY BY MINIMIZING WINDOW PERIOD DONATIONS

*Bushra Moiz, Tariq Moatter, Usman Shaikh, Salman Adil, Naseem Shamsuddin, Nazneen Islam, Mohammad Khurshid*  
Department of Pathology & Microbiology and  
Department of Oncology, Aga Khan University,  
Karachi

**Introduction:** The frequency of viral hepatitis B and C is estimated to be 3-4% in Pakistani blood donors while HIV is <1%. However no data is available regarding blood donations that are made during window period. Such donations though serologically negative are potentially infectious because of the substantial viral load. The current study was done to estimate the extent of such blood donations that were made during the gap before sero-conversion.

**Objective:** To determine the frequency of window period blood donations for estimating nucleic acid amplification testing [NAT]-yield in Southern Pakistan and to evaluate the residual risk of transmission of HIV, HCV and HBV

**Methods:** All donors were initially scanned verbally to assess their suitability for donation using an in house questionnaire. We collected two 5ml blood in gel tube (BD vacutainer) from each donor. Each donation was screened for HIV, Hepatitis B and C [Vitros Johnson & Johnson, ortho-clinical and diagnostic 1996-2000], malaria [Now malaria® Binax incorporated] and syphilis [VDRL Carbon antigen Plasmatec Laboratory products]. Serologically negative donors were evaluated further through nucleic acid testing [TaqScreen MPX Assay, Roche Diagnostics] in a pool of six samples. The data from April 2011 to November 2012 was compiled from blood bank information system to compute the results.

**Results:** Of 42830 blood donors, 1571 or 3.6% showed seroconversion. Of serologically non-reactive blood samples [n=41295] tested for NAT, 49 were positive. HCV, HBV, HIV was detected in 27 [58.8%] and 7 [23.5%] and one case respectively. Incident rate/105 donations were highest for HCV [453.3] followed by HBV [171.5] and HIV [72.23]. Calculated residual risk per million donations was highest at 91.52 for HBV, intermediate at 71.96 for HCV and least at 15.98 for HIV.

**Conclusions:** Nucleic acid testing in Pakistani donors yielded high positivity rate with majority of the window period donations reflecting pre-seroconversion phase of hepatitis C

**Keywords:** Blood donors, donations, Pakistan, NAT

### 8.89 VALIDATION OF POINT- OF- CARE INR DEVICE WITH MAIN HOSPITAL INSTRUMENT

Anila Rashid, Bushra Moiz, Mohammad Hassan,  
Lena Jafri, Aysha Habib Khan  
Department of Pathology & Microbiology, Aga  
Khan University, Karachi

**Background:** Point-of- Care-International Normalized Ratio (POC-INR) testing is an

established and reliable means of monitoring patients requiring chronic warfarin therapy, hence provides easier access and minimize the turnaround time for test results. The patients drug doing is largely monitored by INR from POC device in the clinic. It is therefore, important to validate INR results from POC device with the main laboratory instrument as the lack of comparison may lead to errors in the assessment of correct INR and degree of anticoagulation.

**Objective:** To perform comparative evaluation of the POC-INR with the INR obtained in laboratory by standardized automated method.

**Methods:** It is a prospective ongoing study started in June 2013. A total of 40 subjects are included out of which 20 were patients taking warfarin and 20 were normal individuals taken as controls. The capillary and venous blood was collected from each subject for estimation of INR on POC(CoagucheckXS-Roche) and main lab instrument (Sysmex-Cs2000i) respectively. Each test was run in duplicate.

**Results:** A total of 40 samples were analyzed on Cs2000i and CoagucheckXS simultaneously. Mean INR using Cs2000i and CoagucheckXS was  $2.7 \pm 1.9$  (1.2-8.85) and  $2.9 \pm 2.0$  (1.35-8.25) respectively. Mean bias between the two methods was 0.2(8.2%). POC-INR instrument showed excellent correlation with the lab instrument (correlation co-efficient,  $r = 0.97$ ). The slope was calculated as 1.06(95%CI 0.98-1.14) and the Y intercept was 0.07( 95%CI -0.19-0.34).

**Conclusions:** Acceptable correlation was obtained among POC-INR and main automated instrument in assessing INR

**Keywords:** INR, Point-of-care, Warfarin.

### 8.91 PROGRESSIVE MULTIPLE LEUKOENCEPHALOPATHY FOLLOWING RITUXIMAB THERAPY

Maria Shafiq, Farhala Baloch, Shamaiza Bashir  
Department of Pathology & Microbiology, Aga  
Khan University, Karachi

**Introduction:** Nausea and vomiting is a very non-specific presentation of wide variety of clinical conditions but, under certain scenarios

they prompt us to a usual diagnosis. Rituximab, a monoclonal antibody which improves outcomes for persons with lymphoproliferative disorders and is increasingly used to treat immune-mediated illnesses. We report a case of an elderly lady who developed PML following treatment with rituximab.

*Case report:* This is the case of a 60 years old lady who had been treated as a case of diffuse large cell B cell lymphoma (DLBCL) in 2009 with 8 cycles of CHOP therapy, but due to her disease progression on follow up scans, she was given additional three cycles of Rituximab in 2010. Her last scan done in May 2013 showed stable disease. She presented to us with complains of intractable nausea and vomiting, though she had a history of biopsy proven chronic active gastritis and was treated with triple regimen. Her symptoms however, did not resolve. Re-occurrence of disease was also ruled out. On further inquiry she also gave history of unsteadiness while walking ahead. Neurological examination showed hyperreflexia all over. Neurology opinion was taken and she underwent MRI brain with contrast that did not show post contrast enhancement and the suspicion of “progressive multiple leukoencepholopathy” was raised and her disease was attributed to be secondary to Rituximab. She was given pulse steroid therapy to which she responded well for an instance but later after a few weeks she was admitted under neurology services with further worse clinical symptoms.

*Discussion:* Progressive multifocal leukoencephalopathy (PML) is a rare demyelinating disease of the central nervous system that results from reactivation of latent JC polyoma virus (JCV). A dramatic increase in the prevalence of PML was associated with human immunodeficiency virus (HIV) infection, and AIDS remains the disease with the highest associated risk of PML. Most cases of PML associated with rituximab therapy have occurred in patients undergoing treatment for hematologic malignancies, with the majority of these patients receiving rituximab in combination with multiagent chemotherapy or as part of hematopoietic stem cell transplantation. It should be noted that risk-benefit assessments take into consideration observations that

rituximab added to chemotherapy prolongs progression-free survival for persons with follicular non-Hodgkin lymphoma and prolongs survival and can be curative for patients with diffuse large B-cell lymphoma.

*Conclusion:* Exposure to Rituximab can lead to PML. It's urged that physicians should consider the risk of PML, which is a quite fatal condition, while considering Rituximab therapy for benign clinical disorders

*Keywords:* PML, Rituximab, DLBCL

## 8.92 PERFORMANCE INDICATORS FOR CRITICAL INTERNATIONAL NORMALIZED RATIO RESULTS IN A HAEMOSTATIC LABORATORY

*Shabneez Hussain, Bushra Afaq, Mehwish Arshad, Subuhi Raza, Bushra Moiz  
Department of Pathology & Microbiology, Aga Khan University, Karachi*

*Background:* A significant proportion of our population is on anticoagulant therapy. Monitoring of oral anticoagulant therapy is routinely performed by measuring International Normalized Ratio (INR) since elevated INR can lead to bleeding complications. The reportable INR has been known to be in the range of 5.0 and 9.0 since intervention becomes necessary at this level.

*Objective:* The primary aim of this audit was to assess percentage of patients who were informed critical INR and percentage of critical INR that became non critical after repeating the test. The secondary aim of this study was to assess percentage of patients who were bleeding and having side effects of Warfarin therapy, indications of Warfarin therapy, dose of Warfarin at which bleeding occurred and how frequently the patients were monitoring their INR.

*Methods:* This is a retrospective clinical audit conducted at Aga Khan University Hospital, Haemostatic laboratory from January till December 2010. Samples were received in the laboratory in 3.2% Na citrate tubes and PT/INR

was performed. Critical value of INR was defined as more than 5.0. All critical INRs were rechecked and if the value remained unchanged, the patient was contacted and an in house questionnaire was filled. All patients irrespective of age and gender with critical INR were included. Exclusion criterion was defined as those patients who could not be contacted. If the history of the patient does not indicate the cause of high INR, then the INR is repeated on a fresh sample. A re-audit was then performed from January till December 2012.

*Results:* Total INR values that were reported in the audit are 36861. Out of these, 376 (1.02%) had INR above 5.0 (or 10/1000 tests). There were 278 evaluable and majority, 175 (63%) of the patients were more than 50 years of age. Warfarin intake accounted for critical INR in 241(86.7%) patients and valvuloplasty was the commonest indication in 53(19%) patients. Only 24(8.6%) patients had bleeding on Warfarin therapy. Fresh sample was required in 21 patients and the value of INR became non critical on repeating the test in 14 (5%) patients. Staff was counseled based on the audit results and the performance indicators of critical INR were re-audited. The results are in process.

*Conclusion:* Performance indicators should be monitored quarterly. Females, older age group and patients with valvuloplasty are at higher risk of developing critical INR. Efforts should be made to improve transportation and acquiring the contact number of the patients to improve communication of critical results

*Keywords:* Audit, Critical INR, Bleeding, Warfarin

# **Infectious Diseases**

## 9.1 B-LACTAMASE PRODUCTION AND ANTIMICROBIAL SUSCEPTIBILITY PATTERN OF MORAXELLA CATARRHALIS: REPORT FROM PAKISTAN

Sadia Omer, Naima Fasih, Seema Irfan, Afia Zafar  
Department of Pathology & Microbiology, Aga  
Khan University, Karachi

*Background and objective:* Moraxella catarrhalis is one of the common cause of upper and lower respiratory tract infections with rare reports of endocarditis, septicaemia, and meningitis. Increasing pathogenicity and capacity to produce  $\beta$ -lactamase enzyme has renewed the interest into this organism. There is a paucity of local data about antimicrobial resistance and frequency of  $\beta$ -lactamase production. Therefore this study aimed to assess the frequency of  $\beta$ -lactamase production and antimicrobial resistance rate against commonly used oral antibiotics in M.catarrhalis isolates from Pakistan.

*Material and methods:* In this cross sectional study (January to December 2010), a total of 100 clinical respiratory specimens growing M. catarrhalis isolated in clinical microbiology laboratory of Aga Khan University Hospital (AKUH) were included. Frequency of  $\beta$ -lactamase production and antimicrobial resistance rates against ampicillin, erythromycin, ciprofloxacin and tetracycline were noted by performing minimum inhibitory concentration (MIC). MICs were calculated as MIC 50 and MIC 90.

*Results:*  $\beta$ -Lactamase production was detected in 84 % of isolates, which correlated well with high ampicillin MIC among them. Erythromycin and tetracyclin were highly sensitive, with (MIC<sub>90</sub> = 0.12 mg/L) and (MIC<sub>90</sub> = 1 mg/L) in 97% and 96% of isolates respectively. All were fully sensitive to ciprofloxacin (MIC<sub>90</sub> = 0.06 mg/L).

*Conclusion:* High rates of ampicillin resistance suggest that alternative to it should be selected empirically by physicians in regard to treating respiratory tract infection. This also emphasizes the importance of continued surveillance in order to detect new emerging pattern of resistance

*Keywords:* Moraxella catarrhalis, antimicrobial resistance,  $\beta$ -lactamase enzyme

## 9.2 HEPATITIS C VIRUS 3'UTR AND REPLICATION SLIPPAGE

Haroon Shaikh, Sana Ayaz, Asghar Nasir, Zulfiqar Ali Naqvi, Saeed Hamid, El-Nasir Lalani and Anwar Ali Siddiqui  
Departments of Pathology & Microbiology,  
Biological & Biomedical Sciences and Medicine,  
Aga Khan University, Karachi

*Background and Objective:* The 3' un-translated region (3'UTR) of Hepatitis C virus (HCV) is involved in regulation and initiation of viral translation and replication. This region is also involved in the stabilization and packaging of viral RNA. The HCV 3'UTR varies between 200-235 nucleotides and typically consists of three distinct regions, (i) a variable region that is variable in length and composition among different genotypes, (ii) a poly (U/UC) tract of heterogeneous lengths and (iii) a highly conserved 98-nt X region (tail region) that forms three stable stem-loop structures that are highly conserved across all genotypes. In Pakistan, HCV genotype 3a is highly prevalent. To the best of our knowledge the complete genome of HCV 3a has not yet been reported. Our aim is to amplify and sequence the full length 3'UTR region of HCV3a. This would be a key requirement for the development of a replicon system for the Pakistani population.

*Material and methods:* Viral RNA was extracted from serum samples of HCV genotype 3a positive patients. Viral RNA was reverse transcribed by Superscript III and the synthesized cDNA was amplified with gene specific primers. PCR products were gel purified and sequenced.

*Results:* For HCV RNA detection, 5'UTR region was amplified using nested PCR. The 3'UTR of HCV has a highly complex structure which greatly reduces the efficiency of reverse transcription and amplification. It results in either no product or a shortened amplified product with conventional PCRs due to a phenomenon known as "Replication Slippage". Sequencing results of amplified product revealed that the shortened product was missing the poly U/UC region of the 3'UTR. For the amplification of complete 3'UTR region; Rapid amplification of cDNA ends (3'RACE) is underway.

**Conclusion:** The potential 3'RACE can be utilized for overcoming the limitations of replication slippage. We aim to successfully amplify and sequence the full length 3'UTR region of HCV 3a by performing 3'RACE.

**Key words:** Hepatitis C Virus, Replication Slippage, 3'RACE

### 9.3

#### FDA APPROVED DRUGS FOR NON-INFECTIOUS DISEASES, WITH ANTIMICROBIAL POTENTIAL

*Abdul Mannan Baig*

*Department of Biological & Biomedical Sciences, Aga Khan University, Karachi*

**Background and Objective:** Drugs approved by drugs and chemical regulating agencies undergo extensive trails before being marketed. The rigorous extend to which they are being tested varies from country to country and the protocols outlined by the regulating body. Many of these chemical compounds approved for a particular disorder have diverse range of action on host tissues as well as microbes which reside as normal flora in the recipient host or pathogenic strains that infect the individual prior to or during the drug regime. This study highlights useful anti-microbial actions of these approved drugs and chemicals that have remained covert.

**Material and Methods:** Four of the six drugs that were a part of this study showed substantial in-vitro antimicrobial properties against pathogenic eukaryotic microorganisms. Most of these drugs like Dicyclomine, Procyclidine, Atropine, Loperamide, Naloxone and Apomorphine have never being reported for exhibiting their antibiotic potential against these human pathogens in past studies. In vitro growth inhibition assays were performed by incubating pathogenic eukaryotes with various concentrations of drugs in the growth medium for 24 to 48 h at 30°C. To determine cytotoxic effects, eukaryotic cells were incubated with drugs in phosphate-buffered saline for 24 h, and viability was determined using trypan blue exclusion staining. For controls, eukaryotic cells

were incubated with the solvent alone. Currently the same drugs are being tested for antibacterial properties against multiple drug resistant bacteria and fungi (unpublished data) with encouraging results.

**Results:** Of the drugs tested, Dicyclomine, and Loperamide showed potent cytotoxic effects, as no viable infective cells were observed, while Atropine, Naloxone Procyclidine, and Apomorphine exhibited a variable but significant amoebicidal effects.

**Conclusion:** At this era of emerging multiple drug resistance of the microbial organisms, these findings can be of considerable significance towards our fight against these microbes. Optimizing the dose would be the only challenge and already being gone through human trials appears to be the forte of such discovery.

**Keywords:** Multiple Drug Resistance, Drug discovery, Antibiotics

### 9.4

#### SIGNALOTROPIC ANTIBIOTICS : TARGETING VITAL DOWNLINK SIGNALING PATHWAYS IN PATHOGENIC MICROBES

*Abdul Mannan Baig*

*Department of Biological & Biomedical Sciences, Aga Khan University, Karachi*

**Background and Objective:** Pathogenic strains of protists that cause infections in human are resistant to several groups of antibiotics and antifungal agents. Given the ability to undergo cyst formation under hostile conditions, they resist even aggressive antimicrobials in this dormant phase. This in vitro study was done to determine the effects of a particular group of anticholinergic drugs, for which there was a potential to act as signalotropic antibiotic, a neology in antimicrobial and chemotherapeutic agents.

**Materials and Methods:** Study included testing differential concentrations of Atropine, Ipratropium, Dicyclomine and Procyclidine on pathogenic stains of *Acanthamoeba castellanii* and *Naegleria fowleri*. The drug concentrations

tested, ranged from 10µg/ml to 250 µg/ml in respective growth medium and incubated for 24h to 48h at 30 °C. To determine amoebicidal effects, amoebae were incubated with drugs in phosphate-buffered saline for 24 h, and viability was determined using trypan blue exclusion staining. For controls, amoebae were incubated with the solvent alone.

**Results:** All drugs acting as anticholinergics on muscarinic acetylcholine receptors exhibited substantial but differential anti-protist activity. Dicyclomine showed maximum amoebicidal activity at very low concentrations of 58 µg/ml while Atropine had a moderate amoebistatic activity at 200 µg/ml to 250 µg/ml. The other two agents, procyclidine and Ipratropium showed variable amoebicidal and static activity at different concentrations against these protists.

**Conclusion:** Targeting the receptors and pumps that cascade vital downlink signaling in growth and survival of microbial pathogens, offer a potential site for targeting them. The cholinergic receptors antagonism is one such possible target that in our studies resulted in substantial cidal and static effects in tested pathogenic protists.

**Keywords:** Antibiotic resistance, New Antibiotics, Vital receptors

## 9.5 IN VITRO EFFICACY OF CLINICALLY AVAILABLE DRUGS AGAINST GROWTH AND VIABILITY OF BRAIN EATING AMOEBEA, ACANTHAMOEBA CASTELLANII.

*Abdul Mannan Baig, Junaid Iqbal, Naveed  
Ahmed Khan*

*Department of Biological & Biomedical  
Sciences, Aga Khan University, Karachi*

**Background and Objectives:** The effects of clinically available drugs targeting muscarinic cholinergic, adrenergic, dopaminergic, and serotonergic receptors; intracellular calcium levels and/or the function of calcium-dependent biochemical pathways, ion channels and cellular pumps were tested against a keratitis isolate of

*Acanthamoeba castellanii* belonging to the T4 genotype.

**Materials and Method:** In vitro growth inhibition (amoebistatic) assays were performed by incubating *A. castellanii* with various concentrations of drugs in the growth medium for 48 h at 30°C. To determine amoebicidal effects, amoebae were incubated with drugs in phosphate-buffered saline for 24 h, and viability was determined using trypan blue exclusion staining. For controls, amoebae were incubated with the solvent alone.

**Results:** Of the eight drugs tested, amlodipine, prochlorperazine, and loperamide showed potent amoebicidal effects, as no viable trophozoites were observed (>95% kill rate), while amiodarone, procyclidine, digoxin, and apomorphine exhibited up to 50% amoebicidal effects. In contrast, haloperidol did not affect viability, but all the drugs tested inhibited *A. castellanii* growth. Importantly, amlodipine, prochlorperazine, and loperamide showed compelling cysticidal effects. The cysticidal effects were irreversible, as cysts treated with the aforementioned drugs did not reemerge as viable amoebae upon inoculation in the growth medium. Except for Apomorphine and haloperidol, all the tested drugs blocked trophozoite differentiation into cysts in encystation assays.

**Conclusion:** Given the limited availability of effective drugs to treat amoebal infections, the clinically available drugs tested in this study represent potential agents for managing keratitis and granulomatous amoebic encephalitis caused by *Acanthamoeba* spp. and possibly against other meningoencephalitis-causing amoebae, such as *Balamuthia mandrillaris* and *Naegleria fowleri*.

**Keywords:** *Acanthamoeba*, Brain eating amoeba, Drug testing in-vitro



## 9.6 EMPYEMA THORACIC IN CHILDREN: COMPARISON OF MANAGEMENT OPTIONS.

*Ahmad Vaqas Faruque, Ali Faisal Saleem,  
Muhammad Arif Mateen Khan  
Departments of Surgery and Paediatrics and Child  
Health, Aga Khan University, Karachi*

**Background & Objectives:** Management of pediatric pleural empyema remains controversial as there is no definite consensus on management superiority. We compared management options (medical vs. surgical) of children who were admitted at Aga Khan University, Karachi with pleural empyema.

**Materials and Methods:** We retrospectively reviewed the records of children (>1 mo. – 15 years) with discharge diagnosis of parapneumonic effusion, empyema or complicated pneumonia during 1996-2010. Children were further analyzed and compared on the basis their management options (surgical vs. only antibiotics).

**Results:** Among the 112 patients (medical (n=26) and surgical (n=86) groups) 54% were 5 year or younger. Fever, cough, and dyspnea were the major presenting symptoms. Staphylococcus aureus and Streptococcus pneumoniae were the commonest isolates. Surgically managed children were younger (p=0.01); less weight (p=0.05) and stayed more in hospital (p=0.003) as compared to medically managed children.

**Conclusions:** Early identification and prompt management along with right antibacterial agents are the paramount in empyema thoracic in children.

**Keywords:** Empyema in children, Tube thoracostomy, Decortication

## 9.7 ROLE OF A MULTIMODAL APPROACH IN MANAGEMENT OF HYDATID CYST DISEASE IN CHILDREN: A RETROSPECTIVE FILE REVIEW FROM A TERTIARY CARE HOSPITAL

*Ahmad Vaqas Faruque, Muhammad Arif Mateen  
Khan  
Department of Surgery, Aga Khan University,  
Karachi*

**Background and Objective:** Hydatidosis, commonly known as the Hydatid cyst disease, is a worldwide parasitic cystic disease with a potential of multi-organ involvement. There is a wide spectrum of treatment possibilities, ranging from conservative treatment to radical surgical treatment. The aim of the study is to show our results of the management practices of Hydatid cyst in children presenting to a tertiary care hospital of Pakistan.

**Materials and Methods:** This retrospective study was conducted by reviewing the case records of all pediatric Hydatidosis patients presenting at Aga Khan University, Karachi, Pakistan between 1991-2011. Besides demographic variables, clinical features, ultrasonological appearance, conventional and radical surgical approaches were compared in terms of complication, duration of hospital stay and recurrence rate.

**Results:** 29 patients (20 males and 9 females) included in the study, hepatic Hydatid cysts were present in 10(34.5%), pulmonary in 12(41.4%). Majority 18(62.0%) presented with a solitary cyst while 9 (31.0%) had 2 cysts. The “cystic form was the most common form seen in 19 (65.6%) of the cases. Alveolar form was seen in 7 (24.1%) patients (p<0.01). Preoperative Albendazole followed by surgery was the predominant form of management seen in 22 (75.9%) of the cases (p<0.01) and these patients had the shortest hospital stay (<1 week) (p>0.05). Recurrence of cysts was observed in 4(13.8%) of the patients. No case of post-operative complication or mortality was witnessed in our study (p <0.001).

**Conclusion:** Hepatic and pulmonary Hydatid cysts can be safely and effectively managed with preoperative albendazole followed by surgery

**Keywords:** Hydatidosis, multimodal approach, Children

## 9.8 ANALYSIS OF SUBTYPE-SPECIFIC PATTERNS OF REVERSE TRANSCRIPTASE DRUG RESISTANCE MUTATIONS

*Amna Batool, Inamullah Khan, Syed Hani Abidi,  
Syed Ali  
Medical College and Department of Biological &  
Biomedical Sciences, Aga Khan University,  
Karachi*

**Background and Objective:** Human immunodeficiency virus (HIV) primarily replicates in the host CD4<sup>+</sup> T cells. During the virus replicative cycle, HIV reverse transcriptase (RT) plays a significant role in catalyzing the conversion of viral RNA into DNA. This makes RT a prime target of anti-retroviral therapy. However, the lack of proof-reading ability of RT enables the enzyme to rapidly introduce mutations in HIV genome, some of which creates resistance against the drugs, rendering the anti-retroviral therapy ineffective. The aim of this study was to analyze subtype-specific patterns of RT drug resistance mutations.

**Materials and Methods:** A total of 10,291 HIV -1 reverse transcriptase gene sequences for HIV-1 subtypes A, B, C and AE were downloaded from HIV Los Alamos Database, edited, and aligned using MEGA software. These sequence alignments were used to identify drug resistant mutations using Stanford drug resistance database.

**Results:** The drug-resistance mutations identified in subtype AE were D67N, L210W, T215Y; in subtype B the mutations were D67N, T69S, K70G, T215Y; in subtype A, V106A, F227L, A62V, D67G, T69D, V75M, F77L, Q151M, M184V; while in subtype C, the mutations were L100V, V106I, V179D and M184L.

**Conclusion:** An understanding of various subtype-specific mutations conferring drug resistance to RT may help in tailor-designing optimal anti-HIV drug therapy for different HIV-1 subtypes.

**Keywords:** HIV-1, Reverse Transcriptase, Drug Resistance Mutations

## 9.9 TRENDS IN CRIMEAN-CONGO HEMORRHAGIC FEVER VIRUS CASE DETECTION IN PAKISTAN

*Azra Samreen, Lamia Altaf, Barry Atkinson, Roger  
Hewson, Zahra Hasan  
Department of Pathology & Microbiology, Aga  
Khan University, Karachi and Health Protection  
Agency, United Kingdom*

**Background and Objective:** Crimean-Congo Hemorrhagic Fever Virus (CCHFV) belongs to Bunyaviridae sp. and is endemic to Pakistan. CCHFV is tick-borne and transmitted to humans via cattle and CCHF can have a high case fatality rate. Dengue virus (DV) infections are also endemic in the region and can present as viral hemorrhagic fever. Rapid differential diagnosis is important for management of CCHF disease transmission. The objective was to investigate the association between CCHFV and DV infections in clinical specimens received for testing for CCHF.

**Materials and Methods:** In this retrospective study samples received for CCHFV RNA testing by PCR during 2007 – 2013. Viral RNA was extracted, reverse-transcribed and complementary DNA was amplified using PCR primers targeting the S segment of the CCHF genome. Dengue virus infection was tested using an IgM based ELISA assay, PanBio kit. DV RNA was tested by PCR using a real-time PCR method.

**Results:** A total of 307 samples were tested for CCHFV RNA by PCR. Of these, 45 (15%) were positive for CCHFV RNA. The number of positive cases year-wise 2007-2013 were; 0, 0, 3, 7, 5, 13 and 17 in 2013 (up until October). Month-wise distribution indicated that mostly the greatest number of positive cases were in July and Oct-Nov. Of the 262 CCHFV RNA negative cases, 162 were tested for Dengue virus and 73, with a dengue positive rate in CCHF negative samples to be 25%.

**Conclusion:** Between 2007-2013 we observed an increase in CCHFV positive cases at AKUH. A number of the negative cases were positive for dengue virus. This underscore the utility of real-time PCR based diagnosis for CCHFV and DV for rapid differentiation of viral hemorrhagic fevers in Pakistan.

**Keywords:** CCHF, Dengue, rapid diagnosis

### 9.10

#### MALARIA DETECTION WITH SYSMEX ANALYZER USING PSEUDOEOSINOPHILIA & ABNORMAL WBC SCATTERGRAM

*Beenish Saeed, Lubna Khaleeq, Bushra Moiz  
Department of Pathology & Microbiology, Aga Khan University, Karachi*

*Background and Objective:* Establishing a correct and early malaria diagnosis is a prerequisite for prompt & accurate treatment. Expert light microscopy remains the 'gold standard', but it requires an explicit request from clinicians. Malaria diagnosis with flow cytometry-based haematology analysers (Sysmex XE series) could become an important adjuvant diagnostic tool in the routine laboratory work-up of febrile patients as CBC is almost generally requested as part of routine investigation. Sysmex analyzers can indicate malaria infection by spurious eosinophilia or abnormal scattergram

*Materials and Methods:* Prospective study, conducted in the hematology section of the clinical laboratory, Aga Khan University hospital. Data of previous 9 months (January 2013 to October 2013) was taken into consideration. CBC samples were collected, slides were made for microscopic examination with eosinophilia flag or eosinophil abnormal distribution, thin & thick blood smears were prepared and stained with leishman's stain. Careful examination of smears were examined for leucocytes differential count and malaria parasite detection.

*Results:* A total of 137 cases with pseudoeosinophilia and abnormal WBC scattergram were generated by Sysmex analyzer during our study period. On microscopic examination 63 cases indicate increased eosinophil count while 74 cases were positive for Plasmodium. Among these these samples P.vivax were 69 while 5 were Plasmodium falciparum in different stages. Low platelets counts were indicated in 58 cases ranging between 26,000-130,000  $\times 10^9/L$ .

*Conclusion:* Urgent attention should be paid to spurious eosinophilia cases indicated by sysmex XE -5000 analyzer and careful examination of peripheral smear should be undertaken.

*Keywords:* Malaria detection, hematology analyzer, abnormal WBC scattergram

### 9.11

#### UTILITY OF QUANTIFERON- GOLD IN TUBE ASSAY TESTING FOR MYCOBACTERIUM TUBERCULOSIS INFECTION IN AN ENDEMIC SETTING

*Bushra Jamil, Maheen Hassan, Muniba Islam, Zahra Hasan  
Departments of Medicine and Pathology & Microbiology, Aga Khan University, Karachi*

*Background and Objective:* Diagnosis of Mycobacterium tuberculosis infection can be difficult. The early secreted and T cell activated antigen ESAT (6kDa) is a M. tuberculosis specific antigen which elicits Interferon-gamma responses from T cells of individuals infected with M. tuberculosis. The Quantiferon Gold assay is a whole blood based assay which employs ESAT6, Culture filtrate protein (CFP)-10 and TB7.7 antigens in a stimulation assay which then allows detection of MTB specific IFN-gamma responses in the host. QFT-G cannot distinguish between latent and active TB. The objective was to investigate MTB infection in samples received for QFT-G testing in the AKUH Clinical Laboratory from July to Sep 2013.

*Materials and Methods:* Whole blood was added to nil, antigen and mitogen tubes as per manufacturer's recommendations, Quantiferon, Cellestis, Qiagen, USA. at 37 oC for 18 h and supernatants collected for IFN-gamma testing by ELISA.

*Results:* Four healthy individuals and 10 clinical specimens were tested. Of the Healthy individuals, 3 were negative and 1 was positive. Of the 10 clinical samples, 5 were positive and 5 were negative. Of the positive clinical specimens, one had generalized lymphadenopathy and histopathological confirmation of MTB infection and 2 had vertebral osteomyelitis. Of the negative samples, one had Bordetella pertussis infection, 2 had metastatic cancer with fever and no other information was available on the others.

*Conclusions:* Testing of IFN-gamma responses using the QFT assay can detect M. tuberculosis in patients where differential diagnosis of this infection may lead to a change in treatment and management of the case.

*Keywords:* Tuberculosis, quantiferon, IFN-gamma

### 9.12 ACCIDENTAL FINDING OF DUST MITES IN ROUTINE CLINICAL STOOL SAMPLE OF AN ASYMPTOMATIC MAN.

*Bushra Zia, Hassaan bin Aftab, Mohammad Faizan Zahid, Joveria Farooqi, Ferozuddin, Mohammad Asim Beg*  
*Medical College and Department of Pathology & Microbiology, Aga Khan University, Karachi*

*Case Report:* We describe the coincidental discovery of dust mite eggs and larvae in the stool sample of a 56 year old male on routine check-up. Detailed history and examination were unremarkable. The subject reported to have pet cats however he was not responsible for their care and had minimal contact. He had no signs, symptoms or any other other clinical findings of the gastrointestinal system. He did not complain of or showed any signs of allergic manifestations that may have been associated with dust mites. The sample was repeated using a completely sterile stool container to eliminate the possibility of environmental contamination but yielded the same results. As the patient was completely asymptomatic and otherwise healthy, we concluded that no rigorous antiparasitic therapy was necessary to eliminate dust mites from his system.

*Conclusion:* The presence of dust mites has been reported in human stool as well as urine but their presence has been labeled as spurious. Since the oval structure of mite eggs resembles helminth eggs, they may be misidentified during routine microscopic analysis. To the best of our knowledge this is the first reported case from Pakistan, may be in part due to this misidentification. More importantly, this region has a high incidence of helminth infections, it is important to be aware of paratenic parasites which be confounders and confuse diagnosis. Clinical correlation is of utmost importance to avoid unnecessary treatment.

*Keywords:* Dust mites, asymptomatic, stool

### 9.13 TUBERCULOUS PERICARDITIS IN CHILDREN

*Arshalooz Rahman*  
*Department of Paediatrics & Child Health, Aga Khan University, Karachi*

*Introduction:* Extra pulmonary TB contributes to 15% of all TB cases. One form of extra pulmonary TB is pericarditis, presenting either as pericardial effusion or constrictive pericarditis. Diagnosing cases of childhood TB continues to be a challenge, since involved techniques do not have a high yield for diagnosis in this population. In order to diagnose, TB scoring systems comprising an amalgamation of clinical spectrum, history of TB contact, Tuberculin Skin Test (TST) results and radiologic evaluations have been devised and availed. For pericardial TB, pericardial tap, positive culture of the effusion fluid, caseous granuloma on pericardial biopsy, and echocardiography have been used as diagnostic modalities. This study strives to lay emphasis on importance of vigilantly treating TB as a disease without neglecting the possibility of fatal complications like pericardial TB secondary to this debilitating illness. We present a case series of pediatric patients with acute pericarditis secondary to TB, concentrating on their presentation, clinical course, management and outcome

*Methodology:* This is a retrospective case series based on review of records of pediatric patients diagnosed with TB pericarditis. From 1985-2011, all pediatric cases ( up till 18 years of age), admitted at The Aga Khan University Hospital, Karachi, with a confirmed or suspected diagnosis of TB pericarditis were studied. Diagnosis of TB was made in accordance with the National guidelines for diagnosis and management of TB in children. Individuals were screened and scored for TB following the Pakistan Pediatric Association scoring chart for screening of TB in children. They were then classified into four groups based on the scoring points; TB unlikely (0-2 points), possible TB to be kept under observation for three months (3-4 points), TB possible, investigations justifying

therapy (5-6 points), and TB unquestionable ( $\geq 7$ ).

**Results:** A total of 9 cases were included in our final report. The age range was between 1.8 years to 14 years. For each patient, a complete clinical history, physical examination, chest X-ray, and 2-dimensional Doppler echocardiography were recorded. All 9 patients, underwent Pericardiocentesis and/or pericardiectomy and all received a 9 month course of ATT with steroids for 8 weeks. Four children had a score of  $\geq 7$ , and four had a score between 5-7. None of the patients had any evidence of human immunodeficiency virus infection or primary immune deficiency. None of the cases were confirmed microbiologically and the diagnosis was clinical with supportive laboratory investigations as per the scoring chart of Pakistan Pediatric Association

**Conclusion:** To minimize mortality associated with TB pericarditis, rapid and early diagnosis and prompt management are of utmost significance. This is of particular importance in high burden countries where TB is endemic; hence a high clinical suspicion should be taken into consideration during diagnostic interventions.

**Keywords:** Tuberculous, Pericarditis, Tuberculous in Children

#### 9.14 ABDOMINAL TUBERCULOSIS IN CHILDREN- EXPERIENCE FROM A TB PROGRAM IN KARACHI.

*Farhana Amanullah, Mehreen Iqbal, Aryn Abdul Malik, Sadaf Hussain, Saba Shahid, Lubna Samad Indus Hospital and Interactive Research & Development, Karachi*

**Background and Objectives:** In developing countries, as much as 40% of the tuberculosis (TB) burden may occur in children of which 10 to 25% is extrapulmonary TB (EPTB). Abdominal TB is known to be the 6<sup>th</sup> most common type of EPTB. The objective of this study was to assess the clinical course and outcomes of abdominal TB in children at the Indus Hospital TB program.

**Materials and Methods:** We retrospectively reviewed medical records of all children 0-14 years old who were treated for abdominal TB at the Indus Hospital from March 2008 to March 2013.

**Results:** The Indus Hospital's Pediatric TB program has registered and treated 1197 children with TB disease from 2007 to date. EPTB comprises 45 % (543/1197) of all cases. Abdominal TB (25%) is the second most common cause of EPTB after lymph node TB. It is a significant cause of pediatric TB deaths, with 28% of mortality occurring secondary to abdominal TB. Abdominal TB occurs predominantly in female children (63%). Detailed analysis of 91/982 children with abdominal TB indicates that at presentation, abdominal pain (n=69, 76%), fever (n=67, 74%), weight loss (n=65, 71%), and loss of appetite (n=57, 63%) were the most commonly reported symptoms.

**Conclusion:** Abdominal TB is a common cause of EPTB in children in our program and is twice as common in females who are more likely to present with marked weight loss and severe disease. Difficulties with early diagnosis, lack of intravenous first line TB drugs, significant surgical morbidity and mortality in advanced cases remain challenges.

**Keywords:** Extrapulmonary TB, Abdominal TB, Pediatric TB Mortality

#### 9.15 INTERACTIONS OF NEUROPATHOGENIC ESCHERICHIA COLI K1 (RS218) AND ITS DERIVATIVES LACKING GENOMIC ISLANDS WITH PHAGOCYtic ACANTHAMOEBA CASTELLANII AND NON- PHAGOCYtic BRAIN ENDOTHELIAL CELLS

*Farzana Abubakar Yousuf, Zuhair Yousuf, Junaid Iqbal, Ruqaiyyah Siddiqui, Hafsa Khan, Naveed Ahmed Khan*

*Department of Biological & Biomedical Sciences, Aga Khan University, Karachi*

**Background and Objective:** The ability of neuropathogenic Escherichia coli K1 to resist grazing by environmental protist, Acanthamoeba suggested their long co-evolutionary history combined with a series of adjustments ensuring

bacterial survival, and that grazing resistance may have influenced evolutionary gain of *E. coli* K1 pathogenicity.

**Material and Methods:** Here we determined the role of various genomic islands in *E. coli* K1 interactions with phagocytic *A. castellanii* through association, interaction, survival and cyst survival assays and non-phagocytic brain microvascular endothelial cells through association, invasion and survival assays.

**Results:** The results revealed that the genomic islands deletion mutants of RS218 related to toxins (peptide toxin,  $\alpha$ -hemolysin), adhesins ((P fimbriae, F17-like fimbriae, non-fimbrial adhesins, Hek and hemagglutinin), protein secretion system (T1SS for hemolysin), invasins (IbeA, CNF1), metabolism (D-serine catabolism, dihydroxyacetone, glycerol, and glyoxylate metabolism showed reduced interactions with both *A. castellanii* and brain microvascular endothelial cells. Interestingly, the deletion of RS218-derived genomic island 21 containing adhesins (P fimbriae, F17-like fimbriae, non-fimbrial adhesins, Hek and hemagglutinin), protein secretion system (T1SS for hemolysin), invasins (CNF1), metabolism (D-serine catabolism) abolished *E. coli* K1 mediated cytotoxicity in a CNF1-independent manner.

**Conclusion:** Therefore, the characterization of these genomic islands should reveal mechanisms of *E. coli* K1 pathogenicity.

**Keywords:** *Acanthamoeba*, meningitis, protist

## 9.16

### LOCALIZED LUNG SCEDOSPORIOSIS IN AN IMMUNOCOMPETENT HOST WITH CLINICAL AND RADIOLOGICAL FEATURES SUGGESTIVE OF ASPERGILLOMA

*Fasih Ur Rahman, Muhammad Irfan, Kausar Jabeen, Naima Fasih, Hasnat Sharif*  
Departments of Medicine, Pathology & Microbiology and Surgery, Aga Khan University, Karachi

**Background and Objective:** *Scedosporium apiospermum* can cause a wide range of infections, ranging from subcutaneous mycetoma to disseminated sepsis in immunocompromised patients. In patients with cavitating lung diseases, it may develop localized lung infection similar to

*Aspergillus* species. It is usually highly resistant to commonly used antimycotic agents. We presented a case of localized lung *Scedosporiosis* in an immunocompetent host with clinical and radiological findings suggestive of *Aspergilloma*.

**Case:** A 40-year-old male with a history of pulmonary tuberculosis 15-years-back presented with complaint of recurrent episodes of cough and hemoptysis for the last 4 years. Physical examination revealed bronchial breathing in right upper and middle part of chest. CT scan chest showed two thick walled cavities in right upper lobe (4.2x2.4cm) and lower lobe (10x4.5cm) with fungal ball. Based on his history, physical examination and radiology, a diagnosis of *Aspergilloma* was made. He underwent wedge resection of right upper lobe lesion. Histopathology revealed acute and chronic inflammation around the bronchioles, and hemorrhagic infarction. Fungal elements were not identified on histopathology. Culture from lung tissue grew *S. apiospermum* on all plates. Based on worsening symptoms he was started on voriconazole and it continued for 4 months. He responded well and remained asymptomatic with chest X-ray improvement on follow-up.

**Conclusion:** Every fungal ball in reformed lung cavities is not *Aspergilloma*. Histopathology and fungal cultures are necessary for definite diagnosis and treatment as *S. apiospermum* is resistant to commonly used antimycotic agents.

**Keywords:** Fungal ball, *Aspergilloma*, *Scedosporium apiospermum*

## 9.17

### LABORATORY TESTING OF CLINICALLY APPROVED DRUGS AGAINST BALAMUTHIA MANDRILLARIS

*Huma Mlaik, Abdul Mannan Baig, Naveed Ahmed Khan, Ruqaiyyah Siddiqui*  
Department of Biological & Biomedical Sciences, Aga Khan University, Karachi

**Background and Objective:** Here we screened drugs, targeting vital cellular receptors and biochemical pathways, that are already in approved clinical use, for their potential clinical usefulness against *B. mandrillaris* encephalitis.

**Methods and Results:** Amoebicidal assays were performed by incubating *B. mandrillaris* with drugs (3 x 10<sup>5</sup> cells/0.5mL/well) in phosphate buffered saline for 24 h and viability was determined using Trypan blue exclusion staining. For controls, amoebae were incubated with the solvent alone. To determine whether effects are reversible, *B. mandrillaris* were pre-exposed to drugs for 24 h, washed twice, and incubated with human brain microvascular endothelial cells, which constitute the blood-brain barrier as food source, for up to 48 h. Of the ten drugs tested, amlodipine, apomorphine, demethoxycurcumin, haloperidol, loperamide, prochlorperazine, procyclidine, and resveratrol showed potent amoebicidal effects as no viable trophozoites were observed, while amiodarone, and digoxin exhibited minimal toxicity. When pre-treated with amlodipine, apomorphine, demethoxycurcumin, haloperidol, loperamide, prochlorperazine, procyclidine, and resveratrol, no viable trophozoites re-emerged, suggesting that drugs destroyed parasite irreversibly, and brain microvascular endothelial cell monolayers remained intact. In contrast, amiodarone, and digoxin-treated *B. mandrillaris* showed re-emergence of viable amoebae.

**Conclusions:** Based on the in vitro assay, amlodipine, apomorphine, demethoxycurcumin, haloperidol, loperamide, prochlorperazine, procyclidine, and resveratrol are potential antimicrobials for further testing against *B. mandrillaris* encephalitis. **Significance:** These findings may provide novel strategies for therapy but further research is needed to determine clinical usefulness of aforementioned drugs against granulomatous amoebic encephalitis caused by *B. mandrillaris*, and other free-living amoebae, such as *Acanthamoeba* spp., and *Naegleria fowleri*.

**Keywords:** *Balamuthia mandrillaris*, blood-brain barrier, granulomatous amoebic encephalitis

## 9.18

### IS AFLATOXINB1 A MARKER TO DIFFERENTIATE CLINICAL AND NON-CLINICAL ASPERGILLUS FLAVUS?

*Humaira Qureshi, Saeed Hamid, Syed Shayan Ali, Javeria Anwar, Naveed Ahmed Khan*  
Departments of Biological & Biomedical Sciences,  
Medicine and Medical College Aga Khan  
University, Karachi

**Background and Objective:** Given the opportunity and access, *Aspergillus flavus* can produce aspergillosis affecting various body organs, while its toxin, AflatoxinB1 (AFB1) has been implicated as a carcinogen in hepatocellular carcinoma. Based on previous findings, *A. flavus* can be divided into two groups, (i) isolates that can synthesize AFB1, and (ii) isolates unable to produce AFB1. The aim of this study was to assess whether AFB1 can be used as a marker to differentiate clinical and non-clinical isolates of *A. flavus*.

**Materials and Methods:** A representative clinical isolate was obtained from a patient having allergic rhinosinusitis and the non-clinical isolate was sourced from soil. Both isolates were identified as *A. flavus* using selective media. AFB1 production was assessed through cultural assays. The genes for aflatoxin production, aflR and aflS, were PCR amplified and sequenced. Crude extracts were prepared and tested for AFB1 using ELISA. Additionally, crude extract of clinical and soil isolate were tested for their cytotoxic effects on human brain microvascular endothelial cells (HBMEC) and human heptaoma cells (Huh7).

**Results:** The findings revealed that the clinical isolate but not the soil isolate produced yellow pigmented colonies which turned pink under ammonium hydroxide vapours, indicative of AFB1 presence. The aflR and aflS were present in both isolates with 99% sequence similarity. In cytotoxicity assays, clinical isolate exhibited up to 33% HBMEC toxicity compared with 17% cell death in the soil isolate.

**Conclusion:** Further studies will test a large number of clinical and non-clinical isolates to determine the usefulness of AFB1 as a differentiating marker for pathogenic *A. flavus*.

**Keywords:** AflatoxinB1, *Aspergillus flavus*, Clinical isolate

### 9.19 ESCHERICHIA COLI K1 DOES NOT EXHIBIT PROTEOLYTIC ACTIVITIES TO EXERT ITS PATHOGENICITY

*Junaid Iqbal, Mehak Rajani, Ruqaiyyah Siddiqui, Naveed Ahmed Khan*  
*Department of Biological & Biomedical Sciences, Aga Khan University, Karachi and Dow Medical College, Dow University of Health Sciences, Karachi*

*Background and objective:* Proteases are well-known virulence factors that promote survival, pathogenesis and immune evasion of many pathogens. Several lines of evidence suggest that the blood–brain barrier permeability is a prerequisite in microbial invasion of the central nervous system. Because proteases are frequently associated with vascular permeability by targeting junctional proteins, here it is hypothesized that neuropathogenic Escherichia coli K1 exhibit proteolytic activities to exert its pathogenicity.

*Material and methods:* Zymographic assays were performed using collagen and gelatin as substrates. The lysates of whole E. coli K1 strain E44, or E. coli K-12 strain HB101 were tested for proteolytic activities. The conditioned media were prepared by incubating bacteria in RPMI-1640 in the presence or absence of serum. The cell-free supernatants were collected and tested for proteases in zymography as mentioned above. Additionally, proteolytic degradation of host immune factors was determined by co-incubating conditioned media with albumin/immunoglobulins using protease assays.

*Results:* When collagen or gelatin were used as substrates in zymographic assays, neither whole bacteria nor conditioned media exhibited proteolytic activities. The conditioned media of neuropathogenic E. coli K1 strain E44, or E. coli K-12 strain HB101 did not affect degradation of albumin and immunoglobulins using protease assays.

*Conclusions:* Neither zymographic assays nor protease assays detected proteolytic activities in either the whole bacteria nor conditioned media of E. coli K1 strain E44 and E. coli K-12 strain

HB101. These findings suggest that host cell monolayer disruptions and immune evasion strategies are likely independent of proteolytic activities of neuropathogenic E. coli K1.

*Keywords:* Escherichia coli K1, Proteases, blood–brain barrier

### 9.20 MICROBES FROM THE GUT OF ANIMALS LIVING IN POLLUTED ENVIRONMENTS ARE A SOURCE OF ANTIBIOTICS

*Junaid Iqbal, Ruqaiyyah Siddiqui, Alia kazi, Aline Arif, Nayab Ahmed, Romesa Ibrahim, Ahmer Ashraf, Naveed Ahmed Khan*  
*Department of Biological & Biomedical Sciences and Medical College Aga Khan University, Karachi*

*Background and Objective:* Antibiotic resistance in bacteria has become a major global challenge. In the last few decades morbidity and mortality associated with infections due to multidrug-resistant (MDR) bacteria have increased significantly. There is a growing need for new antibacterial compounds to deal with antibiotic resistance. It is not clear how animals living in unhygienic conditions have developed ways of protecting themselves against pathogenic microbes. Here, we hypothesized that bacteria which colonize gut of animals living in unsanitary conditions may be responsible for producing antibacterial substances and thus protecting the host species.

*Materials and Methods:* To test this hypothesis, we isolated bacteria from the gut of marine invertebrates, insects, amphibians, fishes, reptiles, birds and mammals. Our pilot studies isolated Aeromonas hydrophila, Bacillus sp., Moraxella sp., Ochrobactrum anthropi, Providencia rettgeri, Pseudomonas aeruginosa, Salmonella sp., Serratia marcescens and Shewanella putrefaciens from the gut of Black Cobra. The conditioned media of the aforementioned bacteria were tested for cidal activities against B. cereus, E. coli K1, MDR-Acinetobacter baumannii, MDR- P. aeruginosa, MRSA and Shigella flexneri.



**Results:** The results revealed that *Bacillus* sp., *Moraxella* sp., *O. anthropi*, *P. aeruginosa* and *Salmonella* sp. produced molecules that effectively killed MDR- *A. baumannii*, *E. coli* K1, *B. cereus*, MRSA and *S. flexneri*.

**Conclusion:** Further studies are in progress to identify gut microbial flora of a variety of animal species and screening for antibacterial activities against a range of MDR-bacterial pathogens. These studies will undoubtedly identify novel antibacterial compounds.

**Keywords:** Microbes, antibiotic, Black Cobra gut

## 9.21 INCREASED EXPRESSION OF SUPPRESSOR OF CYTOKINE SIGNALING-1 IS ASSOCIATED WITH EXTENSIVE CASEOUS NECROSIS IN PATIENTS WITH TUBERCULOUS LYMPHADENITIS

*Kiran Iqbal Masood, Shahid Pervez, Beena Umar, Martin E. Rottenberg, Zahra Hasan*  
Department of Pathology & Microbiology, Aga Khan University, Karachi and Karolinska Institutet, Sweden

**Background and Objective:** Granulomas are the hallmark of tuberculosis (TB) and their role is to contain *Mycobacterium tuberculosis*. Effective granuloma formation depends on appropriate recruitment and activation of leucocytes to the site by a combination of cytokines and chemokines. T cell derived Interferon-gamma (IFN- $\gamma$ ) activates macrophages, which secrete tumor necrosis factor (TNF)- $\alpha$  and chemokines such as, CCL2 required for the formation and maintenance of granulomas. IFN- $\gamma$  responses are regulated by Suppressor of Cytokine Signaling (SOCS) molecules SOCS1 and SOCS3, which are up-regulated in peripheral blood cells of patients with TB. There is limited information about the role of SOCS1 and SOCS3 in regulating in situ responses at the site of infection.

**Materials and Methods:** We studied cases with tuberculous lymphadenitis (LNTB) comparing, granulomas with focal (f-LNTB) and extensive

(e-LNTB) necrosis. Immuno-histochemical staining was performed for CD3, CD68, SOCS1, SOCS3 and CXCR3 in f-LNTB (n=10), e-LNTB (n=8), and healthy reactive lymph nodes (r-LN, n=8).

**Results:** Comparison of these markers demonstrated that SOCS1, SOCS3 and CXCR3 were highly expressed in LNTB. CD3 staining was greater in f-LNTB as compared with e-LNTB. Conversely, SOCS1 staining was increased in e-LNTB as compared with f-LNTB. SOCS3 and CXCR3 staining was comparable between f-LNTB and e-LNTB. Overall, up-regulated expression of SOCS1 was associated with fewer T cells and extensive caseating necrosis in LNTB granulomas.

**Conclusion:** In *M. tuberculosis* infected granulomas, increased SOCS1 expression leading to reduced IFN- $\gamma$  responses would contribute to the exacerbated necrosis and tissue damage characteristic of destabilized granulomas which allow mycobacteria to disseminate.

**Keywords:** Tuberculosis, SOCS1, Granulomas

## 9.22 DIAGNOSES OF CHRONIC GRANULOMATOUS DISEASE: NBT OR DIHYDRORHODAMINETEST

*Maryam Rahim Sheikh, Samreen Zaidi, Ali Saleem*  
Department of Paediatrics & Child Health, Aga Khan University, Karachi

**Background and Objective:** Chronic granulomatous disease (CGD) is a rare primary immunodeficiency (PID) and the diagnoses may be missed with the commonly available Nitroblue tetrazolium test (NBT).

**Case Report:** We are reporting two children in whom clinical suspicion of primary immunodeficiency was strong, but for more than two years they remain undiagnosed with most of the laboratory work-up including NBT were negative. Later, the Dihydrorhodamine test (DHR) established the diagnosis. The first child presented to us at 11 months of age with

*Aspergillus fumigatus* osteomyelitis and despite appropriate surgical and medical management failed to be cured completely. He suffered from repeated episodes of osteomyelitis which strongly suggested underlying chronic granulomatous disease. The second child presented with repeated cervical lymphadenopathy, lymph node biopsy was done twice and it uncovered a granulomatous histopathology. He received empirical anti-tuberculous treatment without any response. Subsequently the child developed *Serratia* osteomyelitis of left calcaneum, an organism associated with Chronic granulomatous disease.  
**Conclusion:** Awareness of the limitations of the NBT test and knowledge of the more specific and sensitive Dihydrorhodamine test may lead to early and improved diagnosis of CGD.

**Keywords:** chronic granulomatous disease, Dihydrorhodamine test, Nitroblue tetrazolium test

### 9.23 ANTIMICROBIAL PROPERTIES IN THE SERUM AND LYSATES OF BODY ORGANS OF SNAKES

*Mehwish Sagheer, Ruqaiyyah Siddiqui, Junaid Iqbal, Naveed Ahmed Khan*  
*Department of Biological & Biomedical Sciences,*  
*Aga Khan University, Karachi*

**Background and Objective:** It is hypothesized that animals living in polluted environments or feeding on germ-infested rodents must possess antimicrobials to counter microbial pathogens. Therefore we tested serum and crude extracts prepared from different organs of *Naja karachiensis* (black cobra) and *Eristicophis macmahonii* (leaf-nosed viper).

**Materials and Methods:** Tissues were dissected, pooled, re-suspended in 1mL of sterile distilled water and subjected to four cycles of freeze-thaw. Tissues were disrupted by homogenizing and sonication. The antimicrobial activities of extracts were tested against neuropathogenic *Escherichia coli* K1, methicillin-resistant *Staphylococcus aureus* (MRSA), *Pseudomonas aeruginosa* and *Streptococcus pneumoniae*, *Acanthamoeba castellanii* and *Fusarium solani*.

**Results:** For the first time, the findings revealed that serum and various organ extracts of *N. karachiensis* and *E. macmahonii* exhibited potent antimicrobial activity against *Escherichia coli* K1, methicillin-resistant *Staphylococcus aureus* (MRSA), *Pseudomonas aeruginosa* and *Streptococcus pneumoniae*, *Acanthamoeba castellanii* and *Fusarium solani* in a concentration dependent manner; in addition activity of these extracts is heat resistant.

**Conclusion:** Further studies are needed to identify active components and assess their clinical relevance.

**Keywords:** Infectious diseases, antimicrobial activity, black cobra

### 9.24 HERPES ZOSTER IN AN ELDERLY LADY WITH APLASTIC ANEMIA ON CYCLOSPORINE THERAPY.

*Mohammad Faizan Zahid, Mariam Ghufuran,*  
*Salman Naseem Adil*  
*Medical College, Departments of Family Medicine*  
*and Pathology & Microbiology, Aga Khan*  
*University, Karachi*

**Case report:** A 70 years old lady presented with severe burning/pins and needle sensation on the left upper chest and left scapular region for the past 12 days. She had been diagnosed with diabetes and hypertension, both of which were well-controlled. She had also been diagnosed with aplastic anemia five months ago when she presented with pallor, weakness, pyrexia of unknown origin and frequent bleeding and bruising. Her aplastic anemia was well-managed with cyclosporine 100mg twice daily. A single vesicle with erythema of skin on the left scapular region was seen, however, visible lesions were on the chest. Keeping in mind her aplastic anemia and immunosuppressive therapy, herpes zoster was suspected and antiviral therapy was advised, however the patient deferred. Eight days later the patient returned with multiple vesicular eruptions on the left scapular and left upper chest regions. She was started on Valacyclovir 500mg twice daily, instead of the standard dose of 1g twice daily due raised serum creatinine. Over the next 3 weeks her symptoms had resolved and the lesions

had crusted with scab formation and eventually healed, henceforth, valacyclovir was discontinued.

*Conclusion:* This case highlights the reactivation of varicella-zoster virus, an important event in chronically immunocompromised patients. Our patient had an atypical presentation with prolonged history and delayed, limited vesicular eruption.

*Keywords:* Herpes zoster, immunosuppressive therapy, cyclosporine

## 9.25

### PRIMARY AMOEBIC MENINGOENCEPHALITIS VS. ACUTE BACTERIAL MENINGITIS: A COMPARISON OF CLINICAL PRESENTATIONS.

*Mohammad Faizan Zahid, Muhammad Hamza  
Saad Shaukat, Bilal Ahmed, Syed Faisal Mahmood  
Medical College and Department of Medicine, Aga  
Khan University, Karachi*

*Background and Objective:* Primary Amoebic Meningoencephalitis(PAM) is a rare but fatal CNS infection caused by the free living amoeba *Naegleria fowleri*. As of 2006, over 20 deaths have been caused by PAM in Karachi. As patients present with signs and symptoms similar to acute bacterial meningitis(ABM), diagnosis and treatment is often delayed which contributes to poor outcomes. We therefore compared the clinical presentation of patients presenting with PAM and ABM.

*Materials and Methods:* We conducted a retrospective case-control study comparing culture proven cases of PAM with ABM presenting to AKU between January 2006 and July 2013. Only patients with blood and/or CSF cultures positive for *Streptococcus pneumoniae* were included as controls.

*Results:* There were 12 cases and 16 controls in total. When comparing PAM with AMB, patients with PAM were more likely to be male(91.7% vs. 25%), younger(mean age 30.08years vs. 56.00years), present with seizures(41.7% vs. 6.3%), vomiting(66.7% vs. 56.3%), higher monocyte count(mean 4.86% vs. 2.78%) and a low GCS score(mean 7.00 vs. 10.69). While CSF parameters were identical in both groups, CSF chloride was lower in patients with PAM(mean 112.55 mEq/L vs. 120.20 mEq/L). PAM was also

more likely to present if the city's average maximum temperature was higher in the previous 2 weeks(32.08°C vs. 25.88±°C). On multivariate analysis, PAM was more likely if patients presented when the city's average maximum temperature was high, being young males with history of nausea.

*Conclusion:* PAM and ABM remain virtually indistinguishable, however, these predictive features should be validated in a prospective study and may lead to a viable algorithm for early diagnosis and management of these patients, and perhaps yield comparatively favourable outcomes in such patients.

*Keywords:* Primary Amoebic Meningoencephalitis, Acute Bacterial Meningitis, Comparison

## 9.26

### RECURRENT SALMONELLOSIS IN A CHILD WITH DEFECT IN IL-12 RB1 / IFN $\gamma$ PATHWAY.

*Mohammad Faizan Zahid, Syed Asad Ali, Abdul  
Gaffar Billoo, Fatima Mir  
Medical College and Department of Paediatrics &  
Child Health, Aga Khan University, Karachi*

*Case report:* A 3 year old boy presented with fever, abdominal pain and cervical lymphadenopathy. He had previously been treated empirically with anti-tuberculous therapy twice, at age 9 months and 27 months, for peripheral lymphadenopathy. An older sibling died of suspected tuberculous meningitis. Mantoux test was normal. Bone marrow and lymph node biopsy ruled out lymphoma and absolute neutrophil and lymphocyte counts were normal. Blood and lymph node cultures were positive for *Salmonella typhi*. The child's symptoms resolved with IV ceftriaxone and he was discharged. Over the next 2 years, the child was admitted every 2-3 months for culture positive *S. typhi* bacteremia with complaints of fever, abdominal distention and dysentery. HIV workup was negative. A prolonged course of probenicid and high dose amoxicillin increased interval between episodes to 4-5 months only. Cholecystectomy was debated and deferred due to suspicion of immunodeficiency. Blood samples from patient and parents were sent to

France for workup and IL-12 R $\beta$ 1 deficiency was found. Parental counseling and subsequent patient management remained difficult in view of financial constraints and outstation residence of family. At age 7 years, the child presented with small bowel obstruction. He was managed conservatively with antibiotics, IV fluids and blood transfusions, but eventually succumbed to endotoxic shock.

*Conclusion:* This case highlights the importance suspecting IL-12 R $\beta$ 1 deficiency in children with repeated salmonellosis, a diagnosis which precludes intensive and aggressive monitoring and management of the patient in scenarios where bone marrow transplants are not feasible.

*Keywords:* Recurrent Salmonellosis, IL-12 R $\beta$ 1 / IFN  $\gamma$  pathway, defect

## 9.27

### ALARMING MEASLES OUTBREAK: A RESULT OF SUBOPTIMAL IMMUNIZATION COVERAGE IN PAKISTAN

*Naila Pachani, Salima Karani*

*School of Nursing & Midwifery, Aga Khan University, Karachi*

*Background:* Since the invention of vaccines, western world has made strong hold over the spread of infectious diseases. Unfortunately, developing countries are still striving to fight against most of these diseases including measles. Measles, which is still considered to be merely a routine childhood illness, has been universally signified to bear considerable health, economic and social burden on people of endemic regions. Due to steady increase in measles cases and deaths, WHO has declared Pakistan to be on the verge of a national measles outbreak which may occur at any time.

*Objective:* Healthcare providers particularly nurses need to be equipped with formal training in order to recognize and appropriately respond to measles. Thus, the purpose of this research paper is to highlight considerable root cause of the mounting incidence of measles in developing countries and to propose some practical nursing recommendations.

*Materials and Methods:* A literature search was conducted related to publications between 2009 and 2013 from different research databases to

identify prospective factors thought to be associated with measles outbreak by incorporating a case-report analysis. Furthermore, it predominantly emphasizes the role of nurses to curb the threat of this dreadful outburst.

*Results:* Substantial evidence was collected through several articles suggesting that measles is completely preventable if the key factor of insufficient vaccine coverage be addressed effectively at individual, community, healthcare professionals and national levels.

*Conclusion:* Ensuring sufficient immunization coverage is essential for successful measles prevention. Therefore, nursing professionals should enhance measles eradication by implementing optimal measles vaccination coverage, health education and screening campaigns, surveillance and notification.

*Keywords:* Measles outbreak, Immunization coverage, Vaccine

## 9.28

### OPHTHALMOMYIASIS EXTERNA CAUSED BY THE SHEEP BOTFLY OESTRUS OVIS: A CASE REPORT FROM KARACHI, PAKISTAN

*Naima Fasih, Kanza Noor Qaiser, Syeda Aishha Bukhari, Bushra Jamil, Mohammad Asim Beg*  
*Department of Pathology & Microbiology, Medical College, Aga Khan University, Karachi and Bismillah Taqi Hospital, Karachi*

*Background and Objective:* Ocular myiasis is a rare manifestation in humans. Ophthalmomyiasis externa is mainly caused by the sheep botfly *Oestrus ovis*; therefore, it is usually seen in rural areas or exposure to farm animals. Here we reported a case of ophthalmomyiasis externa in a young male from Karachi with no known exposure to farm animals or rural areas.

*Case report:* A 33-year-old male in month of December, came to eye clinic with a one day history of redness and irritation in his left eye. He had no significant history of any ocular problem. He did not report recent exposure to domestic or farm animals but gave a history of something hit his eye while standing under a

tree. On examination the conjunctiva was mildly congested with profuse lacrimation. On slit lamp examination, there were small foreign bodies were observed adhering to the conjunctival mucosa, around 1mm in size. After local anesthesia, eye was washed with pyodine solution and manually picked out approximately 25 to 30 larvae with a forceps. It was identified as the first stage instar larva of *O. ovis*. He was started on topical antibiotic (moxifloxacin). Follow up was done the next day and then after 1 week and 1 month. On follow up he was completely asymptomatic and no further larvae were seen.

**Conclusion:** Our case creates awareness about ophthalmomyiasis especially in developing countries like Pakistan, where the general standard of hygiene is low and fly infestation is common.

**Keywords:** Ophthalmomyiasis externa, eye infections in Pakistan, Pakistan

### 9.29 CHANGING SEROTYPES AND ANTIMICROBIAL RESISTANCE PATTERN AMONG VIBRIO SPECIES FROM PAKISTAN, 2007-2012

*Naima Fasih, Nagia Ghanchi, Kausar Jabeen,  
Seema Irfan, Afia Zafar  
Department of Pathology & Microbiology, Aga  
Khan University, Karachi*

**Background and Objective:** Emergence of virulent strains and increase in antimicrobial resistance in *Vibrio* species is a major issue in developing countries, therefore, we aim to assess the occurrence and antimicrobial resistance pattern among *Vibrio* species.

**Materials and Methods:** In this cross sectional study, data retrieved and evaluated from centralized database of all clinical specimens submitted to Aga Khan University Hospital, Karachi, Pakistan (2007-2012) and yielding growth of *Vibrio* species. Antimicrobial susceptibility profile of *Vibrio* species isolates was evaluated for resistance to ampicillin,

ofloxacin, tetracycline, co-trimoxazole and chloramphenicol.

**Results:** A total of 1173 *Vibrio* species were isolated from clinical samples during the period of 2007 to 2012. Amongst *Vibrio* species analyzed, 93% were *Vibrio cholerae* and 7% non-*cholera Vibrio* species. Serotyping revealed 1024 (87%) isolates as *V. cholerae* O1, of which 153 (15%) and 871(85%) isolates were characterized as Inaba and Ogawa serotype respectively. Non-O1 and non-O139 *V. cholerae* strains were 73 (6%), however *V. cholerae* O139 strains were not isolated. The antimicrobial resistance rate in *Vibrio* species was ampicillin (7%), chloramphenicol (2.6%), co-trimoxazole (90%), tetracycline (15%) and ofloxacin (0.7%). *V. cholerae* showed 3.5% resistance to ampicillin compared to 60.5% in non-*cholera Vibrio* species. Tetracycline resistance was 15.4% in *V. cholerae* versus 5.4% in non-*cholera Vibrio* species.

**Conclusions:** This study shows ofloxacin is still an effective drug for treatment but emergence of tetracycline and ofloxacin resistance is alarming. Our findings points to a need for a continuous drug surveillance

**Keywords:** Antimicrobial resistance, Pakistan, *Vibrio*

### 9.30 IL2 /IL4 PLASMA LEVELS PREDICT RADIOLOGICAL RECOVERY PRE- TREATMENT IN PULMONARY TUBERCULOSIS PATIENTS

*Najeaha Talat Iqbal, Firdaus Shahid, Ghaffar  
Dawood, Rabia Hussain  
Departments of Paediatrics and Child Health,  
Pathology & Microbiology, Aga Khan  
University, Karachi*

**Background and Objective:** Identification of TB patients as slow or fast responders is important for effective clinical management and has therefore been a matter of intense investigation. To date, no endogenous biomarkers can predict fast and slow recovery in TB patients at the initiation of chemotherapy.

**Materials and Methods:** In this study, pulmonary TB patients (N=15) were assessed for radiological recovery at 6, 12 and 24 months. Radiological healing was considered fast (N=4), if tissue healing occurred within 6 months post chemotherapy, moderate (N=4), if healing occurred within 12 months or slow (n=5), if recovery took longer than 24 months. Baseline plasma cytokines were assessed using cytometric bead array (BD Human Th1/Th2 cytokine kit II).

**Results:** Of the 6 cytokines, IL2 and IL4 cytokine cluster discriminated slow and fast responders in to two distinct clusters with slow responders being associated with high IL2 and IL4 producers at baseline (p=0.001; MWU test) with 100% accuracy compared to fast and moderate recovery group.

**Conclusion:** Cluster analysis of IL2 and IL4 discriminates slow from fast responders in to two distinct groups and may be useful as predictive biomarkers of recovery in TB patients.

**Keywords:** Tuberculosis, Radiological recovery, Cytokines

### 9.31

#### THE RELATIONSHIP OF CHEMO ATTRACTANT (CATELICIDIN AND CHEMERIN) WITH VITAMIN D IN PATIENTS WITH PULMONARY TUBERCULOSIS

*Najeeha Talat Iqbal, Syeda Sadia Fatima, Nisar Rao, Mohammad Irfan, Bushra jamil, Rabia Hussain*

*Departments of Paediatrics and Child Health, Biological and Biomedical Sciences, Aga Khan University, Karachi*

**Background and Objective:** Cathelicidin and Chemerin share structural characteristics and biological properties such as chemo-attractant for immune cells and anti-bacterial activity. Vitamin D regulates the synthesis of Cathelicidin in macrophages for its anti-mycobacterial activity, which is regulated by sufficient levels of 25(OH)D3 vitamin D.

Vitamin D also exerts anti inflammatory responses in TB patients. In this study, we investigated an association of vitamin D with Cathelicidin and Chemerin in patients with pulmonary TB (n=22) and healthy controls (n=17).

**Materials and Methods:** Plasma circulating level of vitamin D, Cathelicidin and Chemerin levels were estimated using commercial ELISA kits.

**Results:** TB disease stratification in the study group, showed no relationship with mean plasma vitamin D and Cathelicidin. However, Chemerin level was higher in healthy controls (MWU; p=0.02) compared to TB patients. A trend of higher Chemerin and Cathelicidin was also observed in TB patients with <20ng/ml of vitamin D (KW; p=0.037). Rank order analysis indicated negative ranks in 19 of the 22 donors (Wilcoxon sign rank test; p=0.017) implicating a relationship of lower chemerin vs higher cathelicidin level in disease state.

**Conclusion:** Both Chemerin and Cathelicidin are involved in inflammatory process in recruitment of chemokine secreting cells to site of infection. A trend of higher level of both peptides was observed in TB patients with <20ng/ml of vitamin D compared to healthy controls, which indicates a chronic inflammatory state in TB patients. The role of Chemerin and Cathelicidin in TB disease pathogenesis needs further investigation.

**Keywords:** tuberculosis, Cathelicidin, Chemerin

### 9.32

#### MYOCARDITIS COMPLICATING PLASMODIUM VIVAX MALARIA

*Noreen Nasir, Zahra Aziz Samani, saima.lalani, Aysha Almas*

*Department of Medicine and Medical College, Aga Khan University, Karachi*

**Background and Objective:** Few case reports of complicated Vivax malaria have been reported. Cardiac complications have rarely been reported with this infection. We observed an unusual case of Vivax malaria complicated by myocarditis.

**Case report:** A 20 year old girl presented to emergency room (ER) with complains of fever, lower abdominal pain and nausea and vomiting for 2 days. Initial vitals were a heart rate of 107 beats/min, blood pressure 82/59 mm Hg , respiratory rate was 16 breaths per minute at room air and was afebrile . Systemic examination revealed generalized tenderness in the abdomen without visceromegaly and positive gut sounds, with coarse crackles and decreased breath sounds at the right lung base. A peripheral blood film showed gametocytes of Plasmodium Vivax species. She was treated with Chloroquine phosphate, Levofloxacin 750mg PO once daily and resuscitated with intravenous fluids. While treatment, she developed hypoxemic respiratory failure necessitating intubation and mechanical ventilation. Hemodynamic monitoring revealed a central venous pressure (CVP) of 16mm of H<sub>2</sub>O. Her repeat CXR confirmed parenchymal fluid in lungs with bilateral pleural effusions. An echocardiogram revealed ejection fraction of 30% with severe global hypokinesia and moderate mitral regurgitation. Hence this patient had developed myocarditis secondary to Vivax malaria. Inotropic support was started with Dopamine and Dobutamine and she was diuresed .Over the next 48 hours ,she was successfully extubated and shifted back to medical ward.

**Conclusion:** Myocarditis associated with P.Vivax is extremely rare. Hence we report a novel association.

**Keywords:** Plasmodium vivax malaria, Myocarditis, ARDS

### 9.33

#### HPV PREVENTION: THE ORIGIN OF THE CERVICAL CANCER IN WESTERN COUNTRIES

*Numan Hussain, Noreen Kamran  
Department of Community Health Sciences, Aga Khan University, Karachi*

**Background and Objective:** Cancer is always named for the part of the body where it starts, when cancer begins in the cervix, it is called

cervical cancer. Cervical cancer is mostly preventable in the majority of Western countries because tests, screenings and vaccines to put off HPV infections are accessible. When cervical cancer is originated near the beginning, it is greatly treatable and allied with long survival and good quality of life. The human papillomavirus (HPV) is the major cause of cervical cancer. It happens most frequently in women over age 30. Each year, about 12,000 women in the United States acquire cervical cancer. The objectives were to recognize the factors that decreases risk for HPV which leads to cervical cancer and to identify the strategies to minimize incidences of cervical cancer.

**Materials and Method:** Systematic review of the literature from 07 research articles gathered through print and electronic media device published between the years 1996 to 2006.

**Results:** While there is no clear-cut casual controlled assessment that proves the significance of disease management, there is quite large bodies of facts gathered that proposes the effectiveness of disease management via early detection for cervical cancer. Therefore HPV vaccines are available to protect females against the types of HPV that cause most cervical and vaginal cancers.

**Conclusion:** It is recommended that females get the same vaccine brand for all three doses, whenever possible. It is important to note that even women who are vaccinated against HPV need to have regular Pap tests to screen for cervical cancer.

**Keywords:** HPV, Cervical Cancer, HPV vaccines

### 9.34

#### FAILURE OF CHEMOTHERAPY IN THE FIRST REPORTED CASES OF ACANTHAMOEBA KERATITIS IN PAKISTAN *Ruqaiyyah Siddiqui, Tanveer Chaudhry, Sahreena Lakhundi, Khabir Ahmad, Naveed Ahmed Khan Departments of Biological & Biomedical Sciences and Surgery, Aga Khan University, Karachi*

**Background and Objective:** Acanthamoeba keratitis is a painful and progressive infection of the cornea that can result in loss of vision. Here, for the first time in Pakistan, we report two cases of Acanthamoeba keratitis.

**Case report:** The patient was a 37-year old female who presented with severe itching, redness, pain, along with loss of vision. The patient was a regular

soft contact lens wearer. The second patient was a 25-year old female who had been using soft contact lenses for the past two years. She presented with a burning sensation and extreme pain, along with loss of vision. Both patients were treated for a possible microbial keratitis with topical moxifloxacin hydrochloride drops, vancomycin drops, propamidine isethionate ointment, amphotericin B drops, and amikacin drops. However the response was inadequate and both patients were referred for corneal transplant. *Acanthamoeba castellanii* was isolated by placing contact lenses and contact lens cases on non-nutrient agar plates containing a lawn of non-invasive *E. coli* K-12 HB101 bacteria. The polymerase chain reaction using genus-specific probes confirmed the identity of *Acanthamoeba* spp., while morphological characteristics of trophozoites and cysts were suggestive of *A. castellanii* in both cases. With growing use of contact lenses for vision correction as well as their cosmetic use together with sub-standard lens care in this region, there is a need for increased awareness of this sight-threatening infection.

*Keywords:* *Acanthamoeba* keratitis, soft contact lenses, *Acanthamoeba castellanii*

### 9.35 INEFFICACY OF COMMERCIALY AVAILABLE CONTACT LENS DISINFECTING SOLUTIONS AGAINST CORNEAL PATHOGENS

*Sahreena Lakhundi, Naveed Ahmed Khan,  
Ruqaiyyah Siddiqui  
Department of Biological & Biomedical  
Sciences, Aga Khan University, Karachi*

*Background and Objective:* The objective of this study was to determine the antimicrobial properties of commercially available contact lens disinfecting solutions against major corneal pathogens.

*Materials and Methods:* A variety of contact lens solutions were purchased including ReNu MultiPlus, DuraPlus, Ultimate Plus, OptiFree Express, Kontex Clean, Kontex Normal, Kontex Multisol extra+, Kontex Soak. Antimicrobial properties were determined against

*Pseudomonas aeruginosa*, *Serratia marcescens*, *Staphylococcus aureus*, Methicillin-resistant *Staphylococcus aureus*, *Fusarium solani* and *Acanthamoeba castellanii*. The microbes were exposed to different contact lens disinfecting solutions as per manufacturer's instructions.

*Results:* The results revealed that ReNu MultiPlus, DuraPlus and OptiFree Express were effective in killing all organisms tested except *A. castellanii*. Ultimate Plus was effective against *F. solani* and MRSA but ineffective against other bacterial and protist pathogens. None of the locally formulated contact lens disinfecting solutions i.e., Kontex Clean, Kontex Normal, Kontex Multisol extra+ and Kontex Soak were effective against any of the organisms tested.

*Conclusion:* These findings are of great concern for contact lens users in Pakistan.

*Keywords:* Keratitis, contact lenses, contact lens disinfecting solutions

### 9.36 ANALYSIS OF HEPATITIS B VIRUS MUTATION PATTERNS IN HBV- MONOINFECTED AND HBV- HEPATITIS DELTA VIRUS (HDV)-COINFECTED SUBJECTS

*Samina Baig, Syed Hani Abidi, Zahid Azam,  
Shahid Majid, Muhammad Rafiq Khanani, Syed  
Ali*

*Dow University of Health Sciences, Karachi and  
Department of Biological & Biomedical  
Sciences, Aga Khan University, Karachi*

*Background and Objective:* Worldwide, more than 15 million people are co-infected with HCV and HDV. HBV-HDV superinfection leads to severe liver disease with rapid progression to cirrhosis and hepatocellular carcinoma. The aim of this study was to analyze mutation patterns in the HBV S-gene among Pakistani patients coinfected with HBV-HDV and those mono-infected with HBV.

*Materials and Methods:* A cross sectional study was conducted on 50 patients co-infected with HBV and HDV, and 50 singly infected with HBV. In this study, hepatitis B virus DNA



extracted from patient sera was PCR-amplified, and after sequencing the S-gene, mutations were analyzed by using MEGA 5.1 software.

**Results:** Sequence analysis of HBV S-gene spanning amino acid residues 74 to 203 revealed the following amino acid mutations in mono- and co-infected: G167A, L168A, S169R, P170F, F171S, L172W, A174S, Q175L, F176L, T177V, S178P, C179F, L190A, A191L, F192L, S193Y, D194G, V195C, S201L, V202Y, Q203S, where the first and the second amino acid at each position represents the residue in, respectively, mono- and co-infected patients.

**Conclusion:** This study provides insight into the differential mutation patterns in HBV in mono- and HDV co-infected scenarios. Further analysis in this direction will help in understanding the evolution of HBV driven by the cross-talk of HBV and HDV in a co-infected host.

**Keywords:** HBV, HDV, Mutations

### 9.38

#### MERGING DISEASES IN THE DEVELOPING WORLD; COMBINATION OF TUBERCULOSIS AND DIABETES

*Sana Sehar*

*School of Nursing & Midwifery, Aga Khan University, Karachi*

**Background and Objective:** TB has been classically associated with poverty, overcrowding and malnutrition in low income countries and diabetes mellitus has reached epidemic proportions worldwide. The link between these two diseases had been suspected for centuries. This association was neglected in the second half of the 20th century but the contribution of diabetes to the burden of TB may be more conspicuous in countries where both diseases are highly prevalent including Pakistan.

**Materials and Methods:** An integrated review of 23 index and non-index articles published during the period of 2000-2013 was conducted.

**Results:** Pakistan ranks bears 63% of TB burden in the Eastern Mediterranean Region and prevalence of diabetes is 9.3% (males) and 11.1% (females). Hyperglycemia favors the

growth, viability and propagation of tubercle bacilli. The neutrophils had reduced chemotaxis and oxidative killing potential, and decreased production of interleukin-1 beta, and tumor necrosis factor by the peripheral blood monocytes. Moreover co-infection leads alteration in CD4/CD8 T cell. Plasma levels of several antidiabetic drugs are significantly lower when co-administered with rifampicin. Moreover it is revealed that the relative risk of death is 1.89 among TB patients with diabetes.

**Conclusion:** Burden of diabetes and tuberculosis in these countries may hinder progress towards attaining the United Nations' (UN) Millennium Development Goals. Therefore more research in this largely neglected

**Keywords:** Tuberculosis, diabetes, epidemiology

### 9.39

#### SEROPREVALENCE OF EPSTEIN BARR VIRUS IN HEALTHY BLOOD DONORS

*Shabnam Ramzan, Ayesha Habib, Lena Jafri, Bushra Moiz*

*Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Background and Objective:** Antibodies to EBV (Epstein Barr virus) have been demonstrated in all population groups worldwide; ~ 95% of adults are eventually EBV-seropositive (World Health Organization). By age four, EBV seroprevalence is close to 100 % in developing countries and ranges from 25 to 50 % in lower socioeconomic groups in the United States. The seroprevalence of EBV is unknown in our population. The objective was to determine the seroprevalence of EBV in healthy blood donors at AKUH.

**Material and Methods:** Blood donors of 'Blood Bank' during July 2013 and who satisfied the criteria for blood donation were included in this cross sectional study. As per 'Clinical Laboratory Standards Institute' standardized questionnaire was used to identify healthy individuals. After informed consent, blood was drawn in gel tubes; serum was aliquoted and frozen -40°C until analysis. Serum samples were

analyzed in batch for EBV nuclear antigen (EBNA) IgG, viral capsid antigen (VCA) IgG and VCA-IgM by chemiluminescent enzyme immunoassay on IMMULITE 2000. Acute infection was characterized by presence of VCA-IgM while past infection was taken as presence of EBNA IgG, VCA IgG antibodies with negative VCA-IgM. Data was analyzed by SPSS version 19.

**Results:** A total of sixty three subjects were recruited, with mean age of 29±8.9 years. Of them 86%, (n=56) were males and 9.8% were smokers. When stratified according to ethnicity 78% of subjects were Urdu speaking, while 13.8%, 1.5%, 1.5% were Pathan, Punjabi and Sindhi respectively. All the blood donors were found negative for HIV, hepatitis B, hepatitis C, syphilis, and malaria. Past exposure to EBV was found in 78% of the subjects while none were found to have acute infection.

**Conclusion:** The results indicate that 78.4% of the blood donors were exposed to EBV infection in the past as evident by their biochemical antibody status

**Keywords:** donors, seroprevalence, frequency

#### 9.40

##### PRIMARY ANTIRETROVIRAL DRUG RESISTANCE PROFILES AMONG HIV-1 THERAPY NAÏVE PATIENTS IN TWO REFERRAL HOSPITALS IN KENYA

*Simon Onsongo Nyangena, Nancy Okinda, Syed Ali, Prof Peter Ojwang, Reena Shah, Samuel Khamadi*

*Departments of Pathology & Microbiology, Biological and Biomedical Sciences and Medicine, Aga Khan University, Karachi*

**Background and Objective:** Acquired immunodeficiency syndrome caused by Human immunodeficiency virus was first described in 1982. Since then the virus has spread globally to infect millions of people. With the introduction of antiretroviral drugs, the survival of most HIV patients has been prolonged markedly. However this is greatly threatened by increasing rates of antiretroviral drug resistance, which may eventually lead to suboptimal treatment outcomes. The

objective was to characterize antiretroviral drug resistance mutations among drug naïve patients in two referral hospitals in Kenya.

**Materials and Methods:** The study was carried out in two hospitals, Aga Khan University Hospital and Thika Level 5 Hospital. A total of 121 participants with >1000 viral copies/ml were consecutively recruited to participate in the study and their samples screened for antiretroviral resistance mutations by genotypic testing. Eighty four participants had their samples successfully genotyped for drug resistance mutations.

**Results:** A total of five NRTI mutations and one mutation against NNRTIs were found among participants in this study. One study participant had one protease mutation, M46L. The estimated primary antiretroviral resistance rate against reverse transcriptase inhibitors was 8.7 % (95% CI 4.0-17.7). The most common viral subtype was A1 at 52%. Other subtypes included D at 17%, subtype C at 13% and viral recombinants (CRF01\_AE, CRF02\_AG) at 12%.

**Conclusion:** Antiretroviral drug resistance mutations are showing an increasing trend among therapy naïve patients since the introduction of antiretroviral therapy in Kenya in the early 2000. This might affect the efficacy of antiretroviral regimens used for treating HIV patient

**Keywords:** HIV-1, resistance, naïve patients

#### 9.41

##### FLUROQUINOLONES: ANTI-HCV DRUGS OF THE FUTURE?

*Sammer Siddiqui, Muhammed Faraz, Sadaf Naeem, Shamshad Zarina, Syed Ali*  
*Department of Biological & Biomedical Sciences, Aga Khan University, Karachi, National Center of Proteomics, University of Karachi and Department of Biochemistry, University of Karachi*

**Background and Objective:** HCV is responsible for about 200 million infections worldwide. The current therapy against HCV has adverse effects, and is too costly for patients in developing countries. Hence, there is a need to develop new therapeutic agents against HCV. Recent studies have identified NS3 as a potential inhibitory target for fluoroquinolone drugs. In the present

study, we assessed the efficacy of two-fluoroquinolone combinations against NS3 in in vitro helicase assay.

**Materials and Methods:** Computational analysis was also performed on fluoroquinolone-NS3 complexes to explore the functional groups of fluoroquinolones and NS3 amino acids involved in their mutual interactions. For the combinatorial assay, the reaction was prepared by mixing the double-stranded substrate with NS3 helicase, buffer, ATP, SYBR Green I and two fluoroquinolones in different concentrations. The FlexX docking software was used to dock the drugs onto the NS3 protein, and the interactions between the drug and helicase were analyzed.

**Results:** In vitro experiments showed that the combinations of Balofloxacin with Enrofloxacin; Balofloxacin with Sparfloxacin and Balofloxacin with Lomefloxacin exhibited greater inhibition of helicase activity than the individual drugs. Docking analysis established that each of these drugs interacted strongly with different amino acids in the active site of NS3. These docking results were independently confirmed by two different software tools.

**Conclusion:** This study shows that the combinations of fluoroquinolone drugs may have enhanced inhibitory action on NS3 than the individual drugs. This study will provide the basis for designing new fluoroquinolones derivatives that have the combined properties of pre-existing drugs.

**Keywords:** Helicase, Fluoroquinolones, HCV NS3

#### 9.42

#### SV40 LARGE T ANTIGEN: A MODEL FOR SCREENING DRUGS AGAINST VIRAL HELICASES

*Sammer Siddiqui, Muhammed Faraz, Sadaf Naeem, Shamshad Zarina, Syed Ali*  
*Department of Biological & Biomedical Sciences, Aga Khan University, Karachi, National Center of Proteomics, University of Karachi and Department of Biochemistry, University of Karachi*

**Background and Objective:** Simian virus 40 Large T antigen (SV40 LT-Ag) plays a role in viral genome replication by auto-regulating the synthesis of viral mRNA. The LT-Ag has served as a model helicase for the screening of antiviral drugs that target viral helicases. In this study, we screened a batch of fluoroquinolones to assess their potential as anti-viral drugs by virtue of their inhibition of the LT-Ag helicase activity.

**Materials and Methods:** 18 fluoroquinolones were tested to test the effect of inhibitors on helicase. Varying concentrations of fluoroquinolones (0.01, 0.1, 1.0 and 10  $\mu$ M) were used. Different combinations of two fluoroquinolones were also used to assess their synergistic, additive or antagonistic effect on helicase activity. Finally, computer-simulated docking analyses were used to explore the mechanism of inhibition of SV40 LT-Ag by fluoroquinolones.

**Results:** Experimental analysis showed the inhibition of LT-Ag helicase activity by all 18 fluoroquinolones. Combinations of Ofloxacin with Balofloxacin; Ofloxacin with Lomefloxacin; Ciprofloxacin with Pefloxacin and Lomefloxacin with Pefloxacin showed inhibition of helicase activity that was greater than the sum of their individual inhibitory effect. Computer-simulated docking models of fluoroquinolone-LT-Ag revealed functional groups of fluoroquinolones and LT-Ag amino acids involved in their mutual interactions. These results were independently confirmed by two different software tools.

**Conclusion:** Our study showed that Balofloxacin, Pefloxacin and Lomefloxacin were highly potent against LT-Ag helicase activity. The docking analysis of these three fluoroquinolones demonstrated that they had the highest binding affinity for LT-Ag helicase.

**Keywords:** Helicase, Fluoroquinolones, SV40 Large T antigen

#### 9.44

### CHARACTERISATION OF EXTENSIVELY DRUG-RESISTANT (XDR) AND TOTALLY DRUG RESISTANT (TDR) M. TUBERCULOSIS STRAINS IN PAKISTAN.

Zahra Hasan, Asho Ali, Sana Jafri, Kausar Jabeen, Raunaq Mehboob, Rumina Hasan  
Department of Pathology & Microbiology, Aga Khan University, Karachi

*Background and Objective:* Pakistan has a tuberculosis (TB) incidence rate of 231/ 100,000 annually. Rising rates of drug resistance increase problems of management of TB and rapid diagnosis of resistance is critical for effective treatment of TB. Prevalence of extensively drug-resistant tuberculosis (XDR-TB) has been demonstrated previously and reported as 4.5% of MDR-TB. Here we have used spoligotyping and 15 loci-MIRU typing to characterize XDR isolates in order to characterize relationships between strains.

*Materials and Methods:* 72 XDR TB strains received at the Aga Khan University Hospital Clinical Laboratory during the period 2006-2011 were tested. Antimicrobial susceptibility was determined by agar proportion method and compared with the wild type *Mycobacterium tuberculosis* H37Rv. Resistance to first line and second line anti-tuberculous agents was determined. Spoligotyping was performed using standard method. Variability in MIRU loci was determined by PCR based 15-loci VNTR typing analysis.

*Results:* Of the XDR-TB strains tested 3 (4%) were found to be totally-drug resistant (TDR) to first and second line agents. The lineage of XDR strains comprised CAS family (54.16%), Beijing (9.72%), T clade (5.55%), U clade (2.77%), EAI (4.16%) and Unique isolates (20.83%). The TDR-TB isolates were one each of CAS1-Delhi, Beijing and T1 isolates. The 15 loci MIRU-VNTR pattern of 72 XDR-TB strains did not show any clusters between strains.

*Conclusion:* This is the first report of TDR-TB strains. Given the increasing MDR and XDR resistance patterns of *M. tuberculosis* isolates in Pakistan this further highlights the imperative need to improve diagnosis and treatment.

*Keywords:* Extensively drug resistant, *Mycobacterium tuberculosis*, DNA sequencing

#### 9.45

### INTERFERON- $\gamma$ RELEASE ASSAY (IGRAS) FOR TB: ARE THEY USEFUL IN AN ENDEMIC SETTING?

Bushra Jamil, Muniba Islam, Kiran Iqbal, Mussarat Ashraf and Zahra Hasan  
Section of internal Medicine, Department of Medicine, Aga Khan University, Karachi

*Background:* Interferon- $\gamma$  release assays (IGRAs) are blood-based tests which measure T cells responses to *Mycobacterium tuberculosis* infection. They cannot distinguish between latent and active disease. Compared to the Tuberculin Skin Test (TST), IGRAs are not confounded by prior bacille Calmette-Guérin (BCG) vaccination and are less likely to be influenced by previous exposure to most nontuberculous mycobacteria (NTM) due to *Mycobacterium tuberculosis* (MTB)-specific target antigens which are selected to stimulate cellular immune responses.

The QuantiFERON-TB Gold In-Tube assay (QFT-GIT) (Cellestis Ltd., Australia) is FDA approved and used for screening of latent TB in low-endemic regions. Pooled evidence suggests that QFT-GIT is 84% sensitive and 99% specific in identifying infection (latent or active) with MTB.

IGRAs have not been formally studied in our population and their primary indication remains screening for latent TB. However, because of high specificity, QFT-GIT may serve as supportive evidence in the work-up of adult patients with culture negative TB, when clinical presentation is compatible with extrapulmonary TB and in those with fever of unknown origin (FUO). In the absence of immunosuppression, and in the relevant clinical context, QFT-GIT may prove to be a valuable test to differentiate tuberculous from non-tuberculous etiology in our population.

*Objective:* To investigate *M. tuberculosis* exposure using the QFT test in healthy endemic

controls (EC), health care workers (HCW) and in patients with suspected tuberculosis (Pt)

**Methods:** EC were volunteers from the Aga Khan University (n=20). HCW were physicians and nurses involved in care of patients (including those with TB) at AKUH (n=24). Pt (n=28) included those with prolonged fever, CNS lesions, unexplained effusions or pulmonary infiltrates with and without malignancy.

**Results:** Of the EC tested 8 were QFT-positive while 12 were QFT-negative. Of the HCW's 8 were QFT-positive and 16 were QFT-negative. Of the Pt group 6 were QFT-positive and 18 were QFT-negative. QFT-positive patients included 2 patients with CNS involvement; 4 had pulmonary infiltrates. The patients who tested QFT negative eventually turned out to have malignancy, rheumatological and other conditions such as, sarcoidosis, inflammatory bowel disease and infections other than TB.

**Conclusions:** A positive QFT response in healthy EC and HCW in endemic setting indicates latent TB. Based on our observations in this preliminary study, QFT responses may be used as supportive evidence of active TB when cultures cannot be obtained and in patients with other co-morbid conditions where coexistence of TB is strongly suspected clinically. Both positive and negative QFT responses are extremely useful in facilitating appropriate management decisions in our patients.

**Keywords:** IGRA, TB, diagnosis

## 9.46

### CEREBRAL INFARCTIONS PREDICTS OUTCOME IN PATIENTS WITH TUBERCULOUS MENINGITIS

*Mohammad Wasay, Salman Farooq, Zubair Khowaja, Shehzad Ali, Zeeshan Bawa, Ather Taqui, Safia Awan, M Asim Beg*  
Section of Neurology, Department of Medicine, Aga Khan University, Karachi, Dow Medical college, Karachi, Cleveland Clinic, Cleveland, USA, Department of Microbiology and Pathology, Aga Khan university, Karachi

**Background:** TB meningitis accounts for upto 10% of all Tb cases and is responsible for more than 40% deaths due to TB. Predictors of mortality in patients with central nervous system TB are not well defined.

**Objective:** This study was aimed to identify predictors of poor outcome (mortality) among patients with TB meningitis.

**Methods:** We reviewed 404 patients with diagnosis of TB meningitis at The Aga Khan university, Karachi. Patients were identified through medical records system at AKU by using ICD-9 codes. We reviewed 467 charts and included 404 patients in study. Incomplete information and non-availability of charts was main reason for non inclusion of 63 subjects. Poor outcome was defined as death at discharge. All patients underwent lumbar puncture and brain imaging (MRI;313 and CT scan; 91).

**Results:** Out of 404 patients 209 were male. Mean age was 43 years. A history of positive TB contact was present in 64(16%). Conventional stroke risk factors were present in 162 (39%)patients. Motor weakness was present in 166 patients (40%). Miliary TB and lymph nodal TB was present in 55 (14%) in addition to CNS TB. 36% (147)patients had no infarction or tuberculoma on imaging, 15%(60) had infarction , 39%(158) patients tuberculomas and 10%(39) patients had both tuberculomas and infarctions on imaging. Overall, 25% (99) patients had infarcts on CT and MRI. Out of 99 patients with inaftrctions 41 had single infarct while 58 had multiple infarcts. Acute infarction was present in 68 while chronic infarcts were present in 31 patients.56 patients had unilateral infarcts while 53 had bilateral infarcts. Overall mortality was 63(16%) at discharge. Mortality was 12% in patients without infarction or tuberculoma, 33% in patients with infractions alone, 10% in patients with tuberculoma alone and 23% in patients with both infarctions and tuberculoma. This difference was statistically significant (P<0.001).

**Conclusion:** Cerebral infarction is a common complication of Tb meningitis present in upto 25% patients. Presence on infarction on CT and MRI predicts significant mortality as compared to patients with no infract or tuberculoma and with tuberculoma alone.

#### 9.47 FREQUENCY OF AFB SMEAR POSITIVITY ON BRONCHOALVEOLAR LAVAGE IN ADULT SPUTUM SMEAR NEGATIVE PATIENTS OF PULMONARY TUBERCULOSIS AT A TERTIARY CARE CENTRE

*Introduction:* Tuberculosis (TB) causes approximately two million deaths per year, 98% of which occur in low-income countries<sup>1</sup> and is expected to continue in the same pattern up to 2020. In 2011, there were 8.7 million new cases of active tuberculosis worldwide (13% of which involved coinfection with the human immunodeficiency virus [HIV]) and 1.4 million deaths, including 430,000 deaths among HIV-infected patients representing a slight decrease from peak numbers in the mid-2000s. Pakistan ranks sixth globally among the 22 high tuberculosis risk countries according to the WHO Global Tuberculosis Report 2012.

Sputum smears staining positive for *Mycobacterium tuberculosis* remains the diagnostic method of choice for diagnosing pulmonary tuberculosis in resource limited settings<sup>3</sup>. In most of the tuberculosis centers, the bacteriological positive yield from sputum is around 16 to 50% and a large proportion of smears remain negative in spite of clinical profile and radiological lesions being consistent with diagnosis of pulmonary tuberculosis<sup>3</sup>.

Sputum smear negative pulmonary tuberculosis remains a significant problem faced by clinicians<sup>3</sup>. Early diagnosis of pulmonary TB prevents progression of disease, morbidity, spread of disease and permanent damage by fibrosis. In such a situation bronchoscopy has been tried for rapid diagnosis of tuberculosis in smear negative cases. Fiberoptic bronchoscopy with bronchial washing analysis for AFB including culture for *Mycobacterium tuberculosis* has significant role to establish the diagnosis when extensive search for AFB in expectorated sputum has repeatedly failed. Various studies around the world have looked at the usefulness of bronchoscopy in the diagnosis of sputum smear negative cases of pulmonary TB. The most recent ones in India and Turkey have found that bronchoscopy and

bronchial wash specimens were able to diagnose pulmonary TB in 35-50 % of smear negative cases<sup>4-6</sup>. In a recent study<sup>4</sup> in India, Altaf Bach and colleagues found that bronchial washing helped diagnose sputum smear negative pulmonary tuberculosis in 48.33% of the patients.

While adequate foreign evidence supports the use of fiberoptic bronchoscopy in suspected cases

of smear negative pulmonary TB 4-5-6-7-8, very few studies have looked at this issue in Pakistan, hence this study looks into the yield of fiberoptic bronchoscopy in sputum smear negative TB patient's.

*Materials and methods:* This is an observational cross sectional study conducting in section of Pulmonology, Department of Medicine for 6 months, Aga Khan University Hospital, Karachi.

*Sample size:* From literature, the diagnostic yield of flexible bronchoscopy and bronchoscopic specimens in smear negative pulmonary TB were 48.33%. Therefore taking the frequency with a bound on error of 0.10 (10%) with a power of 0.8, an alpha significance level of 0.05 with a 95% CIs, a sample of at least 100 will be required.

#### 9.48 MYOCARDITIS COMPLICATING PLASMODIUM VIVAX MALARIA: A CASE REPORT

<sup>1</sup>Noreen Nasir, <sup>2</sup>Saima Lalani, <sup>2</sup>Zahra Aziz Samani, <sup>1</sup>Aysha Almas

<sup>1</sup>Section of internal Medicine, Department of Medicine, <sup>2</sup>Aga Khan University Medical College, Aga Khan University, Karachi

Few case reports of complicated Vivax malaria have been reported. We observed an unusual case of Vivax malaria that was complicated by myocarditis. A 20 year old girl with no known co-morbid presented with complains of fever, vomitings and abdominal pain. She was diagnosed to have Vivax malaria on the basis of peripheral smear and was treated in the medical ward with intravenous fluids and standard antimalarial therapy. She deteriorated with

development of respiratory failure requiring transfer to the intensive care unit. Her hospital course was complicated with development of cardiogenic shock secondary to myocarditis requiring invasive monitoring, inotropes and mechanical ventilation. She later improved after she was managed for myocarditis. Cardiac complications have rarely been reported in patients affected by this type of infection. We report here a case of Plasmodium Vivax malaria with an unusual complication of myocarditis and cardiogenic shock.

*Keywords:* plasmodium vivax malaria, myocarditis, acute respiratory distress syndrome

#### 9.49 RESIDENTS' COMPLIANCE WITH ELEMENTS OF 24-HOUR SEPSIS BUNDLE/SEPSIS MANAGEMENT BUNDLE AT AKUH, OVER A 6 MONTH PERIOD FROM 2012-2013

*Samia Qureshi, Bushra Jamil*  
*Section of internal Medicine, Department of*  
*Medicine, Aga Khan University, Karachi*

*Introduction:* There are two severe sepsis bundles: sepsis resuscitation bundle, and sepsis management bundle. Each bundle articulates objectives to be accomplished within specific timeframes. The bundles have been developed based on the 2008 Surviving Sepsis Campaign Guidelines for the Management of Severe Sepsis and Septic Shock. Sepsis Management Bundle consists of evidence-based objectives that must be completed within 24 h for patients with severe sepsis, septic shock, and/or lactate >4 mmol/L (36 mg/dL). For patients with severe sepsis, 3 bundle elements must be accomplished within the first 24 h of presentation. These include administration of low-dose steroids for septic shock in accordance with a standardized ICU policy, maintenance of glucose control < 150 mg/dL and maintenance of a median inspiratory plateau pressure (IPP) < 30 cm H<sub>2</sub>O for patients on mechanical ventilation.

Our objective is to improve sepsis outcomes in our patients through implementation of

evidence-based guidelines, and upgrade our practices as and when new evidence and guidelines are made available.

*Objective:* To study the frequency of residents' compliance with elements of sepsis management bundle at AKUH

*Methods:* One hundred consecutive adult patients (age  $\geq$  18 years) who fulfilled the criteria of sepsis/severe sepsis/septic shock and were admitted to the AKUH ICU over a 6 month period (August 2012 till February 201) were included. Residents (Postgraduate Year) 2, 3 and 4 assigned in the ICU were enrolled in the study after informed consent. Observations were recorded at a single time point for compliance with execution of 24 hour sepsis bundle elements. Compliance with all 3 bundles was recorded as 100% compliance. Failure to execute 1 or more elements was recorded as 0% compliance

*Results:* Over all resident's compliance with 24-hour sepsis bundle was 46%. Out of 100 patients of severe sepsis blood glucose control < 150mg / dl was maintained in 83 % of patients . Fifty seven percent patients received steroids in accordance with ICU protocol. Inspiratory plateau pressures of <30 cm H<sub>2</sub>O were maintained in 90% of mechanically ventilated patients .

*Conclusions:* Overall compliance with 24-hour sepsis bundle in this study was poor but compliance with some individual elements of the bundle was consistent. An overall compliance of 46% is better than that reported from other Asian countries. It is absolutely essential to identify reasons of non-compliance with evidence-based guidelines at our hospital and to address those factors to improve quality of care and patient outcomes.

*Keywords:* compliance, sepsis management bundle

### 9.50 RECURRENT SALMONELLOSIS IN A CHILD WITH DEFECT IN IL-12 RB1 / IFN $\gamma$ PATHWAY

Mohammad Faizan Zahid<sup>1</sup>, Syed Asad Ali<sup>2</sup>,  
Abdul Gaffar Billoo<sup>2</sup>, Stephanie Boisson-  
Dupuis<sup>3</sup>, Fatima Mir<sup>2</sup>

<sup>1</sup> Medical College, <sup>2</sup> Department of Paediatrics  
& Child Health, Aga Khan University, Karachi  
<sup>3</sup> Laboratory of Human Genetics of Infectious  
Diseases, Necker Medical School, Paris

A 3 year old boy presented with complaints of fever, abdominal pain, lymphonodular swelling in cervical region and scalp dermatophytosis. He had previously been treated empirically with anti-tuberculous therapy (ATT) twice, at the age of 9 months and 27 months for peripheral lymphadenopathy. An older sibling died at age 2 years with suspected tuberculous meningitis.

Mantoux test was normal. Bone marrow and lymph node biopsy ruled out lymphoma and absolute neutrophil and lymphocyte counts were within normal ranges. Blood culture and lymph node culture was positive for *Salmonella Typhi*. After being treated with IV ceftriaxone and topical antifungals, the child was discharged upon resolution of his presenting complaints.

Over the course of next 2 years, the child was admitted every 2-3 months with complaints of fever, abdominal distention and dysentery. Each febrile episode was associated with culture positive *S. typhi* bacteremia. HIV workup was negative. A prolonged course of probenicid and high dose amoxicillin to eradicate chronic carriage succeeded in increasing interval between episodes to 3-4 months only. Cholecystectomy was debated and deferred due to suspicion of an immune defect. Blood samples from patient and parents were sent to France for workup. An IL-12 R $\beta$ 1 deficiency due to a homozygous nucleotide substitution was found. Parental counseling and subsequent patient management remained difficult in view of financial constraints, outstation residence of family and reluctance of local physicians to handle repeated episodes.

At the age of 7 years, the child presented with small bowel obstruction. He was managed

conservatively with antibiotics, IV fluids and blood transfusions. He eventually succumbed to endotoxic shock.

This case highlights the importance of considering a diagnosis of IL-12 R $\beta$ 1 deficiency in children with repeated salmonellosis, a diagnosis which precludes intensive and aggressive monitoring and management of the patient in scenarios where bone marrow transplants are not feasible.

### 9.51 CASE REPORT OF A PATIENT WITH ACTINOMYCOSIS AS LUNG MASS; AN UNUSUAL PRESENTATION

Talha Shahzad  
Section of Pulmonology and Critical Care,  
Department of Medicine, Aga Khan University,  
Karachi

**Background:** Actinomycosis is a slowly progressive infection caused by anaerobic or microaerophilic bacteria from the genus *Actinomyces*. The organisms are a normal inhabitant of oropharynx and frequently found in dental caries and in persons with poor oral hygiene. Actinomycotic infection in the lung is usually polymicrobial. The usual pattern of pulmonary actinomycosis consists of air-space consolidation with cavity formation, other findings include hilar or mediastinal lymphadenopathy, bronchiectasis, pleural effusion, abscess formation and draining sinus formation. Actinomycosis presenting as lung mass is an unusual presentation which is often mistaken as lung carcinoma. Described below is a case with pulmonary actinomycosis presenting as lung mass

**Case summary:** 47 years male from Karachi with no prior co-morbidities, came to Aga Khan University Hospital with 1 year history of productive cough with occasional hemoptysis for 2 months. His CT scan chest showed speculated mass in Right middle lobe 3.2×3.1×2.9 cm with multiple enlarged lymph nodes in pretracheal, anterior carinal, subcarinal and right hilar region. He was empirically treated with ATT for two and half months with



no improvement. His bronchoscopy was also done which showed edematous and irregular mucosa in right middle lobe, BAL fluid cultures showed no growth, endobronchial biopsy was also negative for malignancy or granulomas. Later on patient underwent right middle lobectomy. Histopathology showed follicular bronchiolitis, acute on chronic inflammation, benign reactive lymph nodes with no evidence of malignancy or granulomas. Tissue cultures showed numerous gram positive anaerobes consistent with Actinomycosis. Patient was started on amoxicillin; he got better with the treatment and was discharged.

*Conclusion:* Pulmonary actinomycosis is a rare disease, most infections occur in immunocompetent hosts with poor oral hygiene and alcoholism. Untreated actinomycosis is usually fatal, but early treatment can result in cure rates of >90%. It is often mistaken as lung malignancy for which lung tissue biopsy is necessary to establish the diagnosis.

*Keywords:* Actinomycosis, Follicular bronchiolitis, Bronchoscopy, Immunocompetent hosts

## 9.52

### FREQUENCY OF MULTIDRUG RESISTANT PATHOGENS IN PATIENTS WITH HEALTHCARE ASSOCIATED PNEUMONIA

*Talha Shahzad,*  
*Section of Pulmonology and Critical care,*  
*Department of Medicine, Aga Khan University,*  
*Karachi*

*Background:* Pneumonia has traditionally been classified as either community or hospital acquired hospital-acquired pneumonia (HAP) is typically caused by drug-resistant pathogens. In 2005, Infectious Diseases Society of America/American Thoracic Society (IDSA/ATS) guidelines created a third classification of pneumonia, health care associated pneumonia (HCAP). A large retrospective study published at the same time as the guidelines suggested that HCAP patients had a similar microbiology and outcome to those

with HAP. Consequently it was recommended that patients with HCAP should receive broad-spectrum antimicrobial therapy directed against drug-resistant, health care-acquired pathogens. In Pakistan, there is not enough data regarding the etiological organisms involved in healthcare associated pneumonia and no consensus guidelines to treat patients with such entity

*Objectives:* To determine the frequency of multi-drug resistant pathogens in patients admitted with Healthcare associated pneumonia at a tertiary care hospital

*Methods:* This will be a cross-sectional study of adult patients admitted with HCAP at Aga Khan Hospital, which will be completed in 6 months from 10<sup>th</sup> March 2013. Healthcare associated pneumonia(HCAP) is typically caused by drug-resistant pathogens such as *Pseudomonas aeruginosa*, methicillin-resistant *Staphylococcus aureus* (MRSA) and Gram-negative Enterobacteriaceae. From the literature, frequency of these organisms ranges from 2.6% to 46.7%. Therefore taking the minimum frequency (2.6%) to get the maximum sample size, with a bound on error of 3.5%, an alpha significance level of 0.05 with a 95% CIs, a sample of at least 155 will be required.

*Data Collection:* All patients admitted with Healthcare associated pneumonia at AKUH meeting above mentioned inclusion and exclusion criteria will be analyzed. Ethical approval will be sought from the hospital ethics committee.

Informed consent will be taken from the patient or the attendant next of kin. Patient's sputum, lower tracheal aspirates or BAL fluid cultures will be sent within 24-48 hours of hospital admission and final results will be collected at 72 hours of sending cultures.

*Data Analysis:* All analyses will be conducted by using the Statistical package for social science SPSS (Release 18.0, standard version, copyright © SPSS; 1989-02). A descriptive analysis will be done for demographic features are presented as mean  $\pm$  standard deviation for quantitative variable i.e.; age and number (Percentage) for qualitative variables i.e. gender. Number and percentages will be calculated for outcome variable which is multidrug resistant pathogens. Etiology of causative organism will

be stratified by age and gender to control the affect modifier and chi-square test will be applied to see the effect of these on outcome variable. P-value <0.05 will be taken as significant

**Keywords:** Pneumonia, healthcare, multi-drug resistant pathogens

### 9.53

#### LEFT HEMI-DIAPHRAGMATIC HYDATID CYST: RARITY IN ITSELF, POSING A DIAGNOSTIC CONFUSION

*Haris Hakeem<sup>1</sup>, Ghulam Fareed<sup>1</sup>, Muhammad Irfan<sup>1</sup>, Saulat Fatami<sup>2</sup>*

<sup>1</sup> *Section of Pulmonary and Critical Care Medicine, Department of Medicine, Aga Khan University Karachi*

<sup>2</sup> *Cardio-Thoracic Surgery, Aga Khan University Karachi*

**Introduction:** Echinococcosis is among the oldest diseases known to man. It most commonly involves the liver and lung. Isolated diaphragmatic involvement without hepatic involvement is extremely rare, with less than 100 cases reported in international literature, and that too mostly involving the right hemidiaphragm. Herein, the authors report a case of bilateral hydatid cysts involving the right lung and left hemidiaphragm in a young female patient with the preoperative diagnostic error in localization that may occur with usual imaging modalities and suggestion to avoid it.

**Case:** 16 years old girl, resident of district Rajanpur, Pakistan presented with 15 day history of pain left hypochondrium, cough and dyspnea. She was referred from a district hospital with an ultrasound report that showed suspected HCs in right lower lung and spleen. Serologies for Echinococcus was negative. CT scan was done which showed well-defined 9.9×9×10 hypodense cyst involving the middle and lower lobes of right lung with thick enhancing walls and splaying of surrounding vessels. There was associated mild pleural effusion with adjacent atelectasis. A similar thick walled 11.2×9.9×10.5cm hypodense cyst with

enhancing walls was seen within spleen. There was evidence of floating membranes seen within the cyst. The cyst was causing displacement of surrounding vessels and adjacent viscera. No evidence of focal lesion was seen in liver parenchyma. The patient was referred to cardiothoracic surgeon for cyst extraction. Bilateral minithoracotomies were performed. Cyst was removed from the right lower lobe of lung. On the left side, cyst was surprisingly found to be lying within the diaphragm instead of spleen. Cruciate incision was made and cyst was removed. The cavity was washed with hypertonic saline. Histopathology report confirmed tissue diagnosis of HCs in both specimens. Postoperative recovery was uneventful. Patient was subsequently discharged on Albendazole and was found to be disease free on follow up visit.

**Conclusion:** HCs of diaphragm should be considered in patients with preoperative imaging data indicating cystic lesions adjacent to the diaphragm. The surgery, with radical excision of the cyst is the best option for treatment.

**Keywords:** Hydatid cyst, diaphragm, echinococcosis

### 9.54

#### UTILITY AND COST OF BRONCHOALVEOLAR LAVAGE IN DIAGNOSING PULMONARY FUNGAL INFECTIONS

*Fasih Ur Rahman, Muhammad Irfan, Ahmed Suleman Haque*

*Section of Pulmonary and Critical Care Medicine, Department of Medicine, Aga Khan University Karachi*

**Introduction:** Broncho Alveolar lavage (BAL) for microbiological examination is a useful investigation tool for detecting microorganism causing respiratory tract infections. BAL is usually sent in most of the cases for Gram Stain and culture (C/S), AFB smear and C/S Fungal smear and C/S depending upon suspicion of underlying Lung disease. Considering low prevalence of fungal pneumonia in community, routine practice of sending BAL for fungal smear and C/S

increases the cost considerably. The cost of fungal C/S is around Rs 1600 (17 US\$) in Pakistan.

**Objective:** To evaluate the yield and cost of routine fungal smear and culture/sensitivity on BAL.

**Methods:** Clinical records of all cases of bronchoscopy with BAL were reviewed for fungal smear and culture during period of 2011-2012. Data was analyzed for yield of positive fungal smear and C/S and the cost involved.

**Results:** 273 cases underwent bronchoscopy during the study period. Of these 205 samples were sent for fungal C/S. The 3 most common indications of bronchoscopy were hemoptysis, non-resolving pneumonia or suspicion of malignancy. Out of 205 samples 31 patients were positive on smear and/or culture (15.1%). 16 cases (7.8%) were both smear and C/S positive. Only 5 (2.4%) were clinically significant and required treatment. *Aspergillus fumigatus* was most common fungus on culture (2 out of 5), followed by *Aspergillus niger*, *A. terreus* and *A. flavus*. Most of the C/S was positive in patients who had received chemotherapy.

Only 5 (2.4%) cases was clinically significant (at a cost of Rs 8000 as against a total cost of Rs. 3, 20,000)

**Conclusion:** We report that huge amount of money is unnecessarily spent on requesting routine fungal smear and C/S on BW. These tests should only be sent in high risk patients so that burden on the patient/health care systems can be minimized.

**Keywords:** Bronchoalveolar lavage, Bronchoscopy, fungal Infections

## 9.55

### EVERY PULMONARY FUNGUS BALL IS NOT ASPERGILLOMA

Fasih Ur Rahman<sup>1</sup>, Muhammad Irfan<sup>1</sup>, Naima Fasih<sup>2</sup>, Kauser jabeen<sup>2</sup>, Hasanat Sharif<sup>3</sup>  
<sup>1</sup>Section of Pulmonary and Critical Care Medicine, Department of Medicine, <sup>2</sup>Department of Pathology & Microbiology <sup>3</sup>Cardio-Thoracic Surgery, Aga Khan University, Karachi

**Introduction:** *Scedosporium apiospermum* is an ubiquitously present saprophytic fungi, isolated from natural substances, including soil, stream water, poultry, and cattle, with unknown mode

of transmission. As an emerging pathogen, it causes a wide range of diseases, from subcutaneous mycetoma in immunocompetent host to disseminated sepsis in organ transplanted patients. In patients with cavitating lung diseases such as tuberculosis, it may develop localized invasive lung infection which is clinically similar to that caused by *Aspergillus*. However, the treatment of *S. apiospermum* requires voriconazole or surgery as it is resistant to commonly used antimycotic agents.

We presented a case of localized lung *Scedosporiosis* in an immunocompetent host with clinical, radiological, and histological findings suggestive of *Aspergilloma*. In fungal culture, the typical morphology of *S. apiospermum* was observed and patient was successfully treated with combined surgical resection and Voriconazole.

**Case:** A 40-year- gentleman with a history of pulmonary tuberculosis 15-years- back presented in pulmonology clinic with complaint of recurrent episodes of cough and hemoptysis for the last 4 years. His family history was significant for tuberculosis. His physical examination revealed bronchial breathing in right upper and middle part of chest.

His chest X-ray showed right sided multiple thick walled cavities of different sizes. Multiple well defined soft tissue density masses most likely represent fungal ball (mycetomas) were present in at least 2 of these cavities.

His CT chest showed two thick walled cavities in right lung. Smaller one was in right upper lobe, (4.2x2.4cm) with a fungal ball in it. Larger cavity (10x4.5cm) was in right lower lobe having a large fungal ball (47x29mm), extending across major fissure to involve upper lobe as well.

Based on his history, physical examination along with radiology, diagnosis of multiple post TB cavities with fungal ball (*Aspergilloma*) was made.

He underwent wedge resection of right upper lobe lesion. His lung tissue culture grew *S. apiospermum*. Histopathology revealed acute and chronic inflammation around the bronchioles, and hemorrhagic infarction. Fungal stains (PAS+/-D) were negative.

He was started on Voriconazole and treatment was continued for 4 months. He responded well to antifungal treatment and remains asymptomatic after 6 months. His CXR on follow-up also showed improvement.

*Conclusion:* Every fungal ball in preformed cavities in lungs is not *Aspergilloma*. Histopathology and fungal cultures are necessary for definite diagnosis and treatment as *S. apiospermum* is resistant to commonly used antimycotic agents.

*Keywords:* Fungus ball, Aspergilloma, *Scedosporium apiospermum*

### 9.56

#### EVALUATION OF “LOW (<8) S/CO” RESULTS OF HEPATITIS C VIRUS SPECIFIC ANTIBODY ON AN AUTOMATED INSTRUMENT

*Fahmida Jan Muhammad, Bushra Moiz, Salman Adil*

*Department of Pathology & Microbiology, Aga Khan University, Karachi*

*Background:* Interpretation of low “ (<8) s/co” screening results of viral serology is a sensitive issue in transfusion services for both donors and patient safety. Donor serological tests with chemiluminescence method have proven to be highly reliable and cost effective which led to their almost universal utilization as a first-level screening procedure. However false positive results may occur.

*Objective:* To evaluate the frequency of low (<8) s/co results of Hepatitis C Virus specific antibody on an automated analyzer in blood bank and compare the results on another analyzer for serology. The secondary objective was to test such low (<8) s/co sera for viral genome.

*Methods:* This study was conducted at Aga Khan University Hospital, Karachi during 01/07/2012 and 30/9/2012. Low (<8) s/co results of anti HCV antibodies on Vitros ECi (Ortho-clinical diagnostic) were retested on cobas e 601 (Roche) and NAT (Himalton/ampliprep/taqman Roche). In this study total number of donations,

low (<8) s/co results, and comparison of low (<8) s/co results were recorded.

*Results:* During the study period 6537 blood donations were made. There were 6383(67%) males and 154(2.35%) females. The results on the primary instrument (Vitros) were as follows: 185(2.8%) were reactive, 6296(96.3%) were non reactive while 45 (0.68%) were low (<8) s/co for anti-HCV antibodies. These low (<8) s/co samples were retested on a secondary instrument (Cobas e 601). Results were; 34(75.5%) were non reactive while 11(24.4%) were reactive. Thirty four non-reactive samples on Cobas were non reactive on NAT.

*Conclusion:* Our primary instrument showed 75% false positivity in low (<8) s/co tests while 24% true positivity. It is important that all low (<8) s/co results should be retested through supplemental NAT testing to determine the true viral status of donor

### 9.57

#### PRESENTATION OF MIXED MALARIAL INFECTION IN CSF: A CASE REPORT

*Izza Hussain, Mohammad Asim Beg, Mariam Razi*

*Department of Pathology & Microbiology, Aga Khan University, Karachi*

*Background:* Malaria contributes to significant morbidity and mortality in the developing countries of the tropics. World Health Organization (WHO) has estimated about 250 million cases of malaria occur every year worldwide, causing 8,60,000 deaths. Plasmodium falciparum accounts for majority of complications and deaths due to malaria. Complicated malaria may closely mimic other commonly prevalent infections like enteric fever, leptospirosis, dengue haemorrhagic fever, acute viral hepatitis, viral meningoencephalitis, typhoid and severe sepsis of unknown origin. A significant minority of patients of malaria in endemic areas may present with atypical clinical manifestations, mimicking other illnesses.

*Objective:* To identify malarial infection in patients who have atypical clinical

manifestations leading to diagnostic confusion as well as delay in treatment.

*Method:* A 50 years old female, had history fever for last four days and generalized weakness. Fever was not associated with rigors and chills. Complete blood counts showed anaemia and thrombocytopenia. Peripheral blood film did not show malarial parasites (outside AKUH). She was misdiagnosed, remained febrile and on fourth day became unconscious. CT scan and lumbar puncture was done. CSF for D/R was sent to AKUH clinical laboratory.

*Result:* CSF Glucose: 90 mg/dl, CSF chloride: 132 mEq/L, CSF protein: 199 mg/dl, TLC: 45/cu mm, poly: 70%, lymph: 30%, RBC: 75/cu mm and presence of trophozoites and gametocytes of plasmodium falciparum (1-10/100 field). Rapid diagnostic test, immunochromatographic (ICT) was positive for mixed infection P. vivax and P. falciparum.

*Conclusion:* Careful examination of thick and thin films in malaria diagnosis and use of rapid diagnostic test may assist in making a definitive diagnosis. Early diagnosis and prompt treatment can save lives in cases of P falciparum infections

*Keyword:* P. vivax, P. falciparum, Immunochromatographic test

## 9.61

### SURVEILLANCE FOR NEISSERIA GONORRHOEAE STRAINS WITH REDUCED SUSCEPTIBILITY TO EXTENDED SPECTRUM CEPHALOSPORINS USING CDS DISC DIFFUSION CRITERIA AT AGA KHAN UNIVERSITY LABORATORY, KARACHI, PAKISTAN

*Pushpa Bhawan Mal, Kausar Jabeen, Magnus Unemo, Erum Khan*

*Department of Pathology & Microbiology, Aga Khan University, Karachi and Orebro University Hospital, Sweden*

*Background:* Extended spectrum cephalosporins (ESCs) globally have become the only available treatment option for Neisseria gonorrhoeae

infections. Recently reports of emergence of strains with reduced susceptibility to ESCs are alarming. Another problem is inability of the standard disc diffusion method to detect these strains. Therefore WHO recommends use of calibrated dichromatic sensitivity (CDS) method for detection of these strains. This method uses a 0.5ug ceftriaxone disc instead of 30ug disc recommended by Clinical and Laboratory Standards Institute (CLSI) and British Society for Antimicrobial Chemotherapy (BSAC).

In this study we used CDS method to detect N. gonorrhoeae strains with reduced susceptibility to ESCs. Additionally susceptibility to azithromycin and spectinomycin as alternative drugs for treatment in resistant isolates was also determined.

*Methods:* A total of 100 N. gonorrhoeae strains isolated during 2012 to 2013 were tested. CDS technique was determined using 0.5ug ceftriaxone disc. Disc diffusion using CLSI method and minimum inhibitory concentration (MIC) using E-strips were also determined against ceftriaxone, spectinomycin and azithromycin. WHO reference strain K and ATCC 49226 were used as controls.

*Results:* A very high resistance rate (97%) was observed against ciprofloxacin. No resistance was observed against ceftriaxone using both CDS and CLSI disc diffusion method. MIC 50 and MIC 90 of ceftriaxone were 0.004 ug/mL and 0.016ug/mL respectively. 1.5% of the strains were resistant to azithromycin and no resistance was observed against spectinomycin.

*Conclusions:* This study showed that ceftriaxone, spectinomycin and azithromycin remained effective against gonorrhoeae in Pakistan. Our data therefore suggests that reduced susceptibility to ESCs in N. gonorrhoeae isolates recovered from our population is rare as we could not assess discrepancy between CDS and CLSI methods. However a continuing active surveillance for monitoring of resistance is highly recommended to detect emergence of such strains in future

*Keywords:* Antimicrobial surveillance, Neisseria gonorrhoeae, CDS, ESCs

### 9.62 CHLOROQUINE RESISTANT PLASMODIUM VIVAX: AN EMERGING THREAT FROM PAKISTAN

*Najia K Ghanchi, Afsheen Raza, Syed Faisal Mahmood, Muhammad Junaid Patel, M.Asim Beg*  
Department of Pathology & Microbiology, Aga Khan University, Karachi

**Background:** Emerging resistance to chloroquine (CQ) in Plasmodium vivax poses huge burden on health of millions of people exposed to the risk of vivax malaria. CQ is the recommended anti-malarial drug for treatment of P.vivax infection. However, reports of CQ resistance are consistently being documented worldwide.

**Objectives:** Case of chloroquine resistant P.vivax

**Methods:** In this study, two in vivo CQ resistant cases of P.vivax presented at Aga Khan University Hospital, Karachi were analyzed for molecular markers of drug resistance. Blood samples from patients were microscopically confirmed for P.vivax mono-infection. DNA was extracted from patient blood samples and amplified using PCR/RFLP for genotyping and drug resistance associated markers pvmsp-1, pvcsp, pvdhfr, pvdhps and pvcrt-0.

**Results:** Genotyping analysis revealed that the samples carried pvmsp-1 Type 1 and pvcsp VK 210 repeat types. Furthermore, analysis of sulphadoxine-pyrimethamine (SP) resistance associated mutations detected presence of 117N, 50I and 119K mutations ;both 117N and 50I mutation have been associated with emerging resistance against SP implying that both patients were infected with SP resistant strain of P.vivax. Interestingly, no mutation was observed in the pvcrt-0 gene.

**Conclusions:** This is the first report of P.vivax Chloroquine resistance malaria in Pakistan. Molecular markers along with in vitro susceptibility testing of P. vivax may provide a useful tool to highlight areas of emerging chloroquine resistance. In conclusion, it is suggested that clinically treatment failure cases need to be analyzed with these tools so the extent and impact of drug pressure can be monitored effectively

**Keywords:** Plasmodium vivax, Chloroquine resistance,

### 9.63 PREVALENCE OF DRUG RESISTANCE ASSOCIATED MUTATIONS IN CLINICAL ISOLATES OF PLASMODIUM VIVAX FROM SOUTHERN PAKISTAN

*Afsheen Raza, Najia.K.Ghanchi, M.Asim Beg*  
Department of Pathology & Microbiology, Aga Khan University, Karachi

**Background:** Antifolate antimalarial drugs sulphadoxine-pyrimethamine (SP) are the mainstay of malaria control in Pakistan. Though, not recommended, it is still being used largely in public sector against P.vivax therapeutics. Extensive use of SP indicates possibility of accumulation of drug resistance associated mutations in SP binding sites of P.vivax, encoded by dihydrofolate reductase (dhfr) and dihydropteroate synthetase (dhps) genes.

**Objectives:** The aim of this study is to identify baseline frequencies of single nucleotide polymorphisms (SNPs) and prevalence of SP resistance associated mutations in clinical isolates of P.vivax (n=131) from Karachi, Sindh and Balochistan province.

**Methods:** Nested PCR followed by direct sequencing and comparison with wild type reference sequences was performed on all isolates

**Results:** In dhfr, mutations were observed at codons F57L, S58R and S117N/T while novel non-synonymous mutations were observed at codon positions N50I, G114R and E119K .Two mutations, N50I and 117T were observed for the first time in Pakistan. The 50I mutation signifies intra species recombination of P.falciparum and P.vivax while 117T, isolated globally from treatment failure cases, shows the extent of SP pressure on P.vivax. In dhps, mutations were observed at codon position A383G and A553G while non-synonymous mutations were observed at codon positions S373T, E380K, P384L, N389T, V392D, T393P, D459A, M601I, A651D and A661V.

**Conclusions:** Results from this study provide evidence that increasing number of SP resistance associated mutant alleles, comparable to those reported worldwide, are circulating in southern Pakistan. These alleles may play a significant

role in transmission of resistant strains via human parasite reservoirs exacerbating extensive drug pressure on *P.vivax* and possibly making SP defunct for future use

**Keywords:** Pakistan, drug resistance, Plasmodium vivax

#### 9.64

##### ROLE OF CYTOKINE-MEDIATED ENDOTHELIAL ACTIVATION PATHWAY IN PATHOGENESIS OF COMPLICATED PLASMODIUM VIVAX CLINICAL ISOLATES FROM PAKISTAN

*Afsheen Raza, Najia.K.Ghanchi, M.Asim Beg  
Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Background:** Plasmodium vivax is the prevalent malaria species contributing 70% of malaria burden in Pakistan. Though considered benign, complicated cases of *P.vivax* are consistently being documented from this region. It has been hypothesized that *P.vivax* utilizes cytokine-mediated endothelial activation pathway as a mechanism to manifest severe disease symptoms.

**Objectives:** The aim of this study was to test the hypothesis that cytokine-mediated endothelial activation is a possible mechanism of pathogenesis in *P.vivax*

**Methods:** Case control study using well-characterized groups of uncomplicated (n=100), complicated cases (n=82) and healthy controls (n=100). Concentrations of cytokines, TNF- $\alpha$ , IL-6, IL-10 and endothelial activation markers ICAM-1 (Intracellular adhesion molecule-1), VCAM-1 (Vascular adhesion molecule-1) and E-selectin were determined by Enzyme-Linked immunosorbant assay (ELISA). Correlation of cytokines and endothelial activation markers was done using Pearson two way correlation matrix. Furthermore, the significance of these biomarkers as indicators of disease severity was also analyzed.

**Results:** The results showed that TNF- $\alpha$ , IL-10, ICAM-1 and VCAM-1 were 3-fold, 3.7 fold and 2 fold increased between uncomplicated and complicated cases while IL-6 and E-selectin was 1.8 and 1.2 fold decreased between the two groups. Comparison of healthy controls with uncomplicated cases showed showed no

significant difference in TNF- $\alpha$  concentrations while IL-6, IL-10, ICAM-1, VCAM-1 and E-selectin were found to be 3.5-fold, 20-fold, 3-fold, 4-fold and 10-fold elevated respectively. Furthermore, significant positive correlation was observed between TNF- $\alpha$  and IL-10, TNF- $\alpha$  and ICAM-1, ICAM-1 and VCAM-1. A Receiver operating curve (ROC) was generated which showed that TNF- $\alpha$ , IL-10, ICAM-1 and VCAM-1 were the best individual predictors of complicated *P.vivax* malaria.

**Conclusions:** The results from this study allow us to conclude that cytokine-mediated endothelial activation pathway is the possible mechanism of pathogenesis in *P.vivax* and cytokine and endothelial activation markers can serve useful biomarkers of complicated *P.vivax* infection

**Keywords:** cytokine, mediated endothelial activation, Plasmodium vivax, disease severity

#### 9.66

##### GENETIC DIVERSITY OF PLASMODIUM VIVAX AND PLASMODIUM FALCIPARUM CLINICAL ISOLATES FROM SOUTHERN PAKISTAN

*Najia.K.Ghanchi, Afsheen Raza, Ali.M.Thaver,  
Sana Jafri, Mohammad .A. Beg  
Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Background:** Plasmodium vivax and *P.falciparum* co-exist in Pakistan with *P.vivax* being the prevalent species accounting for 70% of malaria burden; however, there is no baseline data available on circulating genotypes. Prevalent genotypes of *P.falciparum* and *P.vivax* with an aim to bridge the existing knowledge gap on population structure of malaria from Pakistan.

**Methods:** During January 2006- May 2009, a total of 250 and 244 blood samples were collected from patients tested slide positive for *P.vivax* and *P.falciparum* mono-infections respectively. Nested PCR/RFLP was performed, using pvcsp, pvmsp1 and pfmsp1 & 2 markers to detect the extent of genetic diversity in clinical isolates of *P.vivax* and *P.falciparum* from Southern Pakistan.

**Results:** A total of 227/250 (91%) isolates were included in the analysis of *P.vivax* and 238/244 (98%) of *P.falciparum*. In pvmsp1, a total of 87

genotypes were detected while in pvmsp, both VK 210 (85.5%, 194/227) and VK 247 type (14.5%, 33/227) were found to be circulating in P.vivax isolates from Southern Pakistan. Whereas, only 56/231 (24%) and 51/236 (22%) carried multiple P. falciparum genotypes in msp-1 and msp-2, respectively. We have observed limited diversity in pfmsp 1 and pfmsp 2 genes of P.falciparum isolates compared to high diversity in pvmsp1 genes of P.vivax

*Conclusions:* This study confirms that extensively diverse pvmsp and pvmsp1 variants of P.vivax are circulating within this region. Results from this study provide valuable data on genetic diversity of P.vivax which will be helpful for further studies and development of CSP and MSP-1 based vaccines against P.vivax

*Keywords:* Plasmodium vivax, plasmodium falciparum, merozoite surface proteins

## 9.67

### KNOWLEDGE AND PRACTICES OF LABORATORY WORKERS TOWARDS STANDARDIZED ANTIMICROBIAL SUSCEPTIBILITY TESTING (AST) AND BIOSAFETY MEASURE TO PREVENT SPREAD OF SUPERBUGS IN PAKISTAN

*Najia K Ghanchi, Joveria Q farooqi, Naima Fasih, Maqboola Dojki, Molly Hughes, Erum Khan*  
*Department of Pathology & Microbiology, Aga Khan University, Karachi*

*Background:* Emergence of highly resistant bacterial strains is a global concern and spread of highly resistant organisms from health-care environment to the community poses a great threat. Therefore it is important to assess practices of microbiological laboratories working with pathogens.

*Objectives:* To assess awareness of standardized antimicrobial susceptibility testing and laboratory biosafety measures among laboratory workers.

*Methods:* A cross-sectional survey was conducted in February 2013 at Aga Khan University, Karachi. A structured questionnaire was administered to assess the level of awareness, skills and training about the biosafety measures in laboratory practices and knowledge of multidrug resistant

organism, their identification, susceptibility testing and infection control measures to curtail its spread.

*Results:* Eighty five (89.5%) respondents agreed that antimicrobial resistance (AMR) is a major problem however only 66% considered AMR a major issue in their hospital. Forty eight (50%) of the laboratory workers agreed that Laboratory methods to detect AMR are not standardized in Pakistan whereas while 6% of the laboratory workers were not aware of standardization of AST in Pakistan. Awareness regarding role of waste disposal, disinfection, hand washing in limiting spread of AMR among laboratory workers was observed as 75%, 42% and 81% respectively. Only 60% of the laboratories autoclave their waste before disposal.

*Conclusions:* Majority of the Laboratory workers are aware of biological safety procedures however major issue is availability of resources and implementation of the guidelines. Our results provide baseline data for planning programs to train supervise and improve the operational quality of the microbiological laboratories nationwide to prevent spread of Superbugs

*Keywords:* Superbugs, Antimicrobial susceptibility testing, standardization, biosafety

## 9.68

### WHOLE GENOME SEQUENCING IDENTIFIES LINEAGE ASSOCIATED SINGLE NUCLEOTIDE POLYMORPHISMS BEYOND THE 'HOT-SPOT' REGIONS OF DRUG RESISTANCE GENES IN XDR-MTB ISOLATES FROM PAKISTAN

*Asho Ali, Zahra Hasan, Ruth McNerney, Kim Mallard, Francesc Coll, Grant Hill-Cawthorne, Mridul Nair, Arnab Pain, Taane G Clark, Rumina Hasan*

*Department of Pathology & Microbiology, Aga Khan University, Karachi, London School of Hygiene & Tropical Medicine, United Kingdom and King Abdullah University of Science and Technology (KAUST), Thuwal, Kingdom of Saudi Arabia*

*Background:* Identification of single nucleotide polymorphisms (SNPs) provides insights into genomic variations in drug resistant



Mycobacterium tuberculosis (MTB) strains. Since MTB is largely clonal the type and frequency of drug resistance mutations may vary with MTB strain type in a particular geographical location. Therefore, knowledge of genomic variation involved in drug resistance is critical in implementation of rapid drug resistance detection methods for MTB in a region.

**Objectives:** This study aimed to identify SNPs in drug resistance associated genes present in the extensively drug-resistant (XDR) as compared with drug susceptible MTB isolates from across the country.

**Methods:** We performed whole genome sequencing (WGS) analysis on extensively drug-resistant (XDR) (n=37) and susceptible (n=5) MTB isolates from Pakistan. Over 150 SNPs (>60% previously unreported) were identified including 79 in first line and 22 in second line drug resistance genes. Phylogenetic analysis of XDR-TB strains based on SNPs demonstrated a clustering pattern related to that identified by spoligotype based lineage analysis. Genes conferring resistance to first line drugs; rifampicin (rpoB), isoniazid (katG, fpbC, Rv1592C, ndh, Rv2242, fabD, kasA, accD, oxyR, fadE24, and nat), streptomycin (rrs 500 region), and gidB), pyrazinamide (pncA), ethambutol (embA, embB, embC, embR, Rv3124, rmlD, iniA, iniB, iniC, and manB) and second line drugs; ofloxacin (gyrA and gyrB), aminoglycosides (rrs and tlyA) and ethionamide (ethA and fabG1) were studied. Most of the SNPs were found only in drug resistance strains and need to be further assessed for their possible role.

**Conclusions:** Inclusion of additional drug resistance associated SNPs based on data from prevalent strains may be required to develop effective rapid diagnostic assays for detection of drug resistance in MTB

**Keywords:** Mycobacterium tuberculosis, Drug resistance detection, Drug resistance genes

## 9.69

### ANTIMICROBIAL SUSCEPTIBILITY OF STENOTROPHOMONAS MALTOPHILIA ISOLATED FROM RESPIRATORY SPECIMENS FROM A TERTIARY CARE CENTER IN PAKISTAN

*Joveria Farooqi, Kauser Jabeen, Erum Khan, Rumina Hasan*

*Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Background:** *Stenotrophomonas maltophilia* (SM) is an opportunistic pathogen that results in serious infections including pneumonia in hospitalized patients. Management of these infections is difficult due to intrinsic resistance of SM to various antimicrobials. Acquired resistance to first line agents have also been reported with increasing frequency. This study evaluates antimicrobial resistance of SM isolated from respiratory specimens at a tertiary care hospital of Pakistan from 2008-2012.

**Objectives:** To determine antimicrobial resistance of SM isolated from respiratory specimens at a tertiary care hospital of Pakistan from 2008-2012.

**Methods:** The study was conducted at the Aga Khan University Hospital Karachi, Pakistan. During the study period SM isolates were identified using standard methodology. SM strains isolated from respiratory specimens (sputum, tracheal aspirates, bronchoalveolar lavage) were included in the study. Duplicate isolates from same patients were excluded. Antimicrobial susceptibilities were determined using disc diffusion and were interpreted according to Clinical Laboratory Standards Institute (CLSI) criteria. Fluoroquinolones tested were ofloxacin (2008-2010) and ciprofloxacin (2011-2012).

**Results:** A total of 300 isolates from 286 hospitalized patients were obtained from respiratory specimens during the study period. 16/286 (5.6%) of these patients had concomitant bacteremia. 187 patients were male and 99 females, median age was 51y (0-105 y). 5.0% of the isolates were resistant to cotrimoxazole, 40.1% were resistant to ceftazidime and 11.2% were resistant to fluoroquinolones. 21.4% (3/14)

of isolates from subsequent cultures developed resistance to ceftazidime. Resistance was not observed against colistin. One strain, found sensitive only to colistin, was treated successfully with 14 days of colistin and levofloxacin combination therapy.

**Conclusions:** Due to low resistance, cotrimoxazole remains the first line drug for the management of respiratory tract infections due to SM in our setup. A high resistance to ceftazidime precludes the use of this drug for empirical management.

**Keywords:** *Stenotrophomonas maltophilia*, resistance, respiratory isolates.

#### **9.70** RELIABILITY OF CXCL10 IN MONITORING TUBERCULOSIS TREATMENT DEPENDS ON SERUM VITAMIN D LEVELS

*Nawal Salahuddin, Faisal Mahmood, Nisar Rao, Kiran Iqbal, Farheen Ali, Mussarat Ashraf, Masooma Aqeel, Fasih Rahman, Shafaq Mahmood, Muniba Islam*

*Department of Medicine, Aga Khan University, Karachi, Ojha Institute of Chest Diseases, DOW University of Health Sciences, Karachi, Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Background:** The chemokine, CXCL10 is an inflammatory marker which is raised in tuberculosis (TB). Reduced serum vitamin D levels have been associated with susceptibility to TB. CXCL10 gene expression is downregulated by 1, 25 dihydroxy vitamin D. CXCL10 has been proposed as an adjunct biomarker for monitoring TB but the relationship between CXCL10 and vitamin D levels are not well understood.

**Objectives:** To investigate the relationship between vitamin D levels and response to ATT using CXCL10 as a biomarker of inflammation in the host

**Methods:** One hundred and twenty three patients with pulmonary TB were recruited through Ojha Institute for Chest Diseases, DUHS, Karachi. TB

was evaluated using a 'TB Score' an assessment system based on multiple clinical parameters. Patients were followed up through 6 months of anti-tuberculous therapy (ATT). Serum vitamin D levels and CXCL10 levels were measured at baseline and after 12 weeks of ATT. Vitamin D levels were classified as Optimal (>30 ng/ml), Insufficient (20-30 ng/ml) and Deficient (4 ng/ml). Using the TB score after 12 weeks of therapy and patients divided into 'Responders', showed and 'Non-Responders', those who did not a reduction in their TB score.

**Results:** In TB patients at baseline, serum vitamin D and CXCL10 levels were significantly correlated with each other. Serum vitamin D levels ( $p < 0.0001$ ) and CXCL10 levels ( $p < 0.0001$ ) were significantly reduced after 12 weeks of ATT. Response to therapy was assessed after stratification of patients according to baseline vitamin D levels. Therapy induced decrease in CXCL10 occurred in patients with 'Insufficient' and 'Deficient' but not in those with 'Optimal' Vitamin D levels. Therapy-induced decrease in CXCL10 levels was evident only in the 'Responder' group.

**Conclusions:** CXCL10 may be a useful adjunct marker to follow response to treatment in TB but should be interpreted based on vitamin D levels of patients

**Keywords:** CXCL10, vitamin D, tuberculosis, biomarker

#### **9.72** MYCOBACTERIUM TUBERCULOSIS PE\_PGRS GENETIC POLYMORPHISM AMONGST SUSCEPTIBLE AND EXTENSIVELY DRUG RESISTANT (XDR) STRAINS IN PAKISTAN

*Akbar Kanji, Zahra Hasan, Asho Ali, Ruth Mc Nerney, Kim Mallard, Francesc Coll, Grant Hill-Cawthorne, Mridul Nair, Taane G Clark, Sana Jafri*

*Department of Pathology & Microbiology, Aga Khan University, Karachi, London School of Hygiene & Tropical Medicine, United Kingdom and King Abdullah University of Science and Technology, Thuwal, Kingdom of Saudi Arabia*

**Introduction:** Mycobacterium tuberculosis (MTB) PE\_PGRS genes (Proline glutamic acid polymorphic GC rich repetitive sequences) are involved in antigenic variation generated by a high frequency of genetic polymorphism in these genes. Extensively drug resistant (XDR) strains are those which are resistance to isoniazid, rifampicin, fluoroquinolone and also injectable aminoglycoside antibiotics. The association between genetic polymorphisms such as Single Nucleotide Polymorphisms (SNPs), Insertions and Deletions in PE\_PGRS genes and resistance has not been evaluated previously.

**Objective:** To determine presence of SNPs and InDels in the PE\_PGRS genes of susceptible and XDR MTB strains.

**Method:** Whole genome sequencing (WGS) analysis of susceptible CAS1 (n=5) and XDR CAS1 (n=20), CAS (n=2), CAS2 (n=1), EAI3 (n=2), Orphan (n=9), T1 (n=2) and X3 (n=1) strains

**Results:** There were 42 PE\_PGRS genes and 111 SNPs which included 16 Non synonymous and 95 synonymous mutations in the PE\_PGRS genes. All 42 MTB strains had SNPs in the PE\_PGRS genes: 1, 3, 6-7, 9-10, 13 and 47. The majority of deletions were 1-9 bps in susceptible strains (PE\_PGRS: 3, 5, 16, 19, 21, 49 and 55 genes) while, insertions 9-18 bps were observed in PE\_PGRS genes: 6, 19, 28, 30, 33, 50-51, 53, 57 and 61. In the XDR strains, deletions 1-18 bps were observed in PE\_PGRS genes: 3, 5, 19, 21, 23, 36, 42-43, 49-50, 55 and 57 while, insertions 9-18 bps were observed in the PE\_PGRS genes: 6, 19, 28, 30, 33, 45, 51, 53, 57 and 61. Indels in PE\_PGRS6 gene differed between susceptible CAS1 and XDR CAS1 MTB strains. Significant differences was observed Indels of in the PGRS6, PGRS30, PE\_PGRS19 and 49 genes XDR CAS1 and XDR of other lineages. Deletions in the PGRS5 and 49 genes differed between XDR CAS1 and XDR other MTB strains.

**Conclusion:** Currently limited data is available on sequence variations such as SNPs and InDels in the PE\_PGRS genes of susceptible and XDR MTB strains. Further investigation of genetic diversity in the PE\_PGRS genes will contribute

to the understanding of antigenic variability in these strains

**Keywords:** Tuberculosis, mycobacterium, whole genome sequencing

### 9.73

#### SEROPREVALENCE OF EPSTEIN-BARR VIRUS IN HEALTHY BLOOD DONORS

*Shabnum Khawaja, Lena Jafri, Bushra Moiz, Aysa Habib Khan*  
*Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Background:** Antibodies to EBV (Epstein Barr virus) have been demonstrated in all population groups worldwide; ~ 95% of adults are eventually EBV-seropositive (World Health Organization). By age 4, EBV seroprevalence reaches 100 % in developing countries and ~25-50 % in lower socioeconomic groups in the United States. The seroprevalence of EBV is unknown in our population.

**Objective:** To determine the seroprevalence of EBV in healthy blood donors at AKUH.

**Methods:** Blood donors who reported to the 'Blood Bank' during July 2013 and satisfied the criteria for blood donation were included in this cross sectional study. As per 'Clinical Laboratory Standards Institute' standardized questionnaire was also used to confirm healthy individuals. After informed consent blood was drawn and serum analyzed for EBV nuclear antigen (EBNA)-IgG, viral capsid antigen (VCA)-IgG and VCA-IgM by chemiluminescent enzyme immunoassay on IMMULITE 2000.

**Results:** Mean age of subjects (n=63) was 29±8.9 years; 86% being males and 9.8% were smokers. According to ethnicity 78% of subjects were Urdu speaking, 13.8%, 1.5%, 1.5% were Pathan, Punjabi and Sindhi respectively. All were screened negative for HIV, hepatitis B, hepatitis C, syphilis, and malaria.

Out of the total 80.9% of the subjects had evidence of past exposure both VCA-IgG and EBNA-IgG being positive, 7.9% of them had positive EBNA-IgG with indeterminate VCA-IgG, 6.3% had only EBNA-IgG positive and

there were 3.1% with indeterminate EBNA-IgG along with positive VCA-IgG. No evidence of acute infection was found (VCA-IgM negative in all). There was one subject with the entire antibody panel negative and one with only EBNA-IgG indeterminate.

*Conclusions:* The results presented here indicate that 80.9% of the blood donors were exposed to EBV infection in the past as evident by their biochemical antibody status

*Keywords:* donors, seroprevalence, frequency

#### 9.74 FREQUENCY OF AMINOACIDOPATHIES AND ORGANIC ACIDEMIAS: A LOCAL EXPERIENCE

*Farooq Ghani, Aysha Habib Khan, Farhan Javed Dar, Nasir Ali Khan, Rakshanda Maher, Farhat Jehan, Azeema Jamil, Bushra Afroz, , Department of Pathology & Microbiology and Department of Paediatrics, Aga Khan University*

*Background:* Organic acid disorders and aminoacidopathies are inborn error of metabolism (IEM) in which organic acids or specific amino acids accumulate in tissues and biological fluids of affected individuals.

*Objective:* To determine the different types of aminoacidopathies and organic acidurias in children from parents who have a high rate of consanguineous marriages.

*Methods:* A cross sectional study conducted at section of Chemical Pathology, Department of Pathology & Microbiology and Department of Pediatrics. Amino acids were quantified using ion exchanged HPLC using Biochrom 30+ and organic acidurias were detected using gas chromatography-mass spectrometry on Agilent analyzer. Plasma amino acids and urine organic acidurias reported between month of January and August 2013 was analyzed.

*Results:* Total of 226 patients, 127 males (56.2%) and 99 (44%) females were tested for IEM. Age ranged from 1 day to 33 years with mean age around 4 years. Sample tested were mostly of patient admitted in hospital (n=164, 72.5%). Most common reason for testing these

patients was developmental delay 123 (54.4%). History of consanguinity was found in 144 (64%).

Total 9 cases were of low methionine level which may be due to cobalmin defect or deficiency. Three cases were of each 2-methyl-3-hydroxybutyryl-CoA dehydrogenase deficiency, propionic academia, cystathionine beta synthase deficiency and tyrosinemia Type-1. Two patients were each of hyperphenylalaninemia, isovaleric academia, HMG- CoA lyase and urea cycle disorder. While 1 case each of ethylmalonic aciduria, maple syrup urine disease and glutaric aciduria.

*Conclusions:* Children born to parents with high rate of consanguineous marriage would be expected to have a higher rate of metabolic disorders. There is a need for more wide spread screening for IEM disorders in such a population

*Keywords:* Amino acids, organic acids, HPLC, gas chromatography-mass spectrometry

# **Neurosciences / Mental Health**

### **10.1** TARNISHING AUTONOMY IN A 28 YEAR OLD CLIENT WITH PARANOID SCHIZOPHRENIA: ROLE OF ADVANCE DIRECTIVES IN CONTEMPORARY MEDICINE

Anaiz Ak. Khowaja  
Nursing Services, Aga Khan University, Karachi

*Introduction:* Individual autonomy is an idea that is generally understood as the capacity to be one's own person, to live one's life according to reasons and motives that are taken as one's own and not the product of manipulative or distorting external forces (Stuarmills, 2005).

*Method:* Systemic review of literature from 12 research articles from 2003 to 2013 was conducted through electronic medium by using JPMA, SAGE and Google search engines.

*Case Description:* A 28 years old woman was admitted at karwan-e-hayat with the diagnosis of paranoid schizophrenia. She was admitted with the complain of suspiciousness and aggression. She was suspicious with the staff too and was refusing meals and medicines due to paranoid delusion. The staff had given her medicines and meals forcefully for improving her health. As a result she gets aggressive and need to be restrained chemically and physically usually at the time of medicine and meal.

*Discussions/Implications :* According to WHO (2003), 450 million people worldwide suffer of a mental or behavioral disorder. Although giving medications may improve their mental health but on the other hand forcing her generates the feeling of being dependent and compromised self-identity. Moreover, according to Happell & Koehn (2011), a large number of studies have shown that taking patients all of the autonomy has negative psychological outcomes on patients. Most patients are found to report feelings of anger towards staff, powerlessness, sensory deprivation, disempowerment, humiliation and low self-esteem.

*Conclusion:* Psychiatric advance directive has found to be one of the more promising innovations in recent years to give patients a greater voice in their psychiatric treatment. Unfortunately in Pakistan advance directives in

psychiatric setup has not been practiced yet and nor it has been included or supported by mental health Act.

*Keywords:* Mental health, autonomy, directive

### **10.2** ORIENTING A MENTALLY ILL CLIENT TO REALITY IS IMPORTANT FOR SUCCESSFUL REHABILITATION

Anoosha Mukhtiyar, Lubna ghazal  
School of Nursing & Midwifery, Aga Khan  
University, Karachi

*Objective:* the objective of case report is to share the positive effects of reality orientation in a mentally ill client as a part of successful rehabilitation. Reality orientation was used as a nursing intervention which means revealing certain information upon a person that helps him/her in familiarizing with current life circumstances (Varcarolis & Halter, 2010). The purpose of this intervention was to help the client to withdraw herself from false hope, accept her present and prepare herself for the future.

*Results:* This intervention focuses a step-by-step approach with sets of counseling in orienting a mentally ill client to the bitter realities of her life. Moreover, this case study also explains some possible reactions of a mentally ill client when her false hope was broken down after being oriented to the realities. Furthermore, this case study represents some recommendations for healthcare professionals to deal with clients' possible reactions, help the client to cope with realities of her life and built resilience. Reality orientation assisted her in accepting present circumstances of her life positively and in making self-directed goals for her future. In addition, it also helped her to engage in developing new relationships with hospital staff and other patients. Orientation to reality enabled her to take active participation in occupational therapy and planning for her future income generation.

*Conclusion:* If mentally ill clients are being oriented in an appropriate way; they can cope

with their life stressors, built resilience, engage themselves in different activities to manage their disease process and can also work for their own income generation.

*Keywords:* Reality Orientation, Mentally ill, Rehabilitation

### 10.3

#### THE FREQUENCY AND FACTORS LEADING TO STROKE ASSOCIATED PNEUMONIA IN ALL ACUTE STROKE PATIENTS ADMITTED AT A TERTIARY CARE HOSPITAL

*Anwar Hussain Abbasi*

*Department of Medicine, Aga Khan University, Karachi*

*Introduction:* Pneumonia is one of the major complications after stroke. Stroke associated pneumonia is the major cause of morbidity and mortality after the stroke. There are many factors which lead to stroke associated pneumonia early in the course of acute stroke; these include DM, hypertension, smoking, impaired swallowing etc.

*Objective:* To determine the frequency and factors leading to stroke associated pneumonia in all acute stroke patients admitted at a tertiary care hospital over a period of six months.

*Study Design:* Case series *SETTING:* Medicine department, Aga Khan University hospital, Karachi.

*Duration:* The study period was six months after the approval of the synopsis from RTMC, CPSP Karachi and extended from 19th July 2011 to 18th January 2012.

*Subjects and Methods:* All adults patients (age 14 years and above) admitted through emergency room in the medical ward of Aga Khan University hospital Karachi with the diagnosis of acute stroke were enrolled. Demographic data like age and sex were recorded. Diagnosis of stroke associated pneumonia was made on basis of CDC criteria for pneumonia. Various factors like HTN, DM, COPD were recorded. All analyses was conducted by using the Statistical package for

social science SPSS (Release 19.0, standard version, copyright © SPSS; 1989-02).

*Results:* The frequency of stroke associated pneumonia was found to be 21% in all acute stroke patients. Hypertension, DM and impaired swallowing were the most common factors leading to stroke associated pneumonia.

*Conclusion:* Stroke associated pneumonia is the common and serious complication after stroke. All the efforts should be taken to control various factors leading to stroke associated pneumonia to improve stroke outcome.

*Keywords:* Acute Stroke, stroke associated pneumonia, factors leading to stroke associated pneumonia

### 10.4

#### EFFECTIVENESS OF MUSIC THERAPY IN COMPARISON WITH PSYCHIATRIC DRUGS IN TREATMENT FOR MENTAL ILLNESSES

*Bakhtawar Khowaja*

*School of Nursing & Midwifery, Aga Khan University, Karachi*

*Introduction:* Music therapy helps in engaging psychiatric clients from their altered thought process by soothing down their neuroendocrine chemicals. In the field of psychiatric treatment and rehabilitation, drugs are the main course of treatment. However, it is well known that psychosocial-therapies including antidepressants and antipsychotics medications are expensive treatment modalities. Moreover, the use of drugs by patients demonstrates 17% harmful side effects (Whitaker, 2013). In comparison, music therapy can be more therapeutic in engaging clients, cost effective and demonstrate no side effects.

*Objective:* To assess the effectiveness of music therapy in psychiatric clients. Music therapy was used as an intervention on a client with schizoaffective disorder.

*Method:* This case study included patient who had schizoaffective disorder. The patient was reviewed for outcomes of music therapy on her illness after application of interventions.

**Results:** The effects of music on mental health include discharge of negative emotions, increased insight development and comfort level, positive feelings, emotional uplift and social connections (Anderson, 2011) Psychiatric illnesses are prevalent in Pakistan and other developing countries. The high costs of anti-psychotics and anti-depressants oblige poor people to evade treatment for mental illnesses. Music therapy is low cost tool with no side-effects and its easy availability can decrease the prevalence and recurrence in people who cannot afford costly drugs.

**Conclusion:** This study concluded that music therapy provides better therapeutic effects and rapid treatment in mental-illnesses as compared to antidepressants and antipsychotics.

**Keywords:** Music therapy, Mental disorder, Psychiatric drugs

## 10.5

### REVIEWING PREVENTIVE MEDICINE FOR MENTAL RETARDATION: MINING THE WEB FOR NON SYNDROMIC AUTOSOMAL RECESSIVE MENTAL RETARDATION

*Bushra Chaudhry, Sher Bano, Mustafa Iftikhar, Syed Rizwan, Bushra Afroz*  
*Departments of Biological & Biomedical Sciences, Paediatrics and Child Health and Medical College, Aga Khan University, Karachi*

Mental retardation is a lifelong disability defined as an IQ below 70, impaired cognition and deficits in adaptive behavior. When MR is isolated, and is not accompanied by dysmorphisms or other health problems (such as in Down's syndrome), it is called non-syndromic. Preventive medicine is helpful in diseases, whose cause is genetic, can be prevented through techniques such as genetic testing and screening. The etiology of MR is heterogeneous and is only prevalent in consanguineous families. In Pakistan, up to 62.7% of marriages are consanguineous and up to 80% of those marriages are between first-cousins. Here we review search for preventive medicine possibilities and identification

techniques for mutations which can avoid mental retardation resulting from autosomal recessive alterations. Research was conducted through collection of relevant information from articles existing online using search engines like Google Scholar and PubMed and associated sites such as Gene cards. Additional information about gene products was obtained through searching through protein databases such as Uniprot. In the twenty genes researched, a total of fifty mutations were found to lead to non-syndromic mental retardation. However, STXBP1 had only heterozygous mutations reported. Studies done in Pakistani population to find occurrence of autosomal recessive mutations in this panel of twenty genes are scanty. Molecular information about the etiology of NS-ARMR in the proband can provide opportunity for performing subsequent pre-natal genetic testing or pre-implantation genetic diagnosis in a specific family which may also be the source of better IVF outcome here in Pakistan for genetic tests and preventive medicine.

**Keywords:** NSARMR, Genetics, Population

## 10.6

### CLINICAL AND LIFESTYLE DETERMINANTS OF ASYMPTOMATIC INTRACRANIAL ATHEROSCLEROTIC DISEASE IN ADULTS

*Farzin Majeed, Ayeesha Kamal, Omrana Pasha, Muhammad Islam*  
*Departments of Community Health Sciences and Medicine, Aga Khan University, Karachi*

**Background:** The incidence of stroke has increased by 100% in the last four decades in developing countries like Pakistan. Intracranial atherosclerotic disease (ICAD) is the most frequent causative subtype of ischemic stroke in the world including Pakistan. The objective of this study was to identify the clinical, lifestyle, dietary and psycho-social determinants of asymptomatic ICAD in adults undergoing MRI at two tertiary care settings in Karachi, Pakistan.



**Methodology:** This cross sectional study was performed over a period of 3 months. After screening for stroke via the Questionnaire for Verifying Stroke Free Status (QVSS) the participants underwent detailed history and MRA examination. Descriptive analysis was followed by Multivariable Cox proportional hazards algorithm which was used to report prevalence ratios and 95% confidence intervals.

**Results:** Of the 283 eligible participants approached, 200 participated in the study. Of these, asymptomatic ICAD was found in 34.5% (69) of the participants, mostly < 45 years. Among the 3800 arteries studied the posterior cerebral artery was found to be the most affected (42%; 37) followed by vertebral (34%; 30) and MCA (22.7%; 20). Significant stenosis ( $\geq 50\%$ ) was found in 37.6% (32) of the arteries with 20% (17) being completely occluded. Higher SES, smokeless tobacco and increasing quintiles of western dietary were significantly associated with asymptomatic ICAD. Peri-ventricular lucencies were also found to be significantly associated with ICAD.

**Conclusion:** ICAD is a major public health problem with a burden of 34.5% in otherwise asymptomatic subjects. It preferentially affects the posterior circulation and is with modifiable lifestyle risk factors, mostly in younger individuals.

**Keywords:** Stroke, Intracranial Atherosclerotic disease, lifestyle factors

### 10.7 NON-COMMUNICABLE DISEASE CO-MORBIDS OF OLD AGE PSYCHIATRIC PATIENTS

*Nazila Bano Khalid*  
*Department of Community Health Sciences, Aga Khan University, Karachi*

**Introduction:** According to WHO 4.2 percent of total population is over 65 years of age and may get twice by 2025. Likewise, the current life expectancy of 65.99 years at birth will reach about 72 years by 2023. Hence, in the wake of social and cultural disintegration of family

systems owing to globalization and economic constraints the older people are more vulnerable to neglect and deprivation of health care facilities.

**Purpose:** The objective of this study was to identify the non-communicable co-morbid of geriatric psychiatric patients.

**Method:** Retrospective study of 637 cases (ages 65 and above) out of 9069 cases registered at Free Mental Health Clinic of Pakistan Association For Mental Health Clinic from Jan 2003 to Dec 2012 was done.

**Results:** It was seen that 49% (319) had Major Depressive Disorder, 13% (83) had Cognitive Disorder and 11% (69) suffered from Anxiety Disorders followed by 8% (54) Bipolar Disorder. The most common non-communicable disease was Hypertension 67% (146), Diabetes Mellitus 20% (44) and Asthma 7% (15), 4% (9) had bone fractures and only 1% (1) had Cancer.

**Conclusion:** These findings are consistent with WHO report which says that HTN and DM are major non-communicable co-morbid of Major Depressive Disorder and other psychiatric disorders.

**Keywords:** non-communicable Co morbid, Old age, psychiatric patients

### 10.8 VALIDITY AND RELIABILITY OF THE CHILD BEHAVIOR CHECKLIST IN KARACHI, PAKISTAN

*Yusra Sajid, Ghazala Rafique, Sanobar Nadeem, Iqbal Azam, Nargis Asad*  
*Department of Community Health Sciences, Human Development Programme and Department of Psychiatry, Aga Khan University, Karachi*

**Background:** Early childhood emotional behavioral (EB) problems track into school age and adolescence, and predict adult psychopathology and suicidal tendencies. Research related to early childhood EB problems is virtually non-existent in Pakistan, due to the unavailability of validated measurement tools. The Child Behavior

Checklist for ages 1½ to 5 years (CBCL/1.5-5) is a behavior rating scale widely used worldwide to facilitate clinical assessment and research. This study aimed to assess the criterion validity and 1-month test-retest reliability of the CBCL/1.5-5 DSM-oriented scales (DOS).

*Methodology:* The study was conducted in two low-income communities in Karachi. The Urdu version of CBCL/1.5-5 was administered to mothers of the selected children, followed by clinical psychological interview within 1-3 days. The CBCL/1.5-5 was re-administered one month later. The CBCL/1.5-5 was scored using the Assessment Data Manager (ADM) software; SPSS version 19 was used to conduct all statistical analyses.

*Results:* CBCL/1.5-5 data was collected on 453 children, and clinical interview of 378 children was conducted; test-retest reliability interviews were conducted on 220 children. About 83% children had at least one psychological problem upon clinical assessment. CBCL/1.5-5 DOS were found to have low to moderate discriminative ability (AUC 0.63 – 0.78). Moderate to strong test-retest reliability was observed ( $r = 0.38 - 0.74$ ).

*Conclusion:* The CBCL/1.5-5 DOS have adequate discriminative ability (sensitivity and specificity) when compared to clinical assessment. One-month test-retest reliability is also adequate. Thus, CBCL/1.5-5 is a suitable screening instrument for early childhood EB problems in the community.

*Keywords:* Child behavior checklist/1.5-5, emotional/behavioral problems, children

### **10.9** CONSEQUENCES OF PRE-MARRIAGE DISCLOSURE OR CONCEALMENT OF EPILEPSY DISORDER IN THE MARITAL LIVES OF WOMEN IN KARACHI, PAKISTAN

*Erum, Fauziya Ali, Asho Ali, Mughis Sherani*  
School of Nursing & Midwifery and Medical  
College, Aga Khan University, Karachi

*Background:* Epilepsy has severe implications on women's social domain of life especially in

matrimonial affairs, due to the negative perception and social stigma attached to this disease. Therefore, female patients and their parents are anxious and hesitant whether to disclose or conceal the diagnosis at the time of marriage negotiations.

*Objective:* The purpose of this study was to identify the rate of prevalence, reasons, and consequences of disclosure or concealment of epilepsy diagnosis at the time of women's marriage negotiations. *Methodology* This cross-sectional study included 381 married women with epilepsy, from a tertiary healthcare setting in Karachi, Pakistan. A purposive sampling method was used for the study.

*Results:* The present study shows that 64% of the participants disclosed the epilepsy diagnosis to their prospective spouse and in-laws at the time of marriage negotiations. The current study has identified three key reasons for the pre-marriage disclosure of epilepsy that include disruption in the marital relationship, trustworthiness in the matrimonial relationship, and acceptance from the prospective spouse. Respondent have reported four major reasons for the concealment of epilepsy: to prevent proposal rejection, stigma, pressurized by their own family to hide, myths and misperceptions regarding epilepsy. Married epileptic women who have disclosed or concealed are suffering from deleterious consequences.

*Conclusion:* This study concludes that pre-marriage disclosure of epilepsy is a crucial and a complex decision because it carries numerous benefits as well as harms for women in the different domains of life.

*Keywords:* Epilepsy, disclosure of epilepsy, marriage negotiation

### **10.10** PATTERN OF CHILD PSYCHIATRIC EMERGENCIES AT A UNIVERSITY HOSPITAL IN KARACHI, PAKISTAN

*Faheem Khan, Tayyab Arfeen, Mukesh Bhimani,*  
*Mohammad Zaman, Tania Nadeem*  
Department of Psychiatry, Aga Khan University,  
Karachi

*Background:* A large number of children and adolescents (C&A) across the globe are devoid of mental health services. This situation is more

serious in Pakistan where C&A mental health services are virtually non-existent. Emergency and liaison service is an essential component of child and adolescent mental health (CAMH). For e.g. in United States there are almost a million child and adolescent consultations in emergency department (ED), highlighting need to develop specialized CAMH services. Our objective was to study the pattern of referrals for C&A mental health problems at a university hospital in Karachi, Pakistan.

*Methods:* This was a retrospective case-note review of all referrals for mental health problems of C & A generated by ED and general wards at Aga Khan University Hospital, Karachi. We included medical records of all C & A below 18 years of age, from June 2010 to December 2012.

*Results:* There were 160 referrals for C&A mental health problems during the study period (average of 5-6 referrals/month). Majority of the referrals were from ED (66%), followed by pediatric ward (23%) and others (17%). Depression and anxiety were found to be the most common diagnosis (n=55, 34%), followed by conversion disorder (n=21, 13%). 20% (n=33) of cases had no diagnosable mental illness. Major stressors identified were interpersonal conflicts, particularly within the family context or significant others (16%, n=26) and academics (14%, n=22). Approximately 43% were not prescribed any psychotropics as compared to 4% other medications and all rest were prescribed psychotropics.

*Conclusions:* The relatively low referral rate may be due to lack of awareness of C&A mental health issues in health settings in Pakistan. There is need not only to raise awareness but also to develop CAMH services and conduct more research in this area in Pakistan.

*Keywords:* Adolescents, Children, Liaison Psychiatry, Emergency Psychiatry

## 10.11 ROLE OF NURSE MANAGING AGGRESSIVE BEHAVIOR IN PSYCHIATRIC SETTING

*Fatima Mohammad Kirmiyani*  
*School of Nursing & Midwifery, Aga Khan University, Karachi*

*Introduction:* Every human displays diverse emotions. In the psychiatric setting restraint found as coercive and commonly practiced to control the aggression of mentally ill patients. In the light of Code of Practice (2008), "Managing aggressive behavior by using physical restraint should be done only as a last resort and never as a matter of course."(p.118). In the sociocultural context restraining has been challenged because it creates moral conflict to respect for the patient's right to autonomy and dignity.

*Objective:* To highlights least restrictive measures for the management of aggressive patients in psychiatric setting.

*Method:* This case study included schizophrenic patient. Comprehensive review of literature from ten research articles from 2008 to 2013 was conducted through by using, Google scholar search engine and SAGE.

*Results:* least restrictive measures to control anger includes environmental and organizational, behavioral and attitudinal, pharmacological, and physical management and communication strategies that is the use of De-escalation technique is effective in preventing violence. Moreover, assessment of early signs associated with aggression is also important.

*Conclusion:* As a nursing student, in managing patient's aggression it is essential to understand and implement least restrictive measures, as discussed to ensure client's mental health improvement rather than worsening the health condition this creates great concern for mental-health nurses.

*Keywords:* restraint, aggression, nursing care

### 10.12

#### ADVANCE DIRECTIVE: A SOLUTION FOR AUTONOMY CRISES

*Kainat Hashwani, Komal Jiwani  
School of Nursing & Midwifery, Aga Khan  
University, Karachi*

*Introduction:* Autonomy has always been the human's basic need in order to have dignity. Psychiatric advance directive has found to be one of the more promising innovations in recent years to give patients a greater voice in their psychiatric treatment. It involves patient and his family in making decisions, fosters better collaboration between care providers and patient. Individual feels that he has some control over his life, and has input into the course of treatment, thus does not feel helpless, or dependent on others (Attkinson, 2007).

*Objective:* To assess the effectiveness of Advance Directive in order to secure psychiatric client's autonomy. The Advance directive was used as a tool of providing positivity and autonomy.

*Method:* This case study includes the patient who had Schizophrenia. The patient was observed for importance of autonomy and effects on patient's health in terms of not being autonomous. Comprehensive literature review of 10 research articles from 2007 to 2013 was conducted by using Science Direct, SAGE, American Psychiatric nurses Association and Google scholar search engine.

*Result:* Advance Directive has not only given a solution for ethical issues but has also contributed in increasing patient's self-esteem, self-respect and autonomy. It has provided an opportunity to patient for equally participating in decision making for care plan to reduce their anxiety.

*Conclusion:* Autonomy has always been a leading ethical issue in mental health care where beneficence overrides it but Advance directive can provide patient with autonomy for making treatment decisions and help a healthcare provider to provide dignified care in an ethical context.

*Keywords:* Advance Directive, Autonomy, Psychiatric illness

### 10.13

#### ISSUE OF NONCOMPLIANCE IN MENTAL ILLNESS

*Karishma Karim, Reema Roshan, Azada Hussain, Husnia Jumma Khan, Rabia Qasim, Salima Karani  
School of Nursing & Midwifery, Aga Khan  
University, Karachi*

*Topic:* Literature review presenting issue of noncompliance in mental illness. *Background:* This paper highlights the basic definition of noncompliance and its causes including stigma, poor insight, improper persuasion techniques and side effects of medications. Further, major and practical interventions are mentioned that comprises of individualized approach, insight-oriented therapies, cognitive and dialectical therapies those healthcare workers especially nurses may use to reduce noncompliance.

*Method:* Research journals from 2004-2012 were chosen and considered to discover reliable and divergent analysis. Noncompliance, mental illness, psychiatric therapies are the topics that were preferred to read. These topics will come across throughout this literature review.

*Findings:* It is found from the researches that noncompliance is a chief clinical concern as it may have a major influence on treatment conclusions and direct clinical consequences. This major issue in health settings may affect lives of people due to the progression of their diseases. In our Pakistani culture, noncompliance has been raised up thus leading to instability of societies. Western literature also point out the problems attached with noncompliance. As a nurse, we have a huge responsibility on our shoulders to promote health. This can only be done if compliance is made stronger. Thus, healthcare providers should work on causes of noncompliance by applying interventions appropriately for each patient.

*Keywords:* Noncompliance, Psychology, Stigma

#### **10.14** POSITIVE PSYCHOLOGY IN NURSING PRACTICE

*Kiran Iqbal, Karima Ali, Asma Sunderani, Shelina Aslam, Shamsa Amin, Malik Moiz, Murk Mohammad*  
*School of Nursing & Midwifery, Aga Khan University, Karachi*

Psychology introduces another broad field, Positive Psychology (PP), which studies positive emotions, traits, and behaviors, helping in enhancement of happiness and well-being. This review aims to explain that the PP influences healthcare professionals to help patient reach optimum satisfaction. This contribution is based on literature review of past twelve years, concentrating on the application of PP in nursing practices which increases motivation, self-confidence, and staff's performance. The inclusive criteria for the selection of articles focuses on three pillars of PP that is subjective, individual, and group level, particularly discussing optimism, responsibility, and altruism in nurse's behaviors and practices. Different electronic databases (ScienceDirect, Springerlink, BMJ Journals Collection, and others) were used for identifying twenty-one empirical literatures fulfilling the criteria. Joy, hope and happiness; such emotions help generate behavioral traits like courage, persistency, and wisdom, liberating positive energy and pleasing patients with care. This review proved that being healthcare providers, it is essential to promote positive thinking in practices as it maintains constructive environment and enhances our sense of emotional contentment. Thus, this reflects to create an adaptive approach towards effective patient-care and uphold better relationships. Accordingly, interventions like counting blessings, strength-based approach, mind-full intervention, acceptance and commitment therapy, helps in adopting PP in daily lives. This extensive review relays that PP is not about eliminating negative emotions and experiences from life, rather, flipping the coin and applying PP in practice to improve patient's quality of life.

*Keywords:* Positive psychology (PP), nursing practices, patient's wellbeing

#### **10.15** STIGMATIZATION TO MENTAL ILLNESS: A BARRIER IN THE PATH OF RECOVERY

*Naila Pachani*  
*School of Nursing & Midwifery, Aga Khan University, Karachi*

For over centuries, negative stereotypes towards mental illnesses have remained a powerful barrier in the path of recovery for the mentally ill usually known as "Mental illness stigma". Such false misconceptions result in profound loss of opportunities that define a quality life for individuals with mental illness like acquiring good jobs, secure housing, satisfactory health care, and adequate socialization. They may also face discrimination at work or other places leading them to conceal their problems and avoid help. Moreover, in eastern culture, mental health patients are still stigmatized as social outcasts and perceived as being possessed by evil. Hence, mental illness stigma severely hampers holistic recovery of mentally disabled people. Therefore, there is a dreadful need to direct our attention towards overcoming the discrimination against mental illness by employing effective anti-stigma interventions. Health-care providers especially nurses need to play their roles in dispelling the stereotypes associated with mentally ill. This paper reviews publications between 2006 and 2012 from different research databases and identifies the causes and impacts of mental illness stigma pertinent to Pakistani context by incorporating a case study and analyzing it through a social-cognitive framework. Furthermore, it predominantly highlights the role of nurses to curb the menace of mental illness stigma. The paper then concludes that as majority researches highlight stigma as an impending barrier to recovery it is recommended that mental illness stigma should be addressed at different levels by integrating it in the nursing curriculum, community mental health nursing agenda and national health policies.

*Keywords:* Mental illness stigma, recovery, mental health nursing

### **10.16** ROLE OF FAMILY IN PREVENTING MENTAL ILLNESS AMONG CHILDREN

*Numan Hussain, Rozin Feroz Ali*  
*Department of Community Health Sciences, Aga  
Khan University, Karachi*

*Introduction:* Family helps an individual in the development of all aspects of life which include social, psychological and emotional development. In other words, family is the basic resource which fulfills all basic needs of a child which comprise of food, shelter, security and arrangement of resources and finance. Any lacking in one of these roles and responsibilities may result stress and make one's life vulnerable which may eventually lead to mental illness like bipolar affective disorder later or earlier in life.

*Objectives:* Explore the role of family support in mental health of children. Identify the strategies to enhance effective family support to prevent mental illness. Method Systematic review of the literature from 10 research articles gathered through print and electronic media device published between the year 2002-2011 and shortlisted 7 articles.

*Results:* A good family support prevents psychological illness. It enhances confidence and self-esteem of an individual and provides sense of security. In-fact, improper support from family can result conflicts which leads to acquire ineffective coping strategies in children. Lack of awareness about rights and responsibilities and complex family systems can be causes of ineffective family support.

*Conclusion / Recommendation:* Several researches strongly emphasize on the role of family support for healthier life and normal mental health of children. Poor family support impacts negatively on an individual's mental health. Developing countries like Pakistan have mostly joint family system which is an effective social and family support to individuals. Moreover due to unawareness of responsibilities and rights of children family members are unable accomplish their roles. These countries should emphasize on the importance of family support, identify responsibilities of family members and rights of children through awareness programs in community.

*Keywords:* Family, Children, mental health

### **10.17** IMPACT OF HEALTH CARE PROFESSIONAL'S ANXIETY AND STRESS ON THE CARE OF PSYCHIATRIC CLIENTS

*Quratulain Ali*  
*School of Nursing & Midwifery, Aga Khan  
University, Karachi*

*Introduction:* Psychiatric patients are the prevailing prejudice in Pakistan; it has been commonly observed that they are perceived aggressive and dangerous. These perceived thoughts are magnified as a threat and stress resulting in an emotional response, Anxiety. Anxiety in nurses directly or indirectly creates a barrier in providing efficient nursing care.

*Objective:* To analyze the impact of health care professional's anxiety and stress on the care of schizophrenic client.

*Method:* This case study was evaluated in a private rehabilitation centre in Pakistan. The patient was left neglected in terms of his care, due to preoccupied stereotypical thoughts; nurse was not able to perform complete mental status examination. For this purpose a literature search was conducted related to publications between 2006 and 2012 from different research databases and search engines.

*Result:* Due to nurse's anxiousness very minor improvements were observed in patient's symptoms which include disinhibited thoughts, grandiosity, suicidal ideation and flight of ideas.

*Conclusion:* This case study concluded that psychiatric clients needs compassionate and stressfree nursing care which aids in their quicker recovery.

*Keywords:* Anxiety, Schizophrenia, Nursing

### **10.18** AN IN-VITRO MODEL SYSTEM TO STUDY THE EVENTS OF DEVELOPMENT OF A MAMMALIAN SYNAPSE.

*Rabia Qadeer Malik, Simon Parson*  
*Biological and Biomedical Sciences, Aga Khan  
University, Karachi and University of  
Edinburgh*

Loss of synapses is a major event in neurodegenerative conditions such as Alzheimer's and in various motor neurone diseases. There is progressive neurodegeneration due to loss of connectivity which impairs nerve function. Slow Wallerian degenerating mutant (C57Bl/Wlds) mice were used for this study. In these mice axotomy induces slow withdrawal of nerve terminals from motor endplates. Therefore, distal nerve stumps can be maintained in organ culture over longer period. An organ culture system of isolated nerve and muscle preparation was developed to study the perinatal reorganisation of synapses. This organ culture system allowed observation of changes in morphology of motor nerve terminals and motor endplates. Morphology of Wlds neuromuscular junctions was maintained for up to 72 hr in vitro; preparations showed no evidence of terminal degeneration. By contrast, nerve terminals degenerated rapidly and synchronously in cultures from wild-type mice, resembling Wallerian degeneration in vivo. Rate and time-course of terminal withdrawal / synapse elimination in Wlds preparations was quantified in vivo and in vitro, using fluorescence immunocytochemistry. Synapse elimination in vitro proceeded at approximately the same rate as in vivo. Taken together, data suggested that both natural and axotomy-induced forms of synapse withdrawal are comparable. This organ culture system of Wlds nerve-muscle preparations provides a useful and accessible model system for studying the morphology of neuromuscular junctions to understand the events of synapse development. A greater understanding of the mechanisms of synapse loss will help us understand and therefore treat these diseases.

*Keywords:* Synapse elimination, neuromuscular junctions, neurodegeneration

## 10.19 RELIGION PROMOTES MENTAL HEALTH

*Rabia Qasim Ali, Salima Karani, Husnia Juma Khan, karishma karim, Reema Roshan, azada Hussain*  
*School of Nursing & Midwifery, Aga Khan University, Karachi*

*Topic:* Literature review investigating the role of religion in promotion of mental health.

*Background:* The role of religion in the promotion of patient's mental health has been very well observed in our society and is also documented among various written evidences. This literature review aims to review research studies that have highlighted the role and the effects of religion on mental health.

*Method:* A case was observed in the mental health setting which showed that religion has an impact on the mental health of psychiatric patients. Various literature sources from 2001 – 2012 were studied to gain the knowledge about religion and its importance in people's life and mental health. The studied literature focused on the assessment of role of religion and spirituality on patient's mental health and the strategies to improve mental health by utilizing religious values.

*Findings:* Literature revealed that people living in Pakistan more commonly seek help from religious leaders, Peers, Aamils etc. besides doctors and psychiatrists. Moreover, people also offer prayers and other religious practices more often at the time of miseries. Religious coping can lead to favorable mental health outcomes which include improved mental health, reduced mental distress and life satisfaction in times of stress. Moreover it also helps people to deal with hardships and provide a sense of control over nature. Nurses are responsible to provide information related to religious places and support groups to patients and their families.

*Keywords:* Religion, Mental Health, Coping

**10.20**  
GIVING FALSE ASSURANCE TO  
PATIENTS: A QUESTION TO MORAL  
COMPETENCE

*Reema Roshani Ali Ladhani, Rabia Qasim Ali,  
Karishma Karim, Husnia Juma Khan, Salima  
Karani, Azada Hussain  
School of Nursing & Midwifery, Aga Khan  
University, Karachi*

*Background:* This paper highlights the major aspects of moral competence and giving false reassurance to the patient (mainly psychiatric patient) and its impact on patient's physical and mental health. False reassurance builds up expectations in patients that are unrealistic and not attainable, and then ultimately lack of achievement is considered as failure by the patient that leads to further mental distress. Along with this, kindness, compassion, equanimity, discipline, responsibility, honesty, respect for human dignity and values and rights are discussed in this paper as major components of moral competence.

*Method:* Research journals from 2000-2013 was chosen as a resource to formulate a paper. Codes of ethics, mental health in Pakistan, moral competence in nursing, holistic nursing care are the major topics preferred to study for the review.

*Findings:* It was found that giving false reassurance to mentally ill patient is very common and it drastically affects patient's health as well as nurse and patient relationship. It has been analyzed that the implementation of components of moral components is crucial in order to offer holistic care in nursing profession. This paper also includes few recommendations as well.

*Keywords:* moral competence, nursing, mental health

**10.21**  
LITERATURE REVIEW PRESENTING  
DISCLOSURE OF MENTAL ILLNESS: IS IT  
BETTER TO PURSUE YOUR LIPS?

*Saleema Shoukat Ali Jassani, Nadia Nizar Ali,  
Noureen Abdul Malik  
School of Nursing & Midwifery, Aga Khan  
University, Karachi*

*Background:* The paper highlights the advantages and disadvantages of disclosure of a mental illness by an individual at workplace, home or within society. It has been observed that fear of shame; discrimination and stigmatization are pertinent causes of non-disclosure and influence delay in treatment and recovery. However, disclosure of mental illness uplifts self-confidence, sense of freedom and brings up support groups.

*Method:* various research journals were preferred and consider being a consistent and diverse study. Non-disclosure of mental illness greatly impact on treatment and recovery. An unreported or unidentified case of mental illness can lead to far reaching and horrifying outcomes.

*Findings:* it has been observed through researches that Individuals with mental illness don't desire to disclose due to fear of stigmatization within our culture which could lead to severe consequences such as delayed in treatment and recovery. However if it is disclosed promptly it could be beneficial not only for self but also for the family. The family plays an important role in helping the individual through the disclosure process. This paper will identify the various pros and cons of disclosure and nondisclosure of mental illness in the light of disclosure model and recommendations to reduce the number of unreported mental illnesses.

*Keywords:* disclosure, stigma, mental illness



### 10.22

#### CAUSES AND DESTRUCTIVE IMPACT OF STIGMATIZATION ON HEALTH STATUS OF MENTALLY CHALLENGED CLIENTS

*Salima Karani, Rabia Qasim, Karishma Karim, Husnia Juma Khan, Reema Ali, Azada Hussain, Ashraf Karani*  
*School of Nursing & Midwifery, Aga Khan University, Karachi*

Mental illness is a major obstacle of health care system throughout the world. The solutions and knowledge about mental health issues have increased many folds over the time. However, in many parts of the world the stigma is still attached with the mental illness. It is felt that it will bring bad name to the family if any of the family members is mentally unstable. This paper aims to highlight major causes, probable consequences and suggest recommendations to demark stigmatized mentally ill patients in developing world. Therefore, a systemic review of 10 literature from recent scholar articles (2009- 2012) was conducted to study the impact of stigmatization on mentally ill patients. The findings suggest that the most significant causes of stigma in socio- cultural domain are society's pre-conceived ideas, lack of knowledge and the myths which authenticates stigma towards the mental illness. Moreover, the vicious cycle of stigma on patients' lives and the attitude of health care providers are also among the very important aspects highlighted in some studies. The impact manifested was even more devastating including under or over diagnosed mental illness, delay in health seeking behavior and poor prognosis in community as well as hospital setting. Therefore, it is essential to address these issues and arrange awareness sessions in order to improve the quality life.

*Keywords:* socio-cultural domain, Stigma, Mental health

### 10.23

#### A PILOT PROJECT TO ANALYZE THE APPLICATION OF NIGHTINGALE'S THEORY IN DECLINING DEPRESSION IN ELDERS

*Salima.Karani, Ashraf Karani, Sehrish Shoukat Ali, Rabia Qasim Ali, Karishma Karim, Husnia Juma Khan, Azada Hussain, Reema Ali*  
*School of Nursing & Midwifery, Aga Khan University, Karachi*

It is anticipated that humans are increasing their life expectancy many fold that would result in amplified population of old age people. However, it is observed that elderly population living in nursing homes is experiencing several physical and psychological problems among which depression was significant. The purpose of this study was to determine the effectiveness of implementing Nightingale's theory into practice in order to decrease depression rate among elderly population at nursing homes. A pilot project was designed that included sample of twelve elderly male clients' age lying between 60 to 80 and were resident of a senior citizen home, Karachi. The data was collected via pre and post intervention direct observations, individualized interview with feedbacks and completion of geriatric depression scale. The data was interpreted by applying t test for two dependent samples ( $\alpha=0.05$ ). The findings revealed that practical implementation of Nightingale's theory aides in preventing and declining depression rates among old age people. It is recommended that proper training related to Geriatric health needs should be provided to the nursing home's staffs. Furthermore, interventions based on Nightingale's principle should be planned and initiated in order to prevent and reduce depression cases and promote healthy aging among elderly population.

*Keywords:* Elderly Population, Depression rate, Nightingale's theory

### 10.24

#### DOES MATERNAL DEPRESSION AFFECT PSYCHOSOCIAL WELLBEING AMONG PRESCHOOLERS?

*Sanober Nadeem, Ghazala Rafique, Yusra Sajid, Seema Lasi  
Human Development Programme, Aga Khan University, Karachi*

*Background:* Epidemiological evidence suggests that mental health problems in children are common and, persistent, hampering their home life and school performance. Few studies have examined the preschoolers' psychosocial wellbeing especially in Pakistan. This study aims to determine the prevalence of emotional and/or behavioral problems among preschoolers and their association with maternal depression.

*Method:* A cross-sectional study was carried out in three districts of Sindh Province. Mothers were interviewed by using a structured questionnaire during house to house survey. Psychosocial wellbeing of 1566 children was assessed on Strength and Difficulty Questionnaire (SDQ). Mother mental health was assessed by using Aga Khan University Anxiety and depression Scale (AKUADS). Multinomial regression analysis was performed using SPSS v. 19.

*Results:* Almost 23% children were rated as abnormal and 23.5% as borderline by their mother on SDQ scale. 21.5% mothers were found depressed on AKUADS. Maternal depression found to be highly significantly associated with childhood behavioral problems (OR for borderline behavioral problems=1.30, CI: 0.96-1.77; OR for abnormal behavior=2.04, CI: 1.53-2.71). The OR did not change significantly when adjusted for child's gender or age or both. There was significant interaction between maternal depression and gender and age of child, in the effect on child behavior.

*Conclusion:* Maternal depression was found to be a significant risk factor for childhood psychosocial wellbeing and behavioral problems. This study identified a need to develop integrated culturally appropriate, evidence based maternal and child mental health counseling and parenting services.

*Keywords:* Psychosocial wellbeing, Preschooler, Maternal Depression

### 10.25

#### RESILIENCE IN OLD AGE: A CONCEPTUAL ANALYSIS

*Sehrish Sadruddin, Nazbano Ahmed Ali  
School of Nursing & Midwifery, Aga Khan University, Karachi*

This case report highlights a case from an old-age home where majority of elderly were found to be depressed and hopeless, one 70years old woman's distinct trait amazed the authors. Her life history revealed that she got married at the age of 15 and after 20years, she delivered 1st child with meningitis. Due to child disease, she had to frequently visit the hospital. When her daughter was 5years old, her husband died and this event led her to be the only caregiver of disabled daughter. In spite of financial instability, she didn't stop her child's treatment; but her daughter died at the age of 10. When she reached at late adulthood, she remarried and started to enjoy satisfactory relationship with her spouse. After spending 5years, she got divorced and shifted to old age home. Even now, with the fact of increasing age and fronting adversity, she still hopes to remarry in-order to spend her end days happily. She is always observed to be positive, helpful, and self-motivated, indicating that she has developed resilience. This paper aims to examine the impact of resilience on mental health of an elderly. In this case, application of "resiliency framework for elderly" denotes the presence of protective factors and positive psychological outcomes such as; positive adaptation, and emotional wellbeing. In conclusion, to strengthen positive psychology, healthcare professionals' role is considered pertinent because resilience can impede at any time if it is not well supported.

*Keywords:* Elderly resilience, positive adaptation, positive psychology

## 10.26 IMPACT OF OCCUPATIONAL THERAPY IN MENTAL HEALTH

*Sonia Surani*  
*School of Nursing & Midwifery, Aga Khan*  
*University, Karachi*

*Introduction:* Occupational therapy is a use of purposeful activity designed to achieve productive outcomes which promote health and prevent disability. It also develops, improve, sustain or restore the highest possible level of independence of any individual.

*Objective:* To appraise occupational therapy as a supportive intervention in a 38 year old patient with schizophrenia and also to evaluate symptomatic improvements in the patient with the help of occupational therapy.

*Method:* This case study was done in a private rehabilitation centre in Karachi Pakistan. The patient was thoroughly monitored and evaluated for the positive impacts of occupational therapy for her symptoms which includes negative thoughts such as paranoia, low mood, isolation from environment and poor concentration span. For this purpose a literature search was conducted related to publications between 2000 and 2013 from different research databases and online books.

*Results:* Occupational therapy helped my patient to gradually over come negative symptoms associated with schizophrenia. Patient's mood and concentration span was enhanced due to different activities like art therapy, pot painting and hand embroidery.

*Conclusion:* This case study concluded that occupational therapy proved to be an essential and core component in the treatment of Schizophrenia.

*Keywords:* Occupational therapy, Mental health, Schizophrenia

## 10.27 PERCEPTIONS OF STAKEHOLDERS REGARDING INTEGRATION OF MENTAL HEALTH INTO PRIMARY HEALTH CARE IN PAKISTAN

*Syed Shahzad Hussain*  
*Community Health Sciences, Aga Khan*  
*University, Karachi*

*Background:* A considerable world population (450 million people) is suffering from some form of mental health (MH) disorder. The gap between individuals who get diagnosed and those who are treated, impose considerable productivity loss to the society. The financial constrains in Low and Middle Income Countries (LMIC) further exaggerates the issue. The prevalence of mental health diseases in Pakistan is comparatively higher in rural areas. There are only 5 mental health hospitals in the country and they are located in urban areas. The World Health Organization (WHO) has also emphasized the integration of mental health in primary health care (PHC). Significantly, some of the LMIC have integrated mental health services with primary health care.

The intent of this study is to inform the policy and implementation level gaps, by exploring the perception of stakeholders for integration of mental health into primary health care.

*Methodology:* An exploratory qualitative study design was used. Using self-developed study guide, in-depth interviews were conducted to collect data from policy decision making and implementation level stakeholders. Purposive sampling was used for selection of participants. Analysis was done using NVivo version 10.

*Findings:* Three major themes were emerged after analysis of the data. These themes include *recognition of importance of MH, barriers to integration and resources required for integration.*

Although there is a general willingness among all stakeholders for integration, however there are some underlying reservations. Lack of awareness, lack of resources & resistance at PHC level were the biggest barriers

*Conclusion:* MH is considered an important component of health by both decision making

and implementation level stakeholders. There are many flaws in the current MH services in Pakistan due to which MH issues are not properly addressed in the country. The stakeholders recommended that MH should be integrated into PHC in order to improve the MH situation, but there is a dire need of strong political commitment, human and financial resources, mass level awareness and strong advocacy. Furthermore, there needs to be modifications in the current PHC setup before MH can be integrated into PHC.

### 10.28 ARE ATRIAL SALVOS ON A 24 HOURS ECG MONITORING A MARKER OF STROKE?

Aamir Hameed Khan, Mukhtabar L. Shah, Sidra Munawwar, Hammad Tanzeem  
Department of Medicine, Aga Khan University,  
Karachi

*Introduction:* Atrial fibrillation (AF) is a common cause of thromboembolic strokes. Atrial ectopy is a trigger of AF both symptomatic and asymptomatic. Holter monitoring (HM) of 24 ECG post strokes does not always reveal AF as it may be episodic. Episodic AF has the same thromboembolic risk as chronic persistent AF.

*Aim:* To see if the frequency of atrial salvos was more in patients after a stroke versus controls.

*Methods:* A retrospective study at the Aga Khan University hospital. All patients referred for HM for stroke work-up between October 2009 and December 2012. Controls were all patients in the same period referred for syncope work-up without a history of palpitations. Established AF patients were excluded.

*Results:* Total patients 123 and 99 controls. Of the stroke patients, 70 were males (57%) and 53 females (43%). Mean age males 58.8 years (range 31 – 80); females 63.5 years (range 35 – 81). Atrial salvos in stroke group: males 17.1%, females 46% (total 31.5%). For the control group 56 males (56.5%) and 43 females (42.5%), mean age males 57.6 years (range 14 – 83), females 52.3 (range 7 – 92). Atrial salvos in

controls: males 10.7%, females 9.3% (total 10%).

*Conclusion:* Atrial salvos were significantly more in the stroke group than the control group and this difference in the stroke group was more stark in the female gender, although the stroke group females were older.

*Keyword:* stroke, atrial salvos, Holter study, syncope

### 10.29 PREGNANCY AND PUERPERIUM RELATED STROKES IN ASIAN WOMEN

<sup>1</sup>Maria Khan, <sup>2</sup>Mohammad Wasay, <sup>3</sup>Bindu Menon, <sup>4</sup>Mohammad Saadatnia, <sup>5</sup>Narayanaswamy Venketasubramanian, <sup>6</sup>Padma Gunaratne, <sup>7</sup>MM Mehndiratta, <sup>8</sup>Alper Dai, <sup>9</sup>Subhash Kaul  
Aga Khan University, Karachi, Pakistan <sup>1,2</sup>, Sri Venkateswara Institute of Medical Sciences, Tirupati, India <sup>3</sup>, Isfahan University of Medical Science, Isfahan, Iran <sup>4</sup>, National Neuroscience Institute, Singapore <sup>5</sup>, The National Hospital of Sri Lanka, Colombo, Sri Lanka <sup>6</sup>, GB Pant Hospital, New Delhi, India <sup>7</sup>, Gaziantep University, Gaziantep, Turkey <sup>8</sup>, Nizam Institute of Medical Sciences, Hyderabad, India <sup>9</sup>

*Background:* Despite an increased risk of stroke in pregnancy and puerperium, the overall incidence of the condition in this population is low. Therefore, there is limited data pertaining to these patients particularly from Asian countries. Our objective was to describe the risk factors and outcomes of 110 pregnancy related ischemic strokes from four Asian countries.

*Methods:* Data was collected by retrospective chart review in most cases, and prospectively in the rest. Inclusion criteria for this sub-analysis was women aged 15-45 years, pregnant or within one month post partum, presenting to the study center with acute ischemic stroke (arterial or venous) confirmed by neuro-imaging. Intracranial hemorrhage other than the ones associated with cerebral venous thrombosis or hemorrhagic infarct were excluded. Risk factors were diagnosed based on already published criteria. Outcomes were

measured using modified Rankin score. Statistical analysis was done using SPSS version 19.

*Results:* 110 women with mean age of 27.94 years presented with pregnancy related ischemic strokes. 58.2% of the strokes occurred post partum and 49.1% were secondary to cerebral venous thrombosis. Venous strokes were significantly more likely to occur post partum compared to arterial strokes ( $p=0.01$ ), to have underlying hypercoagulable state ( $p<0.001$ ), less likely to have traditional stroke risk factors ( $p<0.001$ ), to have hemorrhagic conversion of stroke ( $p<0.001$ ), and to have lesser stroke severity and better functional outcome at 3 months ( $p<0.001$  for each).

*Conclusion:* Cerebral venous thrombosis is a significant contributor to pregnancy related strokes in Asian women. Both traditional and pregnancy specific risk factors should be addressed to control ischemic stroke risk in these women.

### **10.30** CEREBRAL VENOUS SINUS THROMBOSIS: ASSOCIATION WITH PRIMARY VARICELLA ZOSTER INFECTION

*Shaista Anwar Siddiqi, Sadia Nishat,  
Durreshahwar Kanwar, Farheen Ali,  
Muhammad Azeemuddin, Mohammad Wasay  
Department of Medicine and Radiology, Aga  
Khan University, Karachi*

Varicella zoster virus (VZV) has been known to cause cerebral arterial vasculopathy as well as an acquired antibody-mediated coagulopathy associated with purpurafulminans and generalized thrombo-embolism. There is no published report on cerebral venous sinus thrombosis (CVST) associated with primary VZV infection. We hereby report two cases to highlight an unusual presentation of VZV infection i.e. CVST with primary varicella infection. One patient had extensive CVST with co-existent middle cerebral artery involvement as well. Primary VZV infection can be associated with thrombosis of cerebral arteries and venous sinuses.

### **10.31** ACUTE QUADRI-PARESIS DUE TO ACUTE DEMYELINATING POLYNEUROPATHY IN A PATIENT NEWLY DIAGNOSED AS A CASE OF B-CELL LYMPHOMA- AN UNUSUAL PRESENTATION. A CASE REPORT WITH REVIEW OF LITERATURE

*Anjum Akhtar<sup>1</sup>, Sarwar Jamil Siddiqui<sup>2</sup>  
<sup>1</sup>Fellow Stroke, <sup>2</sup>Section of Neurology,  
Department of Medicine, Aga Khan University,  
Karachi*

Although peripheral neuropathies are commonly observed in patients with non-Hodgkin's malignant lymphomas (NHML), Guillain-Barre syndrome is extremely rare in B-cell lymphoma, occurring in less than 0.3% of the cases. We describe a seventy year old patient newly diagnosed as a case of B-cell lymphoma, who developed quadri-paresis. Based on clinical course, neurological examination and EMG findings, GBS as a Para neoplastic disorder was diagnosed in spite of normal cerebrospinal fluid protein content.

*Keywords:* Neuropathies, non-Hodgkin's malignant lymphomas, Guillain-Barre syndrome (GBS)

### **10.32** SLEEP FAINTING: A NEUROCARDIOGENIC PHENOMENON *Ambreen Sonawalla, Aamir Hameed Khan Department of Medicine, Aga Khan University, Karachi*

Fainting is a common clinical presentation. Neurocardiogenic causes are the most common. Upright posture is a prerequisite for neurocardiogenic syncope (NCS). Syncope in the supine position has more sinister causes. There are few case reports about NCS occurring in the supine posture. We describe here a case series of patients who presented with NCS in the supine position. There were 5 patients, 3 males and 2 females, mean age 44.4 years (age range 29 – 67 years). Four patients (80%) also had history of upright syncope. Triggers could only

be found in 1/5 patients. Frequency of syncope was 2 – 5 times. Associated symptoms of sweating, nausea and abdominal pain were present in all, 50% had the urge to defecate as a premonitory or post syncope symptom. The presentation was labored breathing and failure to arouse. In all Head up tilt test (HUTT) was positive and echo showed normal LV function. One patient had an aortic valve replaced. Fifty percent had normal ECG, while one each had pre-excitation, RV outflow tract PVCs and RBBB. There was no postural drop (80%) and in one patient it could not be checked. All patients were prescribed counter-maneuver exercises (CME) and 80% were compliant. Recurrence was noted in 40%. In classic NCS supine position would abort the episode but in sleep syncope the patient is already supine. In one of our patients the legs were folded onto the chest (knee to chest) helped revive the patient. Sleep fainting is a new entity and has to be recognized. A diagnosis can be established with clinical suspicion, preserved LV function without evidence of coronary artery disease, no high risk ECG evidence of pre-excitation, long/short QT syndromes, Brugada syndrome, arrhythmogenic right ventricular dysplasia and a normal neurologic work-up.

*Keywords:* sleep fainting, syncope, neurocardiogenic syncope, vagal symptoms

### 10.33

#### MULTIPLE SCLEROSIS IN PAKISTAN; HISTOCOMPATIBILITY ANTIGEN (HLA) COMPOSITION AND DISABILITY

<sup>1</sup>Mohammad Wasay, <sup>\*</sup>Tariq Moatter, <sup>2</sup>Kauser Mehmood, <sup>3</sup>Muhammad Subhan, <sup>4</sup>Arsalan Ahmed, <sup>5</sup>Mohammad Tariq, <sup>6</sup>Noor Khoso, <sup>7</sup>Naila Shahbaz, <sup>8</sup>Safia Awan, <sup>8</sup>Sten Fredrikson

<sup>1</sup>Section of Neurology, <sup>5</sup>Department of Medicine, <sup>\*</sup>Department of Pathology, Aga Khan University, Karachi, <sup>2</sup>Jinnah Post graduate Medical center, Karachi, <sup>3</sup>Kuwait Teaching hospital, Peshawar Medical College, Peshawar, <sup>4</sup>Shifa International hospital, Islamabad, <sup>5</sup>Pakistan Institute of Medical Sciences, Islamabad, <sup>6</sup>Civil Hospital, Karachi, <sup>7</sup>Saleem Medical complex, Bolan Medical college, Quetta, <sup>8</sup>Karolinska Institute, Stockholm, Sweden

*Background and Objectives:* An association between multiple sclerosis (MS) and histocompatibility antigen (HLA) is well known. This study was conducted to identify prevalence of various haplotypes among our MS patients as compared to control population. We also evaluated a possible correlation between haplotypes and disease severity (EDSS).

*Methods:* Patients with confirmed MS were prospectively enrolled from nine centers in Pakistan from January 2009 to September 2010. HLA alleles were identified using polymerase chain reaction and sequence specific primers (PCR-SSP). Control group comprised of a total of 1000 individuals, representing all major ethnic groups in Pakistan, tested for the distribution of HLA class II DRB1 and DQB1 alleles.

*Results:* One hundred patients were enrolled in study (Male; 40%). Age range was 16-62 years (Mean 32 years). Out of these 23 patients (23%) developed severe disability (EDSS 6 or more) within five years of symptoms onset. Most important factors associated with this progression included primary or secondary progressive course and spinal cord involvement. Almost 50% patients in severe disability group had primary or secondary progressive course while 70% patients in this group had spinal cord involvement. Higher disability had a significant correlation with primary and secondary progressive type of MS (P=0.001) and spinal cord involvement (P=0.03). HLA typing and haplotype analysis of MS patients were compared with controls. There was no statistically significant difference between two groups. There was a statistically significant association between high disability and DQB1\*0203 haplotype (P=0.04). The association between High disability and DRB1 Alleles was non-significant.

*Conclusion:* 23 patients (23%) developed severe disability within five years of symptoms onset. Higher disability had a significant correlation with primary and secondary progressive type of MS (P=0.001) and spinal cord involvement (P=0.03). There was a statistically significant association between high disability (EDSS 6 or more) and DQB1\*0203 haplotype (P=0.04).

*Keywords:* multiple sclerosis, disability, Asia, HLA

### 10.34 HEADACHE TYPES, WORK UP AND ATTITUDES TOWARD TREATMENT AMONG PAKISTANI PATIENTS

*Mohammad Wasay, Abdul Malik, Noor Khoso, Suneel Kumar, Adnan Yousuf, Shaukat Ali*  
Section of Neurology, Department of Medicine,  
Aga Khan University, Karachi, Jinnah Post  
graduate Medical center, Karachi, Bolan  
Medical College, Quetta

**Background:** Headache is one of the most common neurological symptoms as ranked by World Health Organization. Data is scarce regarding headache presentation, types, diagnostic work up and treatment among Pakistani headache patients.

**Objective:** The aim of this study was to characterize headache patients with regard to classification, presentation and attitudes toward treatment among Pakistani patients.

**Methods:** Prospective data collection at three centers in Pakistan during 2009 and 2010. Headache classification was based on International classification of headache disorders (ICHD-2). Diagnosis was confirmed by a neurologist trained in headache diagnosis and treatment. Data was collected on a pre specified questionnaire and included demographics, pattern and presentation of headache, diagnostic work up and treatment patterns among patients.

**Results:** A total of 970 patients included in study. Mean age of patients was  $33 \pm 14$  years. Out of these 683(70%) were women. Duration of headache was less than one month in 63(6%), 1-3 months in 61(6%), 4-6 months in 73(7%), 7-12 months in 150(15%), 1-10 years in 392 (39%), 11-20 years in 75(7.7%) and more than 20 years in 35(3.6%) patients. A worsening of headache symptoms within last one year was reported in 289(29%) patients. Frequency of headaches as reported by patients were constant (279; 29%), daily (221; 23%), 2-3 times a week (253; 26%) and 3-4 times a month (124; 13%) while 93(10%) had infrequent headache. 289 (29%) were extremely worried about their headache, 38(3.9%) believed that they had a brain tumor, 286 (29%) related it to stress. During one year period, 267 (27%) saw only one

doctor, 264(27%) consulted two doctors and 409 (43%) were seen by three or more doctors for their headache. 414 (93%) patients had a close family member with history of headache. 98 (10%) visited a hospital emergency room for severe headache. A CT /MRI scan was done in 34(3.5%) patients. All scans were reported normal. Migraine; 487 (52%) was most common type with 39 (4%) were Migraine with aura, 12 (1.5%) were migraine with complications while 436 (45%) were Migraine without aura. Other common headache types included Tension type headache; 350(37%), Mixed Migraine and TTH; 58(6%), Cluster headache; 8(1%). Only 13 (1.5%) patients were receiving Triptans, 118 (13%) were taking migraine prophylaxis, 167 (18%) were taking injectables for recurrent severe headaches while rest were taking Paracetamol or various non steroidal analgesics.

**Conclusion:** Migraine and tension type headaches are most common headache types. More than 52% patients had daily or constant headache. Majority of patients with Migraine were not receiving Triptans or migraine prophylaxis.

**Keywords:** Headache, workup, diagnostic

# **Miscellaneous Abstracts**



## 11.2 IMPACT OF A PREDEFINED HOSPITAL MASS CASUALTY RESPONSE PLAN IN A LIMITED RESOURCE HEALTHCARE SETTING

*Adil Aijaz Shah, Adil Hussain Haider, Raza  
Hasnain Sayyed, Zain Ghani Hashmi, Amber  
Bawa, Zia-ur-Rehman, Syed Nabeel Zafar,  
Hasnain Zafar  
Department of Surgery, Aga Khan University,  
Karachi*

Pre-hospital triage is an intricate part of any mass-casualty response system. However in resource-limited settings lacking such systems, it is unknown if hospital based disaster response efforts are beneficial. This study describes in-hospital disaster response management & patient outcomes following a mass casualty incident involving 200 victims in Karachi, Pakistan. This was a single-center retrospective review of bombing victims presenting to the Aga Khan University Hospital after a high energy car bomb leveled a residential plaza. Descriptive analysis was utilized to present demographic variables and physical injuries. A disaster plan was initiated. Relevant medical and surgical specialties were mobilized to the ER awaiting a massive influx of patients. ER waiting-room served as the triage area. Operating-rooms, ICU and blood bank were alerted. 70 patients presented to the ER. Most victims(88%) were brought directly without prehospital triage or resuscitation. Four were pronounced dead on arrival. The mean age of victims was 27( $\pm$ 14) years with a male preponderance(78%). Penetrating shrapnel injury was the most common mechanism of injury(71%). Most had a systolic blood pressure(sbp) $>$ 90, a mean sbp of 120.3( $\pm$ 14.8), mean pulse of 90.2( $\pm$ 21.6) and full GCS. Extremities were the most common body region involved(64%) with Orthopedics being consulted most frequently. Surgery was performed on 36 patients, including 4 damage control surgeries. All patients survived. This overwhelming single mass-casualty incident was met with a swift multidisciplinary response. In countries with no prehospital triage system, having a preexisting disaster plan with

predefined interdisciplinary responsibilities can streamline in-hospital management of casualties.

Keywords:  
Trauma, Bombing, Pakistan

## 11.3 IMPACT OF TEACHING METHODOLOGY FOR UGME & PGME ON PATIENT SATISFACTION IN PRIVATE HEALTHCARE SECTOR

*Akbar Lakhani, Sadia Imam  
Aga Khan University, Karachi*

*Background and Introduction:* Doctors have much involvement in teaching of undergraduate and post graduate medical education in university hospital. They are using many techniques in teaching like class room teaching, small group discussion, particle approaches and many more. Faculty evaluates students and student evaluates faculty according to standard of teaching. It is taken as feedback of teaching in UGME and PGME perspective but it is also include in performance management.

*Methods and Procedures:* The targeted populations are doctors from the 6 University Hospitals and sample size is 87 which are calculated from Non – probability Purposive sampling. Close ended Questionnaire is use to collect primary data. Chai Square data analysis technique is used to calculate associations and evaluate hypothesis on bases of P value.

*Results and Findings:* Level of satisfaction of consultant doctors toward teaching techniques was significant and highly impact on Patient satisfaction in private health care sector and value of  $\mu$  is 4. According to the observations through primary sources, there is a strong association between consultants and feedback from students in university hospital.( $p=0.003$ ) and positive association is highlight in result that reflect to updating them self is more effective phenomena to teach and answering questions during discussion with students of UGME and PGME. Significant value of association is  $p=0.02$  and quality of question and case based scenarios are impact to build mind set of student

to explore and significant value of association  $p=0.009$ .

*Conclusion:* Organization should focus on doctors updating knowledge and attractive teaching methodology for medical teaching in UGME and PGME and more toward practical knowledge with hands on strategy for using equipment and understanding of procedure but doctor will not supposed to leave group of students for working in real environment. Enhancing the new technique has to be implemented in the PGME and UGME education methodology to build the better understanding.

*Keywords:* Teaching Methodology, Consultants, Research

#### 11.4

##### A STUDY ON CONSULTANT DOCTORS; RELATIONSHIP TO UNIVERSITY HOSPITAL IN PRIVATE HEALTH CARE SECTOR

*Akbar Lakhani, Sadia Imam  
Aga Khan University, Karachi*

*Introduction & Objective:* Doctors are the main source to build relationship between hospital and patients. They are working in a multiple responsibility which includes teaching or facilitating and clinical consultant. Every individual having certain goals to grow in career according to field and organization also have goals which they have to achieve. Equal balances in work have to be maintaining with good environment.

*Methods:* Targeted populations are doctors from the 6 University Hospitals and sample size is 87 which are calculated from Non – probability Purposive sampling. Close ended Questionnaire have a 5 point likert scale is use to collect the primary data. Hypothesis made to find out association between dependent and independent variable. Chai Square data analysis technique is used to calculate associations and evaluate hypothesis on bases of P value.

*Results and Findings:* Level of satisfaction of doctors toward association is significant and

value of  $\mu$  is 4. Through the observation, there is a strong association between consultants and doing research in university hospital and Significant value of association  $p=0.002$ . Furthermore, positive association is highlight in result that work life balance relation with pay scale and significant value of association  $p=0.005$  and facility allowance which is significantly highly associated  $p=0.012$  to the continuation that work environment ( $p=0.081$ ) and helping staff ( $p=0.096$ ) are also play a vital role in consultants' satisfaction.

*Conclusion and Recommendations:* Organization should focus on their facilities which are very essential for working and to promote research, for making their better outcome. Opportunity to grow at individual level should be parallel to organizational objectives. Proper bonding with patients' needs skilled and trained staffs.

*Keywords:* University Hospital, Consultants, Research

#### 11.6

##### THE ROLE OF DAYCARE CENTERS IN CHILDREN'S LEARNING AND DEVELOPMENT, DURING EARLY YEARS OF LIFE: A QUALITATIVE PERSPECTIVE

*Amber Shahzad, Sanober Nadeem  
Department of Human Resources and Human  
Development Programme, Aga Khan University,  
Karachi*

*Background:* Mothers play a vital role in child care and development; however there is significant change in family structure, especially, the role of women in the family, in the last two decades. In Urban areas majority of women are working outside homes, child care centers have become one of the most integral need for working mothers. A qualitative exploratory design was used to explore the perception of mothers whose children have been exposed to the non-parental care, in a daycare centre located in a tertiary care hospital.  
*Methodology:* Total 10 In-depth Interviews were conducted with mothers, to explore their

children's experiences regarding their cognitive, socio-emotional, language and physical development. Data was transcribed as verbatim and analyzed through N Vivo version 2 for thematic coding.

*Results:* The major themes which linked with the role of day care center in child learning and development included, positive influence of day care on children holistic development, child adjustment, development of eating habits, learning of socialization skills, milestones achievements and school readiness. The data revealed positive feedback from mothers, regarding children's learning and development at the daycare centre, which also helped the children in getting adjusted easily in the school environment later on.

*Conclusion:* Quality daycare centers can play vital role to enhance optimum development of children of working mothers.

*Keywords:* Day Care, Early Childhood, Qualitative

### 11.10

#### COMPARISON OF PLATELET COUNTS BY IMPEDANCE AND OPTICAL METHODS ON SYSMEX XE 5000 AND THEIR CORRELATION

*Anila Zafar, Afsheen Ali, Hassan Hayat, Natasha Ali*

*Department of Pathology & Microbiology, Aga Khan University, Karachi*

*Background:* Clinical management of platelet disorders depends on accurate platelet counts. We evaluated a new analytical approach for platelet counting based on optical platelet counts with the routinely used impedance counting. Mean platelet volume describes the average size of platelets in blood. The impedance method is based only on the estimation of volume of platelets. An additional method, fluorescence optical platelets can effectively discriminate platelets from other particles based on the distinctive optical properties of platelets.

*Objective:* To compare the results of platelet count by impedance and optical method on

Sysmex XE 5000 and to study their correlation with MPV.

*Materials & Methods:* The study was conducted in the clinical laboratory, section of Haematology of The Aga Khan University. Duration of study was 1st-30th September 2013. Whole blood samples for blood count analysis were collected in to EDTA anticoagulated tubes and analyzed on Sysmex XE 5000.

*Results:* were analyzed using SPSS. Results We analyzed n=120 consecutive samples in the study period. The MPV ranged from 12.0 – 14.9fl. There were n=55 males and n=65 females. The results of p-value showed there is no correlation of MPV and platelet count and the analyzer gives almost equal count of platelet by impedance and optical method in cases with increased MPV.

*Conclusion:* There is no significant difference between platelet count by impedance and optical method in cases with increased MPV on Sysmex XE 5000. In cases of abnormal histogram when the analyzer fails to give a correct platelet estimate by impedance method, fluorescence measurement

*Keywords:* Impedance counting, optical method, platelet count.

### 11.17

#### MEASURING LIPID CONTENT IN CHEESE

*Azaina Aijaz, Saroshtahar Sulaiman, Reema Asif Qasim*

*School of Nursing & Midwifery, Aga Khan University, Karachi*

*Introduction:* Cheese is a good source of protein, calcium and phosphorous, sodium and puts a positive impact on our health such as on maintenance of bone strength, prevention of tooth decay, treatment of osteoporosis by fulfilling the requirement of important nutrients including vitamins and minerals. However, lipid content in cheese can be harmful to health if it is present in large quantity. Therefore knowing the lipid content in cheese is helpful to decide which cheese should be consumed. A lab experiment was carried out in science lab of The Aga Khan

University School of Nursing & Midwifery (AKUSONAM) to analyze the fat content of Mozzarella and cheddar cheese.

*Method:* The two day experimental plan was carried out to find out the percentage of lipid in two types of cheese i.e. mozzarella and cheddar and followed by a lipid confirmatory test. Twenty readings (i.e. ten for each cheese) were obtained to develop authenticity in the results. *Results:* It is found that mozzarella cheese had lesser fat content than cheddar cheese as evidenced by the percentage of lipid extraction of mozzarella cheese that was 25 %. On the other hand, percentage of extracted lipid in cheddar cheese was 30.4 %. Moreover, the confirmatory tests for lipids also gave the positive results.

*Conclusion:* It was concluded that the fat content in Mozzarella cheese is less than Cheddar cheese. Hence, our established hypothesis was proved.

*Keywords:* Mozzarella Cheese, Cheddar Cheese, Percent Lipid extraction

### 11.19

Antimicrobial resistance patterns in ESBL isolates at a private tertiary hospital, Kenya

*Daniel Maina, Paul Makau*  
*Department of Pathology & Microbiology, Aga Khan University, Karachi*

Extended-Spectrum  $\beta$ -Lactamase (ESBL) producing Enterobacteriaceae have become widespread in hospitals and are increasing in community settings where they cause a variety of infections. In addition to hydrolyzing most beta-lactam agents, bacteria harboring these enzymes display resistance to other unrelated antimicrobial agents and thus often pose a therapeutic dilemma. Though these resistance patterns have been studied elsewhere within Africa, such data from hospitals in Kenya are scanty. We therefore undertook to determine these patterns at the Aga Khan University hospital by studying multidrug resistant *Escherichia coli* and *Klebsiella pneumoniae* isolates from patients' samples. Findings: A

total of 159 isolates (109 *E. coli* and 50 *K. pneumoniae*) were confirmed as ESBL producers and tested against eighteen antimicrobials. The proportion of resistant isolates was high (>80%) for the antimicrobials tested with the exception of the carbapenems (<1%), nitrofurantoin (23%) and gentamicin (63%). *Klebsiella pneumoniae* had a higher proportion of isolates resistant to ceftazidime, gentamicin and nitrofurantoin ( $P < 0.05$ ) than *E. coli* which had a higher proportion of isolates resistant to ciprofloxacin, levofloxacin and tetracycline ( $P < 0.05$ ). Conclusions: In our study, antimicrobial coresistance is common in ESBL producers; however resistance to carbapenems is low and these drugs would be the appropriate empiric therapy for serious or life threatening systemic infections. Nitrofurantoin retains good activity among the multidrug resistant isolates and can be the drug of choice for non-complicated urinary tract infections due to ESBL producing *E. coli*.

*Keywords:* Antibiotics, ESBLs, Resistance

### 11.20

AUDIENCE PERCEPTION OF SEPSIS AT THE INTERNATIONAL SEPSIS CONFERENCE, AGA KHAN UNIVERSITY

*Madiha Hashmi, Ali bin Sarwar Zubairi, Anwarul Haq*  
*Departments of Anaesthesiology, Medicine and Paediatrics & Child Health, Aga Khan University, Karachi*

*Introduction:* Globally, 20 to 30 million patients are estimated to be afflicted with sepsis every year, and it claims more lives than bowel and breast cancer combined. Yet it is under-recognized and poorly understood by patients and healthcare providers. If sepsis is diagnosed early and appropriately managed by the healthcare physicians in the community, the burden on hospitals and scarce intensive care resources to treat the complications of sepsis will be reduced. *Objective:* To find out the participant's understanding of the term "Sepsis" *Methodology:* The survey was conducted at the

International Sepsis Conference held on 21st September, 2013 at the Aga Khan University Auditorium to commemorate 2nd world sepsis day. The participants were requested to describe in one sentence what they understood from the term Sepsis. The responses were categorized into 10 groups.

**Results:** 180 participants completed the survey form. 52% of the participants were doctors, 24% medical students, 22% paramedical staff, and 2% non-doctors. 30% described sepsis as an infection with end organ damage, 21% as an infection with systemic manifestations, 18% as a systemic inflammatory response caused by a documented source of infection, 13% as an infection spreading to the whole body. Less frequent responses included shock (5%), Infection (3%), SIRS (2%), severe disease that kills (2%) and others (6%). **Conclusions:** At the end of this awareness activity 82% of the participants described sepsis appropriately.

**Keywords:** Sepsis, Awareness, Survey

## 11.22

### ASSOCIATION OF OBESITY AND OCCUPATIONAL FACTORS WITH INFERTILITY IN PAKISTANI MEN

*Nida Zahid, Sarah Saleem, Iqbal Azam, Tariq Moatter*

*Departments of Community Health Sciences and Pathology & Microbiology, Aga Khan University*

**Introduction:** Male infertility has a wide range of causes ranging from genetic, environmental, biological, behavioral to lifestyle risk factors. In Pakistan the burden of infertility is 21% of which 35% is contributed by the male factor. Studies have shown the association of modifiable risk factors with male infertility but this information is lacking from Pakistani context.

**Objective:** The objective of the study was to determine the association of obesity and occupational factors with infertility in Pakistani men seeking treatment at an infertility centre in Karachi-Pakistan.

**Methods:** We conducted a case control study enrolling 201 infertile men (cases) and 200 fertile men (controls) from Australian Concept Infertility Medical Centre (ACIMC).

**Results:** Infertile men as compared to the fertile men had a higher mean BMI, were socioeconomically better-off with monthly income of >25000PKR (48.6% vs 32.0%), had a higher educational status of intermediate or above (55.7% vs 35.5%) and had previous medical conditions increasing the risk of infertility (20% vs 8.5%). We concluded that with every 1 kg/m<sup>2</sup> increase in BMI the odds of being infertile was 6% higher as compared to being fertile (aOR=1.06; 95% CI=1.01, 1.11). Moreover infertile men had higher odds of being exposed to high risk occupations for >2 hours/day as compared to fertile men (aOR=1.05; 95% CI=0.69, 1.59).

**Conclusion & Recommendations:** This study indicates that obesity is associated with male infertility. Obesity is an emerging public health problem in Pakistan which also contributes to causing infertility in men. Therefore awareness can be raised through physicians and public health messages.

**Keywords:** Male infertility, Obesity, Occupational factors

## 11.23

### MULTILEVEL MODELING OF BINARY OUTCOME IN THREE LEVEL COMPLEX HEALTH SURVEY DATA

*Shafquat Rozi, Sadia Mahmud, Gillian Lancaster*

*Departments of Community Health Sciences and Paediatrics & Child Health, Aga Khan University, Karachi*

**Introduction:** Complex survey designs often involve unequal selection probabilities of cluster or people within cluster. When estimating models for complex survey data, sampling weights are incorporated in the likelihood, producing pseudo likelihood.

**Objectives:** 1.To investigate the determinants of health seeking behavior in Pakistan we suggest a

multilevel pseudo maximum likelihood (MPML) approach to estimates model parameters for the complex survey design. 2.To conduct a simulation study based on MPML for three level data to assess the impact of varying prevalence of outcome and ICC on the accuracy of the estimates of the parameters and their corresponding variance components.

*Methods:* We explored the multilevel modeling approach with sampling weights for analysis of the complex survey design. In the weighted analysis we implemented two weight scaling methods for the three level data.

*Results:* The results using the three level NHSP data showed that the findings of the scaled weighted analysis generally agree with the un-weighted analysis. The simulation results showed that the scaled weighted estimators performed satisfactorily in all scenarios of our simulations for each scaling method (1 & 2) using three level data with a binary outcome.

*Conclusion:* Though we observed some divergence in the estimates of slope and variance between un-weighted and scaled weighted analysis but divergences are not marked. This may have occurred because of larger cluster size and relatively small ICC. Based on our simulation results we can conclude that both the scaling methods are effective for three level complex survey designs.

*Keywords:* Multilevel modeling, Binary outcome, Complex survey

11.24

#### ADIPOCYTES INHIBITS GENERATION OF EARLY B CELL PROGENITORS FROM CLP TO PRE-PROB CELL STAGE

*Fareena A. Bilwani, Katherine L. Knight  
Department of Biological & Biomedical  
Sciences, Aga Khan University, Karachi*

Like in humans, B lymphopoiesis declines in rabbits with age, and we previously showed that adult rabbit bone marrow (BM) stroma is unable to support generation of proB cells. We investigated changes in BM stroma of adult rabbits and found an increase in adipocytes

similar to that in aged humans. We also found that both rabbit and human adipocytes secrete a soluble factor that inhibits B lymphopoiesis. We investigated the stage at which the inhibitory molecule blocks B lymphopoiesis by co-culturing cord blood-derived human HSCs and OP9 stromal cells with rabbit adipocyte-conditioned media (CM) and found that the inhibitory factor does not impair the generation of common lymphoid progenitors (CLP) but inhibits generation of pre-proB cells. We tested if the inhibitory molecule acts via stromal cells by treating OP9 stromal cells with adipocyte CM and then co-culturing them with rabbit BM mononuclear cells (MNCs). The capacity of pre-treated OP9 stromal cells to support B lymphopoiesis was unchanged. In contrast, treatment of BM MNCs of adult rabbit with the adipocyte CM and subsequent co-culture with OP9 stromal cells without adipocyte CM, showed that pre-treated cells were unable to differentiate into proB cells. We conclude that the adipocyte-derived soluble factor acts directly on early lymphoid precursors to inhibit B lymphopoiesis from the CLP to pre-proB cell stage. Such inhibition likely contributes to the decline of B lymphopoiesis in aged rabbits and humans.

*Keywords:* Aging, Adipocytes, B Lymphopoiesis

11.25

#### EFFECT OF AGE-RELATED CHANGES IN THE BONE MARROW ENVIRONMENT ON B LYMPHOPOIESIS

*Fareena A. Bilwani, Katherine L. Knight  
Department of Biological & Biomedical  
Sciences, Aga Khan University, Karachi*

B lymphopoiesis arrests in rabbits by 16 wk-of-age, and data suggest that the arrest is due to age-related changes in the bone marrow (BM) environment. We determined the number of BM stromal cell progenitors (BMSCPs) using limiting dilution analysis and found an 8-10 fold decrease in the number of BMSCPs by 8 wk-of-age. This decrease in BMSCPs is reflective of

the age-related decline in proB and preB cell progenitors in BM. We tested the capability of BMSCPs to differentiate into adipocytes or osteoblasts in vitro, and found that BMSCPs from 2-8 wk-old rabbits displayed a propensity to form osteoblastic colonies while BMSCPs of rabbits over 8 wk-of-age readily formed adipocytic colonies. In addition, histology of BM tissue sections embedded in paraffin revealed large amounts of adipose tissue in BM of rabbits 8 wk-of-age or older compared to rabbits of less than 8 wk-of-age. Using a transwell co-culture system we found that adipocytes secrete a soluble factor(s) that inhibits production of proB cells. We conclude that the decline in B lymphopoiesis of rabbits with age is due both to a decrease in the number of BMSCPs and also to the preferential differentiation of BMSCPs into adipocytes which in turn, secrete a molecule that inhibits B lymphopoiesis.

*Keywords:* Aging, Adipocytes, B lymphopoiesis

#### 11.27

### EVALUATION OF ANALGESIC EFFICACY OF KETAMINE IN REDUCING PROPOFOL INDUCED PAIN IN COMPARISON TO LIDOCAINE

*Muhammad Zubair, Samina Ismail  
Department of Anaesthesiology, Aga Khan  
University, Karachi*

Both ketamine and lignocaine, when mixed with propofol has shown decrease in the propofol induced injection pain due to pH changes of propofol mixture. The aim of our study was to compare the efficacy of ketamine with lignocaine when added to the propofol in reducing injection pain. In the ketamine group (n=100; Group K) patient received ketamine 25mg diluted in 2ml in 0.09 NaCl, mixed with propofol. In the lignocaine group (n=100, group L) patient received 2ml of 0.1% lignocaine mixed with propofol. Pain was assessed with a four point scale: 0=no pain, 1=mild pain, 2=moderate pain, 3=severe pain at the time of propofol injection. Our study showed an overall

reduction in the incidence of pain in both groups. In ketamine group 23% (n=11) of patient and in lidocaine group 28 % (n=13) of patients reported mild to moderate pain. Although there was no statistically significant difference between the two groups, the results suggests both ketamine and lidocaine when mixed with propofol are effective in decreasing the incidence of pain from propofol injection and ketamine mixed with propofol can be used as alternative for prevention of propofol induced pain.

*Keywords:* Propofol, pain on injection, intravenous injection, lidocaine, ketamine

#### 11.28

### BLOOD TRANSFUSION PRACTICES IN PATIENTS HAVING CAESAREAN SECTION:

*Samina Ismail, Faraz Shafiq, Sobia Khan,  
Safia.Z Siddiqui, M. Ishaq  
Department of Anaesthesiology, Aga Khan  
University, Karachi and Dow Medical College  
& Civil Hospital, Karachi*

*Background:* Increasing awareness of blood transfusion risk has prompted examination of red cell transfusion practice in obstetrics. We performed a prospective audit of blood transfusion practices in patients undergoing caesarean delivery at three hospitals in Pakistan. *Methods:* 3483 caesarean deliveries in three hospitals were audited. Patient demographics, ordering physicians, consent, association of obstetric disease with transfusion, estimated allowable blood loss, calculated blood loss, pre and post discharge haemoglobin, transfusion reactions and indications for blood transfusion were collected on an audit form.

*Results:* 397 patients received blood transfusion. The highest transfusion rate (16%) occurred in the public sector tertiary care hospital, as compared to 5% in two private sector hospitals. Emergency caesarean delivery and multiparity were associated with blood transfusion ( $p < 0.05\%$ ). More emergency caesarean sections were performed in the public than the private

sector (72% vs. 13 %), and had more multiparous patients (65% vs. 17%). Attending physicians took the decision for transfusion in 98% of cases. In 343 (86%) patients blood transfusion was given even if haemoglobin >7g/dL , and this occurred most frequently in the public hospital (67%, n=268). There was no method of documenting the indication or consent for transfusion in any of the hospitals. *Conclusion:* Blood transfusion was prescribed more readily in the public hospital. Identification of a transfusion trigger, and the development of institutional guidelines to reduce unnecessary transfusion are required.

*Keywords:* Caesarean section, red cell transfusion, blood transfusion practices; public sector hospital; private sector hospitals.

### 11.29

AN OBSERVATIONAL STUDY ON PATIENTS RECEIVING LABOUR EPIDURAL IN TERMS OF: MODE OF DELIVERY AND UTILIZATION OF EPIDURAL FOR PROVIDING ANAESTHESIA FOR CAESAREAN SECTION.

*Samina Ismail, Shakaib Chughtai, Alia Hussain  
Department of Anaesthesiology, Aga Khan  
University, Karachi*

The aim of our study was to see if there is an increase incidence of caesarean section (CS) in patients receiving epidural in our set up and what are the risk factors for failed conversion for CS anaesthesia in these patients. We did a prospective survey of 18 months from January 2011 to June 2012 of all patients who had delivered in the labour room suit of Aga Khan University. Data included patients demographics, cervical dilation at the time of epidural catheter, effectiveness of labour epidural, mode of delivery and technique of anaesthesia for CS. During the study CS rate was 31.2% and labour epidural rate was 13.4%. No significant difference between the rate of CS between patients receiving epidural and those who did not opt for epidural (28% vs 31.5%).

However the rate of assisted delivery either in the form of forceps or vacuum was almost double (12% vs 5.5%). There was a statistically significant difference ( p value > 0.001) in patients having inadequate pain relief with labour epidural receive general anaesthesia for CS as compared to patients having effective epidural during the course of labour. In conclusion we did find an increase risk of CS with epidural and the most common reason for failure to extend epidural was ineffective labour epidural and emergency situations.

*Keywords:* Rate of CS, epidural analgesia., labour epidural

### 11.30

CRITICAL INCIDENT MONITORING IN PEDIATRIC PATIENTS

*Shemila Abbasi, Sobia Khan, Fauzia Anis Khan,  
Department of Anaesthesiology, Aga Khan  
University, Karachi*

*Background:* A critical Incident is defined as an incident that could be harmful or potentially harmful to a patient during anesthetic management. It is now an established method of improving safety in anesthesia (1) .The department of Anesthesiology at Aga Khan University hospital has a Critical Incident reporting mechanism in place since 1996.(2) *Objective:* To determine the frequency of pediatric critical incidents and to find out factors which contribute to adverse events in children undergoing general anesthesia.

*Methodology:* We looked at all the critical incident records during the period of January 2001 until December 2011. Incidents related to pediatric population from neonatal period till age of 12 years were selected. The forms were examined and analyzed by two independent consultant anesthesiologists.

*Results:* During this period 330 critical incidents were reported which involved pediatric population. Of these 330 incidents. 48% of the reported incidents occurred at induction of anesthesia and mostly involved the respiratory system. 14.5 % incidents were related to



equipment and 13.3% to drug errors. In majority (75%) of events human error was the main contributing factor.

*Conclusion:* We conclude that Critical Incident Analysis is an easy and low cost tool which can help to identify various contributing factors leading to adverse events in the pediatric population during the perioperative period. This method can also help to formulate various protocols/guidelines and improve the safety standards in a developing country.

*Keywords:* Critical Incidents, Paediatric, Teaching Hospital

### 11.31

#### RELATIONSHIP OF BONE TURNOVER MARKERS WITH BONE MINERAL DENSITY IN POSTMENOPAUSAL PAKISTANI FEMALES

*Syed Talha Naeem, Aysha Habib Khan, Riffat Hussain, Farooq Ghani*  
*Departments of Pathology & Microbiology and Radiology, Aga Khan University, Karachi*

*Methods:* In this cross-sectional study, 203 postmenopausal females up to 60 years of age, with menopause  $\geq 1$  year duration, were evaluated for BMD with DXA after informed consent. Patients with clinical history of any disorder or medications affecting bone turnover were excluded. Bone turnover was assessed with Osteocalcin and  $\beta$ -CTx. Data was analyzed by SPSS version 19. *Results:* Mean age of the participants was  $54 \pm 4.66$  years with a mean BMI of  $28.7 \pm 5.5 \text{ kg/m}^2$ . Mean age of the menopause was  $46.68 \pm 1.0$  years and the mean duration of menopause  $7.34 \pm 4.17$  in the study participants. Mean  $\beta$ -CTx ( $0.28 \pm 0.24 \text{ ng/ml}$ ) and osteocalcin ( $21.5 \pm 10.6 \text{ ng/ml}$ ) levels were within the normal reference range. Subjects were grouped into normal (26.6%), osteopenic (44.8%) and osteoporotic (28.6%) based on the t-scores. Serum levels of Osteocalcin and  $\beta$ -CTx between normal, osteopenic and osteoporotic groups were not significantly different.  $\beta$ -CTx was negatively and significantly associated with only lumber spine

BMD ( $r = -0.13$ ,  $p=0.04$ ). Positive association ( $<0.0001$ ) was noted between both markers in normal, osteopenic and osteoporotic females. However there was no association of these markers with BMD in the 3 groups. Multivariate linear regression showed a positive and significant effect of BMI on BMD ( $\beta = 0.332$ ,  $p= <0.0001$ ).  $\beta$ -CTx had negative but significant effect on BMD ( $\beta = -0.155$ ,  $p= 0.018$ ) of postmenopausal women.

*Conclusion:* Association between baseline levels of BTM and rate of bone loss is variable, depending on bone site.  $\beta$ -CTX may be used in the assessment of postmenopausal osteoporotic patients but the role of osteocalcin in postmenopausal osteoporosis is uncertain.

*Keywords:* Bone Turnover Markers, Bone Mineral Density, Postmenopausal

### 11.32

#### PERIOPERATIVE ADVERSE NEUROLOGICAL EVENTS ASSOCIATED WITH ANAESTHETIC MANAGEMENT. A REVIEW OF CASES AT A TERTIARY CARE CENTER OF A DEVELOPING COUNTRY.

*Sobia Khan, Fauzia Anis Khan, Shemila Abbasi*  
*Department of Anaesthesiology, Aga Khan University, Karachi*

*Objectives:* To analyze the associated and causative factors behind adverse neurological events occurring during or immediately following anesthesia within 48 hours. *Methodology:* We conducted non-interventional retrospective study over 3 month period at The Aga Khan University Hospital Karachi after obtaining institutional ERC exemption. All the Morbidity and Mortality forms were retrieved from the departmental record between the period 1993-2012. Two kinds of form were reviewed, one is the M&M summary form which is filled by the primary anesthetist and the other is a M&M review form filled by the two reviewing faculty after the cases discussion in departmental M&M meeting. These forms bear details of pre-anesthesia assessment, anesthesia management

and the morbidity. Further details were retrieved from the patients file where available.

**Results:** 1. There were three cases in which meningitis/meningism was diagnosed following central neuraxial blockade. 2. Three patients developed post-dural puncture headache after combined spinal epidural anaesthesia for labor analgesia. 3. Postoperative seizures secondary to hyperthermia in two infants. 4. Postoperative stroke in six cases, two were secondary to direct damage to carotid artery during central venous cannulation. 5. Postoperative cord/plexus/nerve injury in seven cases attributed to the positioning under anesthesia. 6. Postoperative vocal cord injury in five cases secondary to direct or indirect result of airway management. 7. Postoperative hearing loss, intraoperative sub-choroidal hemorrhage leading to partial vision loss and delayed awakening were observed.

**Conclusion:** Most of the neurological morbidities were avoidable. We should aim to prevent such events by adhering to the established standards of care.

**Keywords:** Anaesthesia, neurological morbidity, neurological adverse events

### 11.33

#### IMPACT OF MEASURES TAKEN TO IMPROVE SAFETY AWARENESS AMONG BLOOD BANK AND COAGULATION STAFF.

*Fahmida Jan Muhammad, Farheen Kareem, Bushra Moiz  
Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Background:** Safety is everyone's responsibility; it is the duty of every staff whilst at work to take responsive care for the health and safety of himself/herself and of other persons who may be affected by his/her acts or omissions at work.  
**Objective:** To assess the impact of measures taken to improve Safety awareness among Blood Bank and Coagulation staff.

**Materials and Methods:** An audit was conducted at Aga Khan University Hospital, Karachi in April 2012. Surprise MCQ test was conducted

for Blood Bank and coagulation staff to assess the level of awareness regarding general safety measures to comply with JCIA and CAP accreditation. Total number of participants, their designation, shift, marks and average percentages obtained were recorded. Based on the results, education sessions covering wide range of topics related to general safety were conducted. A spill management drill was also conducted. Following education sessions, a post test with a similar pattern was done to assess safety awareness.

**Results:** In the initial test conducted in April 2012, the average percentage acquired by the participants was 82%. The average percentage acquired by the morning staff was 86% while it was 79% for the evening/ night staff. Following education sessions, in the subsequent test given in November 2012, the participants acquired an average of 97%. Evening/ night shift staff acquired 94% and morning staff 99%. Follow up tests revealed an average percentage of  $\geq 95$  for all participants.

**Conclusion:** Education significantly improved the level of knowledge regarding safety measures needed at workplace among all staff members.

**Keywords:** Safety, Education, Assessment

### 11.34

#### CORRELATION OF SERUM CHEMERIN AND FERRITIN WITH BODY FAT

*Faiza Alam, Najeeha Talat Iqbal, Aly Zaheer Pathan, Zoya Butt, Nimrah Bader, Sheraz Hussain, Syeda Sadia Fatima  
Departments of Biological & Biomedical Sciences, Paediatrics & Child Health and Medical College, Aga Khan University, Karachi*

**Objective:** Excess body fat accumulation may cause serious health problems. Chemerin, secreted from white adipose tissue, influences the secretion of other acute phase reactant proteins like ferritin. These do not only cause adipose tissue inflammation, but also play a significant role in developing metabolic disturbances. This study aims to compare and

correlate the levels of Ferritin & Chemerin in individuals with different body fat (BF) and BMI.

**Methodology:** Healthy volunteers (n=148) were recruited in a cross sectional study design. Fasting blood samples were analyzed for Chemerin & Ferritin. BF was measured by Bio-Electrical Impedance analysis (BIA) and BMI was calculated by Quetlet's index. They were further classified in to miscellaneous groups: BF1 (n=44 ;  $\leq 20.9\%$ ), BF2 (n=104;  $\geq 21\%$ ) and BMI I (n=42; BMI 18-22.9), BMI II (n=46; BMI 23-25.9) and BMI III (n= 60 ; BMI  $>26$ ) according to South Asian population criteria. **Results:** Both serum Chemerin and Ferritin level was significantly elevated in BMI group III compared to I (p=0.001; MWU) (p<0.001; MWU) respectively. Similar finding was observed between BMI group III and II for Chemerin (p=<0.031; MWU) & Ferritin (p=0.025; MWU). Furthermore, a significant positive correlations were found between BF II with Ferritin (r=0.429; p=0.000) and Chemerin (r0.307=; p=0.008). Similar positive correlation was also found between BMI III with Ferritin (r=0.639; p=0.000) and Chemerin (r=0.416; p=0.000).

**Conclusion:** Raised levels of Chemerin and Ferritin were associated with body fat and BMI. This finding of low grade inflammation in apparently healthy obese and overweight individual may progress to metabolic disturbances. Combination of both markers may be used as early screening tool for non-communicable disease.

**Keywords:** obesity, chemerin, ferritin

### 11.38

#### ELUCIDATING PALLIATIVE CARE: ADDRESSING PHYSICAL AND PSYCHOLOGICAL NEEDS

*Fatima Mohammad Kirmiyani*  
School of Nursing & Midwifery, Aga Khan  
University, Karachi

**Introduction:** "How little the real sufferings of illness are known or understood. How little does

anyone in good health fancy him or even herself into the life of a sick person" Florence Nightingale. One of the unhappiest moment comes when the doctor say, "There is nothing more we can do for you".

**Objective:** Elucidating Palliative Care at last stage of cancer addressing Physical and Psychological Needs of patient

**Method:** This case study included patient have colorectal cancer .Comprehensive review of literatures from twelve research articles from 2008 to 2013 was conducted through by using, Google scholar search engine and SAGE.

**Results:** Literatures review that Caring for the dying is a challenging but rewarding part of nursing. In the process of dying compassion and clinical competence play vital role in assisting patient and family. The task of caring for the colostomy palliative patient in a holistic manner within four days was challenging.

**Conclusion:** For better palliative care, government needs to improve the funding and provision of palliative care services and take certain actions regarding distribution of resources and availability of staff for palliative care settings and communities therefore; all dimension of care should be enhanced. To impart the better plan in the domain of communication for palliative care patient workshops and training sessions need to be planned. To enrich the quality of lives of terminal ill patient's nurses and health care providers need integrate this palliative domain in hospital and community settings.

**Keywords:** palliative care, cancer,  
Multidisciplinary approach

### 11.39

#### ROLE OF MOTIVATION IN NURSING CARE AND PATIENT OUTCOMES

*Fatima Mohammad Kirmiyani*  
School of Nursing & Midwifery, Aga Khan  
University, Karachi

**Introduction:** Nurses are the holistic care role models for patient rather than to be a disease-oriented, medical model. They create enormous

difference with little thing. Nurses play an important role in patient care, but motivating their patient is nurse vital role.

*Objective:* To identify patient health motivational factors and illness behavior (noncompliance, non-adherence and sick role behavior) which enhances or decrease outcomes of disease? Moreover, it also highlights nurse motivational factors which may motivate and also de motivate patient and nurse herself and how using motivation in nursing care will brings good health outcome of patient along with some practical examples.

*Method:* This case study included patient who had schizoaffective disorder. Comprehensive review of literature from twelve research articles from 2005 to 2013 was conducted through by using, SAGE and Google scholar search engine.

*Results:* that nurse should need to explore their motivation because it interrelated with patient motivation. So nurse can built a biggest involvement by providing medical and nursing intervention with love and hope by applying motivation in patient care.

*Conclusion:* This study concluded that motivation play an important in nursing care which will changes patient negative motivational factor or illness behavior into good health behavior that enhance compliance, their adherence to regimen and leaving sick role and achievement of favorable therapeutic health outcomes

*Keywords:* nurse motivation, patient motivation, nurse role

#### 11.42

### ROLE OF PHARMACIST IN PREVENTING PRESCRIBING ERRORS OF TOTAL PARENTERAL NUTRITION IN CANCER PATIENTS

*Gul Ambreen, Salwa Zubair, Farhat Zaheer, Huda Afsa, Abro Saira*  
Aga Khan University, Karachi

*Introduction:* Total Parental nutrition is often required in cancer patients either as an interim way to manage nutritional needs or as the only resort in terminally ill cancer patients. .TPN is a high risk product .The purpose of this study was to analyze the impact of pharmacist interventions in

minimizing and ensuring safe prescribing of TPN in terminally ill cancer patients.

*Methods:* Pharmacist reviewed 1500 TPN orders prescribed during last six months period [April-September, 2013]. Interventions were made for correct dose, formulation, addition/deletion of electrolytes, dose adjustment and possible interactions after reviewing laboratory parameters and patient profile. All the recommendations by pharmacist were documented in computerized physician order entry (CPOE) system as Pharmacist's interventions

*Results:* During study period 1500 TPN were prescribed for terminally ill patients and 579 interventions were documented, out of which 19 % for renal dose adjustment of amino acids, 18% fat adjustments according to LFTs ,17% on volume adjustment, 12% on electrolyte/trace elements adjustments according to serum levels, 12% for wrong calculations, 8% neutralization of TPN, 7% related to caloric requirements, 5% on relevant laboratory tests required and 2% related to wrong patient selection. Over all 38% TPN were intervened by pharmacist in study period.

*Conclusions:* Pharmacist can play a major role in intercepting and acting on possible prescribing errors thus ensuring safe, Cost effective and rational TPN therapy. Our results are consistent with international literature which supports the pharmacist role in provision of safe TPN therapy for desired outcome in terminally ill cancer patients.

*Keywords:* pharmacist role in tnpn, cancer patient & pharmacist, pharmacist intervention

#### 11.43

### METHOD EVALUATION OF TWO IMMUNOASSAYS FOR QUANTITATION OF CA15-3

*Hafsa Majid, Aysha Habib Khan, Imran Siddiqui*  
Department of Pathology & Microbiology, Aga Khan University, Karachi

*Objective:* A method a new method should always be compared with a reference method before introduction in clinical laboratory. To evaluate the performance of two immunoassays

methods, Chemiluminescence immunoassay (CLIA) technique and Microparticle enzyme immunoassay (MEIA) for CA-15-3 measurement.

**Methods:** This analytical study conducted as part of total quality management process at the section of Chemical Pathology, Department of Pathology & Microbiology AKUH from January 2012 to May 2012. Serum samples of 80 subjects tested for CA15-3 by MEIA method on Abbot Axsym were reanalyzed for CA 15-3 with Advia centaur using CLIA. For precision an internal quality control material was run 20 times. Linearity and analytical measurement range (AMR) was assessed by 5 samples covering the entire measurement range of the respective instruments. The limit of detection for both assays was less than 0.3U/L. Agreement was assessed using Deming regression analysis by EP evaluator version 10.0 and Bland Altman Technique.

**Results:** Age range of the subjects was 32 and 70 years, all being females. Mean CA15-3 levels were 137.47 U/l and 145.46 U/l by MEIA and CLIA methods respectively. Four samples were excluded due to levels more than the AMR. After exclusion of these samples the slope was 1.12, y-intercept 1.01, correlation coefficients were 0.90 while 87.5% concordance was found between the two methods. Method comparison revealed large differences for some individual samples. Method was linear from 0-500U/ml. Precision was good with SD 0.33 and CV of 3.1%.

**Conclusions:** Both methods showed good agreement over the range of 0-500U/ml. A few random samples showed positive bias; this indicates that individual patients should be followed up with a single method and to redetermine the baseline when changing methods

**Keywords:** CA 15-3, Method Comparison, MEIA

#### 11.45

#### AN AUDIT OF UNNECESSARY REPEATED BIOCHEMICAL TESTING IN PATIENTS ADMITTED TO A TERTIARY CARE HOSPITAL

*Hafsa Majid, Imran Siddiqui, Aysha Habib  
Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Background/Introduction:** Repeated requesting of routine tests without proper patient evaluation can make up a large proportion of a laboratory's workload. This study was conducted to analyze the cost and turnaround time (TAT) analysis of unnecessary blood urea nitrogen (BUN) and creatinine (Cr) tests in in-patients.

**Material and Methods:** A clinical audit was conducted at section of Chemical Pathology, AKUH. Aggregate data of inpatients from Internal Medicine ward with repeated samplings for BUN and Cr, in the month of August 2013 was collected. Subjects with malignancy, CKD, AKI or burns were excluded. The two consecutive samples with difference within biological variations, that is of <0.2mg/dl and <0.3mg/dl for BUN and Cr respectively were considered unnecessary testing.

**Results:** Repeated sampling for BUN was done in 139 patients (361 tests). The TAT of BUN analysis done in the lab was 722 hrs. costing Rs. 176890. While in 49 patients (114 tests) BUN was repeated unnecessarily with TAT and cost of 228 hrs. and Rs. 55860 respectively. The average unnecessary cost added to each patient being Rs. 1140. For Cr repeated sampling was done in 199 patients (762 tests) done in 1524 hrs for Rs. 419100. While avoidable Cr were done in 117 patients. Total 379 tests were considered avoidable with TAT and cost of 758 hrs and Rs. 208450 respectively. Average unnecessary cost added to each patient was Rs.1781.

**Conclusions:** This audit shows that the waste of technologists' time and patient's finances as a result of unnecessary repeat testing is excessive. Reviewing clinical indications and proper patient evaluation before ordering a test can prevent health services overutilization

**Keywords:** health services overutilization, Inpatients, clinical Audit

#### **11.46** RADIATION RISKS FROM MEDICAL IMAGING

*Hina Jetha, Zohra Meghani*  
*Department of Radiology and School of Nursing*  
*& Midwifery, Aga Khan University, Karachi*

This review provides a practical overview of the excess cancer risks related to radiation from medical imaging. Primary care physicians should have a basic understanding of these risks. Because of recent attention to this issue, patients are more likely to express concerns over radiation risk. In addition, physicians can play a role in reducing radiation risk to their patients by considering these risks when making imaging referrals. Also technologist play very important role while doing radiation procedure they can minimize doses by controlling radiation dose, scattered radiation and other methods which will be discussed in detail. This review also provides a brief overview of the evidence pertaining to low-level radiation and excess cancer risks and addresses the radiation doses and risks from common medical imaging studies

*Keywords:* mutation, radiation risk, medical imaging

#### **11.47** RADIATION RISKS OF CHILDREN FROM COMPUTED TOMOGRAPHY (CT)

*Hina Jetha, Zohra Meghani*  
*Department of Radiology and School of Nursing*  
*& Midwifery, Aga Khan University, Karachi*

The use of CT in pediatrics has increased over the last two decades. The ionizing radiation doses delivered by the tests are higher than convention radiography and are in ranges that have been linked to an increased risk of cancer. There is wide agreement that the benefits of an indicated computed tomography scan far outweigh the risks. But we can still do more to decrease the use of unnecessary scans and to decrease the level of radiation exposure from necessary scans. This will require a shift in our culture to become more tolerant of clinical

diagnoses without confirmatory imaging, more accepting of ‘watch and wait’ approaches and less accepting of the ‘another test can’t hurt’ mentality. It is important for both the referring Physician and the Radiologist to consider whether the risks of CT exceed the diagnostic value it provides over other tests. This report discuss about the current knowledge of radiation doses and their effects and risk factors for medical professionals.

*Keywords:* CT, children risks, pediatriis

#### **11.48** ANXIETY, ANGER AND DEPRESSION, DIFFICULT EMOTIONS TO DEAL IN CLINICAL SETTINGS

*Husnia Juma Khan, Rabia Qasim Ali, Azada Hussain Ali, Karishma Karim, Reema Roshan Ali, Salima Karani*  
*School of Nursing & Midwifery, Aga Khan University, Karachi*

*Topic:* literature review focusing anxiety, anger and depression, difficult emotions for nurses to deal in clinical settings.

*Background:* In clinical settings nurses have a frequent interaction with the patients. They face many difficulties while caring for their clients but they facilitate their clients to move towards better health. Anger, anxiety and depression are the difficult emotions that nurse face while caring for their patients. The aim of this literature review research studies is to investigate strategies how to handle patients with these emotions.

*Method:* Research articles from 2004-2012 were selected and reviewed to find different views. The main focus was to identify interventions and the role of nurses.

*Findings:* Literature revealed that hospital management has to appoint well trained staff who can handle patient properly and should arrange training programs for the nurses. Nurses must be aware of the symptoms associated with anxiety, anger, aggression in order to make an accurate assessment and interventions, they have to control their own emotions when dealing with

patient suffering from these emotions, nurses have to enhance their own knowledge about the caring of patient with these emotions and know how to handle them.

**Keywords:** knowledge, nurses, difficult emotions

#### 11.49

SLC2A2 mutation c.339delC causing Fanconi-Bickel Syndrome: Report of 2 children from Pakistan.

*Imad Zafar, Mohammad Faizan Zahid, Bushra Afroze  
Medical College and Department of Paediatrics & Child Health, Aga Khan University, Karachi*

Case reports: A 5 year old girl and her first cousin, a 3 year old boy, presented with failure to thrive, lower limb pain and deformities and protrudent abdomen. The girl also had a history of pathological fracture of the right femur at 3 years of age. Both children were born to first cousin parents. On examination, both children were noted to be below the 5th percentile for weight and height, had hepatomegaly and bilateral genu valgus. Work up revealed hypophosphatemia, hypocalcemia, raised parathormone and alkaline phosphatase, hypophosphaturia, glycosuria and fasting hypoglycemia. The examination findings and investigations lead us to suspect Fanconi-Bickel syndrome(FBS). Liver biopsy was conducted on the 5 year old girl revealed abnormal increase in glycogen deposits in hepatocytes. Samples were sent from both patients to the USA and a diagnosis of Fanconi-Bickel syndrome(FBS) was made with SLC2A2 genetic sequencing showing a mutation c.339delC, causing premature protein termination(p.Phe114LeufsStop16). The children were prescribed oral Joule's solution (86.5mg/5ml) and vitamin D3 supplementation. On their 3 to 4 month follow-up visits, both were found to have significant improvement in their symptoms and had achieved ambulation. Conclusion: FBS is a hereditary inborn error in carbohydrate metabolism. These cases of FBS highlight a mutation which has previously been described in newborns suffering from neonatal diabetes mellitus, whereas a detailed past history of our patients revealed no signs or symptoms of

neonatal diabetes mellitus. This report also describes, to the best of our knowledge, the first cases of molecularly proven FBS from our country.

**Keywords:** Fanconi-Bickel Syndrome, SLC2A2 mutation c.339delC, Pakistan

#### 11.50

PALLIATIVE CARE AS A PART OF UNDERGRADUATE MEDICAL CURRICULA ACROSS VARIOUS COUNTRIES INCLUDING PAKISTAN

*Iram Khurshed, Tabinda Ashfaq  
Department for Educational Development and Department of Family Medicine, Aga Khan University, Karachi*

**Method:** A literature search was conducted as part of systematic review in three electronic databases. Selection was based on strict eligibility criteria after examining full-texts. Grey literature and conference abstracts were also searched. QUEST criteria were used to quality grade these selected studies.

**Results:** Only nine studies were selected after close examination and group deliberation. These were reviewed using a standard data extraction form and analysed for themes addressing the research question. The main findings indicate a greater number of didactic teaching sessions as compared to experiential learning that takes place only during clinical rotations in hospice settings where they interact with terminally ill patients and their families. Additionally inconsistencies are found in the delivery of content across various undergraduate medical curricula.

**Conclusions:** This study identifies lack of standardized format in what undergraduates are taught about PC. It is therefore suggested that guidelines on PC should be standardized and more focused on experiential learning as well, all around the world. Moreover much work is needed on integration of PC education in Pakistan.

**Keywords:** palliative-care,, end-of-life care,, undergraduate-medical-education

### 11.51

#### WHO TRAUMA CARE CHECKLIST PILOT PROGRAM – AN AGA KHAN UNIVERSITY HOSPITAL EXPERIENCE

*Irum Qamar Khan, Nukhba Zia, Junaid A Razzak*

*Department of Emergency Medicine, Aga Khan University, Karachi*

*Introduction:* Improving trauma systems and pre-hospital care are essential for decreasing morbidity and mortality in trauma patients especially in low-and middle-income countries. The use of a checklist for trauma care in addition to existing training courses and protocols may help to reduce the rates of preventable trauma deaths in a variety of settings.

*Methods:* This study was done from January – December 2011 on all patients presenting with life-and limb-threatening trauma to the emergency department of AKUH. Patient information was retrieved from medical records. A proportion of these patients were directly observed by a trained data collector during random shifts. The 18-item checklist was implemented in July 2011 and covered all aspects of initial trauma care.

*Results:* During the study period 680 eligible patients were enrolled of which 160 (23.5%) were directly observed. Of the 680 patients, about 90% were males and mean age of the patients was  $31.46 \pm 15.39$  years. Around three-fourth of the patients had a road traffic injury ( $n=486$ , 71%) and required hospital admission ( $n=511$ , 75.14%). Of the 160 patients observed, significant reduction was seen in c-spine examination (89.04% vs. 68.97%,  $p$ -value 0.002), bilateral iliac crest examination (72.60% vs 39.08%,  $p$ -value  $<0.001$ ), distal pulse examination (89.04% vs 34.48%,  $p$ -value  $<0.001$ ) during pre-checklist and post-checklist phase

*Conclusion:* The use of checklist can help to reduce errors in providing care to trauma patients but it is important understand the limitations of using checklists in emergency settings.

*Keywords:* Trauma patients, checklist, Pakistan

### 11.52

#### RESTRAINT: A DILEMMA FOR NURSES

*Kainat Alidino, Sharmeen Sohail*  
*School of Nursing & Midwifery, Aga Khan University, Karachi*

*Purpose:* The purpose of this study is to highlight the traditional and punitive practice of restraining in a mental health setting. It signifies the causes and impacts of restraint on patients with the particular emphasis on the therapeutic nursing practices or alternatives before switching to the cruel act of restraining.

*Methods:* A maximum of 10 recent literature articles were utilized (from 2008-2013), using the authentic sources (Science Direct, PubMed and Sage). Moreover, clinical examples and experiences of nursing students were also integrated.

*Results/Literature Review:* Literature suggests that hyperactive behaviors, restlessness and increased aggression of the clients lead to the restraining practice but, it causes significant physical and mental harm to the clients including orthopedic injuries, cardio pulmonary snags, labored breathing; asphyxia, skin irritation and physical discomfort. Furthermore, feelings of powerlessness, uncertainty, isolation, stress, humiliation and learned dependence are some of the psychological impacts of restraint. Strategies or alternatives aimed at restraining reduction include environmental manipulation, de-escalation, psycho education, crisis assessment, one to one interaction, removal from stimuli and quiet time etc.

*Conclusion:* Nursing is a caring attitude and is very sensitive to restraining; therefore it should be kept as a last resort in dealing with hyperactive behaviors of the patients.

*Keywords:* Restraint, Dilemma, Nurses



### 11.53

#### APPLICATION OF COGNITIVE BEHAVIORAL PERSPECTIVE IN NURSING PRACTICE

*Karim Abdul Hussain  
School of Nursing & Midwifery, Aga Khan  
University, Karachi*

*Objective:* To discuss the application of cognitive behavioral perspective of interventional approach as a method for decreasing maladaptive thought processes in psychiatric disorders.

*Method:* This was an observational case study and pilot interventional approach during clinical placement at Karwan-e-Hayat Psychiatric Hospital. This paper elaborates practical applications at individual, community and governmental levels by recommending interventions at each stage. This paper also elaborates the outcomes of cognitive behavioral therapy at individual, community and governmental level.

*Results:* Cognitive Behavioral Therapy helps reduce altered behaviors of clients. Considering the current prevalence of psychiatric disorders prevailing in Pakistan and its effects on the individual's health; and the economic instability; it is very important to deal with this matter by some effective measures.

*Conclusion:* Cognitive Behavioral Therapy plays an important role in dealing with psychiatric patients who have altered behaviors. It has considerable outcomes therefore it is recommended that it should be implemented at mass scale.

*Keywords:* Psychology, Cognitive Behavioral Therapy, Nursing

### 11.56

#### ANXIETY, ANGER AND DEPRESSION: HANDLING DIFFICULT EMOTIONS IN NURSING CARE

*Komal Jiwani, Zohra Nasrullah, Sharmeen Sohail,  
Kainat Alidino  
School of Nursing & Midwifery, Aga Khan  
University, Karachi*

*Introduction:* The purpose of this study is to highlight the significance of dealing with patients' emotions as a crucial part of nursing care. This paper has highlighted the common emotions of anxiety, depression and anger, their causes and manifestations; the circumstances during which different patients exhibit these emotions and the strategies to deal with these emotions, along with some real practical examples.

*Method:* A maximum of 15 recent literature articles were reviewed (from 2008-2013), utilizing the authentic sources (Science Direct, ePub and Sage). Moreover, nursing students' clinical experiences or common observations were also integrated.

*Results:* Literature review showed that most patients fear diseases and their outcomes. Therefore, they exhibit negative emotions (anxiety, anger and depression). Hospitalized patients and individuals undergoing invasive procedures exhibit more anxiety; patients with chronic diseases such as cardiovascular disease, COPD, cancers experience depression; while perceived inadequate care due to staff shortage, late diagnosis, long waiting in emergency, uncontrolled pain and terminal illness evoke anger in patients. To deal with patients' anxiety, health education, informed consent, proper orientation of hospital, proper communication and music or relaxation therapy are found significant. Counseling and teaching of coping strategies to patients is core to alleviate depressive feelings of patients; while patients' anger can be dealt through maintaining patience, calm attitude and empathetic communication by nurses.

*Conclusion:* Nurses' ability to cater patient's emotional needs is essential for therapeutic nurse-patient relationship.

*Keywords:* Anger, Anxiety, Depression

### 11.57

#### EFFECTIVE AND TIMELY COMMUNICATION OF CRITICAL RESULTS: ADVANCEMENT TOWARDS QUALITY IMPROVEMENT AND

*Lubna Khaleeq, Bushra Moiz  
Department of Pathology & Microbiology, Aga  
Khan University, Karachi*

Clinical laboratories play an important role in promoting patient safety by timely release and communication of critical results that may have significant impact on medical decisions and patient outcomes. Our study was a prospective study conducted through January 2013 to September 2013 in hematology section of clinical laboratory. Hemoglobin(Hb), WBC, Platelets(Plt) & Malaria parasite (MP) were identified as the critical test of hematology section. Time limit for communicating critical results was set as 30 min. except for MP which was allotted 120 min. after sample receiving time. Critical results communication policy was established for both in patients and out patients. Once the critical results were communicated, it was documented in computer system for record. During our study period, a total number of 3451 critical results were received. Out of these samples, inpatients were 1057(30.6%) and outpatients were 2394(69.3%). Critical results informed with in 30 min. were 3344(96.8%). Results informed after 30 min. were 107(3.1%) with 31(28.9%) inpatients & 76(70.1%) outpatient. Call responded by ward were 783(100%) and by outpatients it was 3042(88.1%), critical results with no phone number were 178 (5.1%). Effective communication of critical results can be achieved through team work, clarified policy and continuous monitoring. For out patients a single telephone number or alert system on mobile phone can be introduced which will improve patient safety and quality of care which is the aim of the hospital who believes in quality.

*Keywords:* Critical results, Patient safety, Quality Improvement

### 11.58

#### ACADEMIC STRESS AMONG MEDICAL STUDENTS RELATED TO DIFFERENT ASSESSMENT SYSTEMS, IN KARACHI, PAKISTAN

*Madiha Ali, Hamna Asim, Ahmed Edhi, Daniyal  
Hashmi, Sidra Masud, Farah Naz, Kanza Noor,  
Mohammad Shahjehan Khan, Mohammad Faizan  
Zahid, imtiaz.jehan*

*Medical College and Department of Community  
Health Sciences, Aga Khan University, Karachi*

Stress among medical students induced by academic pressures is on the rise among the student population in Pakistan and other parts of the world. This is due to an increase in demand for academic excellence in an increasingly competitive environment the students are a part of. Our study examined the relationship between the aforementioned methods employed to assess academic performance and the levels of stress among students of two different medical universities of Karachi, Pakistan. A sample (N=384) consisting of medical students currently enrolled in pre-clinical years was taken from two universities, one employing the semester examination system with grade point average scores and the other employing an annual examination system with only pass/fail or honors. A pre-designed self-administered questionnaire was distributed. Test anxiety levels were assessed by The Westside Test Anxiety scale. Overall stress was evaluated using the Perceived stress scale. The prevalence of stress according to the Perceived stress scale was higher among those assessed by semester system with grade point average scores. Test anxiety was also higher in this group. The differences in mean scores of both the tests used were found to be significant between the two systems using an independent sample t-test with p value <0.05 and confidence interval of 95%. Our results stress the need for governing bodies such as the Higher Education Commission (HEC) to revise and employ a uniform assessment system for all the medical colleges to improve student efficiency and at the same time reduce stress levels.

*Keywords:* Academic stress, Test anxiety, medical students

### 11.59

#### BURDEN OF NON-TRAUMATIC OUT-OF-HOSPITAL CARDIAC ARREST IN KARACHI, PAKISTAN: ESTIMATION THROUGH THE CAPTURE-RECAPTURE METHOD

*Minaz Zulfiqar Ali Mawani, Junaid Razzak, Masood Kadir, Iqbal Azam, Amber Mehmood*  
Departments of Community Health Sciences and  
Emergency Medicine, Aga Khan University,  
Karachi

*Introduction:* Out-of-hospital cardiac arrest (OHCA) is one of the leading causes of death and disability worldwide. A substantial number to the burden of cardio vascular diseases globally is being contributed by developing countries. It is anticipated that this might be leading to a higher number of OHCA as well, which has never been explored in this population. Since, is difficult to obtain accurate number of OHCA patients from the existing sources, we applied two sample capture-recapture technique.

*Methodology:* We used cross sectional design and capture-recapture technique to obtain a conservative estimate of burden of non-traumatic OHCA from the analysis of 3 months records (January 2013-April 2013); five major hospitals and two major emergency medical services (EMS). Matching was done on variables of gender, date and time of arrest and at least one of the other matching variables, which include patient's name, age, hospital name and cause of arrest.

*Results:* The EMS records reported 488 whereas hospital records reported 545 OHCA cases. The capture-recapture analysis estimated 9887.6 (95% CI: 36628.7, 43570.6) OHCA cases over study duration. Records from individual sources underestimated the burden and calculated only 5.5% of the total OHCA cases. Through the capture-recapture method, the annual incidence Proportion of non-traumatic out-of-hospital cardiac arrests was calculated to be 194 cases/100,000 population (95% CI: 177.8, 211.5).

*Conclusion:* The records either from major hospitals or EMS under report the actual burden of OHCA, which is found to be higher in the population of Karachi, Pakistan as compared to western countries.

*Keywords:* Out-of Hospital Cardiac Arrest, Burden, Capture-recapture method

### 11.60

#### ASSOCIATION OF TYPE OF TRANSPORTATION (EMS VS. NON-EMS) WITH SURVIVAL OF NON-TRAUMATIC OUT-OF-HOSPITAL CARDIAC ARREST PATIENTS-A MULTICENTRE COHORT STUDY

*Minaz Zulfiqar Ali Mawani, Junaid Razzak, Masood Kadir, Iqbal Azam, Amber Mehmood*  
Departments of Community Health Sciences and  
Emergency Medicine, Aga Khan University,  
Karachi

*Introduction:* Out-of-hospital cardiac arrest (OHCA) is one of the leading causes of death and disability worldwide. Pre-hospital care is a major determinant of survival from an OHCA. Research conducted in different parts of the world to find out which system of pre-hospital transportation is associated with better survival, have been inconclusive. In Pakistan, where emergency medical services systems (EMS) is still developing; this area of research has never been explored. This study aims to look at the association of type of transportation to hospital with survival after an OHCA.

*Methodology:* We conducted a multicentre prospective cohort study at emergency departments (ED) of five major public and private hospitals from January 2013 to April 2013 in Karachi, Pakistan. Twenty-four hour data collection was performed by trained data collectors, using a structured questionnaire. All patients > 18 year, presenting with OHCA, were included. Patients with trauma, Do-not-resuscitate status, brought as a part of mass casualty and referred from other hospitals were excluded.

*Results:* During three months period, data was obtained on 399 OHCA patients. Survival from an OHCA at hospital discharge was only 1.5% in this study. In a multivariable survival analysis model, being treated by EMS was found to be 35% protective from death as compared to being treated by a Non-EMS (aHR: 0.65, 95% CI: 0.53,0.81) while adjusting for CPR (cardiopulmonary resuscitation) and location of arrest.

*Conclusion:* The overall survival is poor in this ss compared to Non-EMS, being transported by an EMS is associated with better survival.

*Keywords:* OHCA, EMS, Survival

### 11.61

#### COMPARISON BETWEEN INTRAVENOUS PARACETAMOL AND FENTANYL FOR INTRAOPERATIVE AND POSTOPERATIVE PAIN RELIEF

*Muhammad Asghar Ali, Faisal Shamim, Shakiab  
Department of Anaesthesiology, Aga Khan  
University, Karachi*

*Objective:* The purpose of this study was to compare paracetamol with fentanyl for pain relief in dilation and curettage procedures.

*Materials and Methods:* Sixty patients undergoing elective dilation and curettage were allocated into two groups, who were given either IV injection of 1g paracetamol 15 minutes before induction or 2ug/kg fentanyl at a time of induction. Inadequate pain control during surgical procedure was assumed if heart rate, blood pressure and respiratory rate were increased 20 % above the base line. Postoperatively pain scores were observed in the recovery room on a numerical rating scale at 5, 15, and 30 minutes intervals.

*Results:* Pain scores were similar in both groups 2.75 ( $\pm$  1.5) and 2.55 ( $\pm$  1.3) in paracetamol and fentanyl groups respectively. The analgesic properties of paracetamol and fentanyl were similar in this study. We did not observe any significant adverse effects in the two groups.

*Conclusion:* The study demonstrates the usefulness of intravenous paracetamol and may be as effective as fentanyl in dilation and curettage procedures.

*Keywords:* Dilation & curettage, Paracetamol, Fentanyl

### 11.62

#### AN OPPORTUNITY FOR SERVICE IMPROVEMENT: COMPLAINT DATA ANALYSIS FROM EMERGENCY DEPARTMENT OF TERTIARY CARE HOSPITAL OF, PAKISTAN

*Munawar Khursheed, Jabeen Fayyaz, Asher Feroze  
Department of Emergency Medicine, Aga Khan  
University, Karachi*

*Introduction:* Organizations that are geared for service delivery thrive on customer satisfaction. This becomes even more challenging in the context of health care industry. Continuous quality improvement focuses on the customer and, therefore requires attention to customers' feedback as a very important input. One of the important customers' feedbacks in healthcare industry is patients' complaints. The role of complaint data as a tool for quality improvement has received little attention in the literature

*Objective:* To analyze the patients complaints data that can guides towards strategies to improve quality assurance in terms of patients care and their satisfaction. *Methods:* This is retrospective review and analysis of all patients' complaints visiting AKUH-ED from January 2010 until September 2012. Data divided into five major categories: care, attitude, communication, delay and others. Data analyzed on yearly and category basis to see frequencies and trends.

*Results:* There were total 386 complaints, 145 in year 2010, 146 in 2011 and 95 complaints registered until 3rd quarter 2012. Majority of the complaints are related to care 120 (31%) then delays 89 (23%), communication 80 (21%), attitude 65 (17%) and others (8%) in decreasing order of frequency. Care related complaints showed increasing in numbers; they were 25% of the total in 2010, 32% in 2011 and increases to 40% of total in 2012. On the other hand, communications and attitude shows improvement. In 2010 attitude related complaints was 19%, it comes down to 18% in 2011 but showed significant improvement to 12% in 2012. Communication related complaints were 21% of the total in 2010,

*Keywords:* Patient's complaints, Emergency Department, Pakistan

**11.63**  
EFFECT OF REWARD SYSTEM ON  
EMPLOYEE JOB SATISFACTION – IN  
PRIVATE HEALTH CARE SECTORS IN  
KARACHI, PAKISTAN

*Muniba Islam, Ahmed Raheem, Muhammad  
Usman Aleem*

*Department of Pathology & Microbiology, Aga  
Khan University, Karachi and PAF-KIET,  
Karachi*

Private health care sectors have significant important and its trend is expanded day by day. Health care sector are purely provide the services to the society. My research focuses on effect of direct and indirect rewards system on employee job satisfaction of health care sectors. My study was conducted for Karachi private health care sectors sampling 131 permanent employees of four different private health care sectors. The collected from employees of four different hospital such as LNH (Liaquat National Hospital), ZMUH (Ziauddin Medical University hospital), BMUH (Baqai Medical University Hospital) and Patel Hospital among 145 questionnaires were distributed and 131 are get complete usable filled questionnaires for response 90% and SPSS 20v was applied to analyzed the records all through “independent sample T-test, Binary logistics, correlation, regression analysis”. The result of study indicate that employee of private health care sectors are more satisfied with indirect or non-financial reward system like promotion opportunity, job security, working environment, independence of task and importance of task. They were less satisfied with job recognition. Result also reveals the private health care sector employee much satisfied with promotion opportunity, job security, working environment, job recognition, independent and importance of task. Salary with good benefits were not only monitor satisfaction level other non-financial factors were involved in employee job satisfaction. Little difference was observed regarding preference of non-financial over financial rewards between private health care and that effect on job satisfaction level. The participation in survey was for formality and confidentially of responses was

ensured. In my study finding direction the financial reward such as salary or other financial benefits and non-financial rewards for instance promotion opportunity, job security, working environment, job recognition, independent and importance of task are important enticed and boost up to employee job satisfaction.

*Keywords:* job satisfaction, reward system, health care sector

**11.64**  
IMPACT OF UTILIZATION OF REFERENCE  
BASED STABILITY DATA OF CYTOTOXIC  
DRUGS ON MINIMIZATION OF DRUG  
WASTAGE AND COST CONTAINMENT

*Nadia Ayoub, Salwa Zubair, Latif Sheikh  
Department of Pharmacy, Aga Khan University,  
Karachi*

*Introduction:* In this part of world cancer treatment considers additional financial burden over patient. In case if prepared chemotherapy drugs are held by physicians due to any pertinent reason and not utilized it adds extra cost burden to patient and their families.

*Objectives:* Primary aim is Re-utilization of cytotoxic drugs based on authentic stability references thereby reducing cost of unused cytotoxic drugs on patients. Second aim is to minimize wastage and reduce economical loss to hospital.

*Method:* Our Oncology pharmacist team developed chemotherapy preparation and stability chart. Authentic references were used to validate the stability information. This stability chart is made available in centralized chemo admixture pharmacy. Since April 2013, any diluted-ready to use cytotoxic drug which is held by physician due to any reason was properly stored according to storage requirement mentioned in chart. After checking stability data these unused drugs were utilized on another patient being ordered the same drug regimen. Data was retrieved from manual nursing communication slips and tallied from computer record of drug credit given to one patient and used on other patient.

**Result:** During April 2013 till September 2013, total 57 chemotherapeutic drugs credited to patient's account with cost saving of Rs.628600 (~\$ 6103).The most common drugs credited and utilized to another patient are 5FU, Cisplatin, Ifosfamide and Rituximab.

**Conclusion:** Institutional development of chemotherapy preparation and stability chart not only reduces drug wastage and extra cost burden on patients but also helpful in training of novice pharmacists and technicians in standard dilution and drug preparation.

**Keywords:** cytotoxic drugs, minimization of drug wastage, cost containment

### 11.65

AN ANALYSIS OF ERROR PREVENTED BY VALIDATION OF CHEMOTHERAPY REGIMEN BY CLINICAL ONCOLOGY PHARMACIST AND ITS IMPACT ON DIRECT PATIENT CARE IN A TERTIARY CARE TEACHING HOSPITAL.

*Nadia Ayoub, Salwa Zubair, Farhat.Zaheer  
Department of Pharmacy, Aga Khan University,  
Karachi*

**Introduction:** Cytotoxic drugs are high risk drugs and medication errors in their prescribing, dispensing and administration have serious consequences including death.

**Objective:** The primary aim is to analyze the errors prevented in the chemotherapy regimen by order review through CPOE. This also reflects the role of clinical oncology pharmacist in verification of chemotherapy protocol which ensures excellent patient care. This study explored the clinical interventions made by pharmacists in dispensing of chemotherapy doses, and evaluated pharmacist's contribution to patient care.

**Method:** Clinical Pharmacists in-house credentials in oncology pharmacy practices are assigned for the verification of chemotherapy prescription through CPOE. From 1st January 2013 to 30th September 2013 the documented intervention of chemotherapy prescription was

analyzed and rated the clinical significance of the recorded interventions.

**Results:** During study period 231 clinical pharmacy interventions were made. Intervention were ranked to have had a "very significant" and "less significant".147(63.6%) interventions recorded as very significant which is directly related to dosing parameter relevant to chemotherapy regimen while others intervention were found as less significant i.e. 84(36.3%).

**Conclusion:** Clinical interventions made by pharmacists had a significant impact on patient care. The use of CPOE system for chemotherapy prescription will be reduced medication error, but Clinical pharmacist order review and interventions considering the individual specific medical information will ensure excellent patient care. The integration of pharmacist's technical and clinical roles into dispensing of chemotherapy doses is required for providing high-quality cancer services.

**Keywords:** error prevention, validation of chemotherapy prescription, patient care

### 11.66

EXPERIENCING OF PATIENTS, PHYSICIANS, AND NURSES REGARDING LENGTH OF STAY AND PATIENT SATISFACTION

*Naureen Wazir Ali Hussaini, Barkatullah  
sadullah  
Nursing Services, Aga Khan University, Karachi*

Patients presented to emergency department need a quick medical assistance to optimize their prognosis. Increase in length of stay is one factor which affects delivery of care and increases the likelihood of patient dissatisfaction. Certain contributing factors for instance patient characteristics, investigations, special procedures, expert's consultations and patient allocation, result in overcrowding. Purpose: purpose of this study was to evaluate the total length of patient stay (LOS) and identify the factors of prolong length of patient stay in Pediatric ED. Sampling: Through non probability convenience sampling n=36

participants were selected including 25 patient attendants, 6 nurses, and 6 pediatricians. Data Collection: Data were retrieved from the hospital electronic medical record; structured questioner was used for patient's attendant, pediatrician and nursing staff while data was collected through unstructured questionnaire from nurses and physicians. Analysis: SPSS version 19.0 was for the analysis of data and results were presented in percentages and frequencies. Result: it was find out that mean length of stay was (9.68hrs) which was double to optimal LOS (4.5hrs). (28%) patient's attendants identified non availability of beds, (24%) said waiting for consultation and (16%) said waiting for laboratory results are the major contributing factors for increasing length of stay. Challenges faced by medical and nursing staff were parent's anxiety, difficulty in building reputation with children and attendants overcrowding major factors for increase in length of stay. Conclusion: These results demonstrated that delay in the patient stay time during waiting for different procedures and consultations affects negatively the patients' satisfaction level.

*Keywords:* Length of stay, dissatisfaction, overcrowding,, emergency department, satisfaction

### 11.70

#### ASSESSING COMPUTER SKILLS AMONGST DENTAL UNDERGRADUATE STUDENTS AT A PUBLIC SECTOR DENTAL INSTITUTION IN PAKISTAN

*Osama Shakeel, Syed Arsalan Ahmed,  
Mohammad Abdul Samad, Dr.Shah Faisal  
Medical College, Karachi medical and Dental  
College, Karachi*

*Background and Aims:* Information and Communication technology (ICT) is an important tool in dental education and practice, and its use is rapidly increasing. The aim of the study is to assess the information and communication technologies (ICT) skills of a public sector dental students in Pakistan.

*Methods:* Cross sectional survey was conducted, and dental students from all four years attending Karachi Medical & Dental College (KM&DC), Pakistan responded to the self-reported and pre-tested study questionnaire. Information related to generic and basic ICT skills, frequency of computer use (hours/week), years of computer use, reasons for use and access to computers were inquired.

*Results:* In total, 159 students with an overall response rate of 63.6% participated in the study. 97.5% of the study population mentioned that they had access to computers. The mean ( $\pm$ SD) months of computer use and hours per week spent in using computer were 104.80 ( $\pm$ 43.54) months and 8.67 ( $\pm$ 7.30) [hours/week], respectively. The highest levels of competence assessed using the generic ICT score were for email, file management, internet and word. Of the 16 basic skills evaluated, only 4 (turning computer on and off, using a mouse, printing, and setting up mailbox) were present in 80% of the participants. The mean ( $\pm$ SD) of the generic scores were 16.09 ( $\pm$  6.52) out of a maximum score of 33 and for the specific ICT skills the mean ( $\pm$ SD) were 10.77 ( $\pm$ 3.85) out of a maximum score of 16. The two scores were significantly correlated,  $r = 0.672$  ( $p < 0.001$ ).

*Conclusion:* Our study has found a low level of ICT skills, thus attention is required to improve ICT skills for personal and professional development of these dental students.

*Keywords:* ICT skills, Dental students, Computer literacy

### 11.72

#### CONTRIBUTION OF EMERGENCY PHARMACIST INTERVENTIONS IN PROVIDING QUALITY CARE AND COST EFFECTIVE THERAPY OF EMERGENCY DEPARTMENT DISCHARGES AND AMBULATORY PATIENTS IN TERTIARY CARE HOSPITAL

*Perveen Feroza, Yousuf Jibran, Akram Aisha,  
Mazher Zainab, Maqbool Hammad  
Department of Pharmacy, Aga Khan University,  
Karachi*

**Purpose:** To assess the role of EPH interventions for better patient care in ambulatory setting considering cost effectiveness as a secondary outcome.

**Introduction:** Emergency room pharmacy (ERP) operates 24/7 and deals both ED discharges as well as AP and provides quality care through most appropriate and cost effective therapy. EPHT plays a pivotal role in providing cost effective therapy.

**Methodology:** Pharmacist reviews all medications while receiving prescription and rectifies any possible medication errors by reviewing current /past patient profile and labs. Recommendations by the pharmacist to optimize the therapy are documented in computerized order entry system as “Pharmacist Intervention” (PI), categorized according to type and severity. For this descriptive study, we retrieved data of six months (July – December 2012) from the interventions logged in the system.

**Results:** During the study period, 105 PI were logged. The most frequently recorded interventions were pharmaco therapeutic recommendations 28%, frequency adjustments 23 %, above therapeutic dose 13 %, brand switch 14 %.36% were related to antibiotics, 13% to painkillers, 12 %to antiemetic’s and PPIs. According to the age wise categorization, 14% were in the age group 0 - 5 years while 86% above 10 years. Cost saving was found to be ~ 11200 Rs.

**Conclusion:** Our results are supported by international literature according to which the PI and counseling to patients plays very important role in improving adherence to therapy, avoiding ADRs, and in assuring most appropriate, safe and cost-effective therapy for desired outcomes in ED discharges and ambulatory patients.

**Keywords:** Quality care, Cost effective therapy, Pharmacist Interventions

## 11.74

### BROADENING VISION OF CARE FOR ORAL CANCER: PSYCHOSOCIAL AND SPIRITUAL DOMAINS OF CARE

*Rabia Khowaja*

*School of Nursing & Midwifery, Aga Khan University, Karachi*

**Introduction:** “Palliative care is an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering” (WHO, 2013).

**Objective:** To identify various domains of a hospitalized 55-year old patient diagnosed with oral cancer and highlight issues, interventions and recommendations especially regarding psychosocial and spiritual domains of palliative care.

**Method:** This case study took place at a private hospital oncology hospital in Pakistan. The patient was observed and questioned about the various health domains that were affected due to his oral cancer and hospitalization. For this purpose, a literature search was also conducted related to publications between 2004 and 2013 from different research databases and online books.

**Results:** The results revealed that the altered health domains are merely subjective and vary from patient to patient. In this case study, patients’ psychosocial and spiritual domains were much affected.

**Keywords:** Palliative Care, Oral Cancer, Health Domains



### 11.76

#### ENDOVASCULAR EMBOLIZATION OF INTRACRANIAL ARTERIOVENOUS MALFORMATION, OVER TEN YEAR EXPERIENCE AT TERTIARY CARE HOSPITAL

*Raza Sayani, Tanveer Ul Haq, Nauman Al Qamari, Amin Rajani*  
Department of Radiology, Aga Khan University, Karachi

*Objective:* To evaluate the technical success, safety and outcome of endovascular embolization for intracranial arteriovenous malformation.

*Methods:* Advances in superselective microcatheterization techniques established superselective endovascular exploration as an integral and indispensable tool in the pretherapeutic evaluation of brain AVMs. Presurgical embolization of AVM has been seen to improve surgical outcomes significantly. We share our experience of over ten year from April 2002 to December 2012 where we performed angio embolization of AVMs. 51 patients (32 males and 19 females) with age range from 9 to 76 years, (mean age 29.2 years) underwent 70 sessions of embolization. Some of them were performed in stages with 9 undergoing 2 sessions and 5 undergoing 3 sessions. We describe in detail the material used for embolization which included Histoacryl glue, Onyx, coils and in certain cases with feeders from extracranial supply PVA particles were used. Surgery was performed in a number of cases. We describe in detail the presenting features, type, location and size of AVM, their grading according to Spetzler-Martin system, the outcome of embolization and later surgery, complications related to over-embolizing in a single session as well as venous spill over resulting in vascular disturbance and hypertension.

*Conclusion:* Results of endovascular avm embolization at our center showed high technical success rate which combined with surgery has good overall results.

*Keywords:* Endovascular, AVM, Embolization

### 11.78

#### ASSOCIATION OF LOW PLATELET COUNT WITH ATYPICAL LYMPHOCYTES.

*Roohi Jamal, Mashhooda Rasool, Bushra Moiz*  
Department of Pathology & Microbiology, Aga Khan University, Karachi

Atypical lymphocytes are large reactive lymphocytes because of antigen stimulation. A healthy individual carries 150 to 450 x 10<sup>3</sup>/ul platelets. Low platelet count may also be occurring for a variety of reason most commonly viral infection because virus can interfere with platelet production. 353 individuals of both genders were taken into consideration. Whole EDTA blood Samples were analyzed for blood counts using automated CBC analyzer; Coulter LH 750. Peripheral films of these samples were reviewed by hematologist to find out the presence of atypical lymphocytes. Other morphological findings present in peripheral film were also noted by hematologist. Total number of CBC samples received during the study period was 17453. Among these samples, 353 (2.02%) cases were referred for hematologists review. Out of these 353 cases, 53 cases were of neutrophilia, 23 cases of Iron Deficiency, 48 cases of Pancytopenia and 60 cases of peripheral films having atypical lymphocytes. In these 60 cases, 33 cases were with low platelet count whereas 27 cases were with normal platelet count. By the study of 353 individuals, we arrive at the conclusion that there is association between low platelet count and atypical lymphocytes or viral infection to some extent although atypical lymphocytes may also be associated with normal platelet count but that ratio is comparatively less. some other pathology may also be associated with low as well as normal platelet count.

*Keywords:* platelets, atypical lymphocytes, coulter LH750

### 11.79

#### PERFORMANCE EVALUATION BETWEEN HAEMATOLOGY ANALYZERS -COULTER LH-750 & SYSMEX XE-5000

*Roohi Jamal, Lubna Khaleeq, Bushra Moiz  
Department of Pathology & Microbiology, Aga Khan University, Karachi*

The two most widely used methodologies in hematology analyzers are impedance method (Coulter LH-750) and flow cytometric method (Sysmex XE5000). The Beckman's Coulter LH750 works on volume, conductivity and scattered (VCS) technology, whereas Sysmex XE5000 utilizes the power of fluorescent flow cytometry and hydrodynamic focusing technology. It was a prospective study, conducted in the haematology section of clinical laboratory, Aga Khan University Hospital. A total of 160 samples were analyzed from July 1st to July 21st, 2013. CBC samples were analyzed and data analysis was performed using software package EP evaluator® which is designed for method evaluation and validation according to the CLIA and CAP requirement. During the study period 160 samples were analyzed. Among these samples the R value for Hb was 0.98 while slope and intercept were 1.058 & -0.22, for Hct, R value was 0.98 while slope and intercept were 1.091 & -1.74. The R value for WBC was 0.99 while slope and intercept were 1.080 & -1.475 and for platelets count R value was 0.86 while slope and intercept were 1.110 & 6.9. The statistical analysis of data indicates good correlation between Hb, Hct, and WBC, however significant differences in platelets count between the two analyzers was observed. Both hematology analyzers correlated well with each other in case of Hb, Hct and WBC while in case of platelets count there was a significant difference in results.

*Keywords:* hematology analyzers, instrument comparison, optical platelets technology

### 11.80

#### COMPARISON BETWEEN MANUAL AND AUTOMATED METHODS FOR ERYTHROCYTE SEDIMENTATION RATE : A TERTIARY CARE HOSPITAL STUDY

*Sadia Innam, Lubna Khaleeq, Muhammad Shariq, Bushra Moiz  
Department of Pathology & Microbiology, Aga Khan University, Karachi*

*Introduction:* ESR is the length of fall of the top of the column of erythrocytes in a given interval of time. The ESR is a simple non-specific screening test that indirectly measures the presence of inflammation in the body. It reflects the tendency of red blood cells to settle more rapidly in the face of some disease states, usually because of increase in plasma, fibrinogen, immunoglobulins, and other acute phase reaction proteins. The conventional or reference method widely accepted for ESR estimation is Westergren method. But for laboratories having high turn-over of ESR samples, automated instruments are preferred because they are closed system for hygienic working, less laborious and have faster throughput which in turn can aid in improving the turn-around time of the test.

*Aims and Objectives:* To compare manual method of ESR estimation with automated method in order to improve the turn-around time of the test.

*Materials and Methods:* The study was conducted at Hematology section of Clinical Laboratories of the Aga Khan University Hospital. It was a prospective study. Time duration was 2 months (from September to October, 2013). Blood samples were drawn in sodium citrate tube. ESR was done manually by using Westergren tube method and automated by Bio-Griener's SRS 20/II. SPSS version 19 was used for statistical analysis. Patients from both sexes and all age groups were included in the study. Blood samples which were not in proper proportions to the anticoagulant, strongly lipemic, hemolyzed samples were excluded from the study.

*Results:* Total 100 samples were taken into consideration. Among these 100 samples age

range was 1-90 yrs, with a mean age of 36.9 years. There were 56 females and 44 males. The correlation of co-efficient between two methods was 0.98. Analyses gave a mean value of 31.4 by manual and 31.9 by automated method.

*Conclusion:* There was no marked difference between the mean values by both the methods therefore; manual method can be replaced with automated instruments.

*Keywords:* Erythrocyte Sedimentation Rate (ESR), Manual Method, Automated Method

### 11.81

#### RESPONSIVE STIMULATION INTERVENTION FROM BIRTH TO TWO YEARS AND OUTCOMES FOR MOTHER-CHILD INTERACTION AT 4 YEARS: EXPERIENCE FROM PAKISTAN

Saima Siyal, Muneera A.Rasheed, Aisha K.Yousafzai

Department of Paediatrics & Child Health, Aga Khan University, Karachi

A responsive stimulation programme, implemented in district Naushero Feroze in Sindh, was found to enhance mother-child interactions in the first two years of life. We had an opportunity in Pakistan to evaluate mothers and children exposed to the early responsive parenting intervention when children are four years old. The aim of this study is to determine the effect of early responsive stimulation on mother-child interaction at age four. The data of the first 100 children (from a sample of 1300) from four groups of the original trial is used: responsive stimulation group (n=36), responsive stimulation + enhanced nutrition group (n=25), enhanced nutrition group (n=16) and control group (n=23): was collected using an observational mother-child interaction tool involving a five minute structured observation of mother and child interaction during a play activity using a picture book. A trained Community-based Child Development Assessor visited the enrolled family at home on the child's 4th birthday for this observation. Different behaviors were measured like positive/negative affect and touch, sensitivity, scaffolding, language stimulation, focus, communication and mutual engagement. These behaviors were rated according to frequencies and

then converted into scores. Higher scores reflect a more positive interaction. Preliminary analysis showed mean score (SD) for responsive stimulation was 31.89 (6.7), enhanced nutrition was 27.88 (5.8), responsive stimulation + enhanced nutrition was 30.80 (6.2) and for control was 32.09 (5.2). This sample size is small and not equally distributed among four groups. The final conclusion will be made after analysis of full sample of 1300.

*Keywords:* Interaction, mother, responsive stimulation

### 11.84

#### DOES EARLY CHILD DEVELOPMENT PARENTING EDUCATION INTERVENTION IMPROVE THE QUALITY OF HOME ENVIRONMENT?

Sanobar Nadeem, Ghazala Rafique, Rizwan Ali Rais

Human Development Programme, Aga Khan University, Karachi

*Background:* Parents play a vital role in optimum child development by providing favorable home environment. Research related to ECD interventions is virtually non-existent in Pakistan. The aim of this study was to evaluate the effectiveness of ECD parenting education on quality of the child's home environment.

*Method:* Quasi experimental design was used to assess the change in quality of home environment in two communities. All mothers received one year parenting education by a trained Early Child Development Worker (ECDWs) during home visits and center based education sessions promoting appropriate child rearing practices on health, nutrition, education, stimulation and safety. IT-HOME scale was used to observe the home environment of 560 birth to three years children and paired sample t-test was used for analysis.

*Results:* Subscale and total HOME scores were compared with corresponding mean and standard deviations. Both communities had an average difference from pre to post HOME scores of 5.2 (SD = 7.1) and 4.9 (SD = 7.6), indicating significant improvement in home environment,  $t(301) = 12.54, p < 0.01$  (2-tailed) and  $t(257) = 10.41, p < 0.01$  (2-tailed) from Tandojam and

Mastung respectively. Results indicate a significant improvement on Responsivity and Learning Material subscales with average difference of 1.5 (SD = 2.12),  $t(301) = 11.95$ ,  $p < 0.01$ , and 1.2 (SD = 2.67),  $t(301) = 7.73$ ,  $p < 0.01$  respectively in Tandojam. In Mastung significant improvements were observed in only on Learning Material with average difference of 1.6 (SD = 3.10),  $t(257) = 8.39$ ,  $p < 0.01$ .

*Conclusion:* The results of this study show that parenting education by trained person is effective in improving quality of home environment.

*Keywords:* home environment, early child intervention, parenting education

### 11.85

#### OUT OF SCHOOL CHILDREN: CAREGIVER'S PERSPECTIVE FOR CHILDREN NOT ATTENDING SCHOOLS

*Sanober Nadeem, Zulfiqar Bachani, Ghazala Rafique*

*Human Development Programme, Aga Khan University, Karachi*

*Background:* According to UNESCO, 55 million schools going children worldwide are out of school. Pakistan has 5.4 million children out of school; the percentage for girls is very alarming; this figure is increasing gradually, due to various social and cultural reasons. A study was conducted to understand the situation of out of school children in two communities of Pakistan.

*Methodology:* A door to door survey was conducted in 2010 at Tandojam in Sindh and Mastung in Balochistan province, to find out the number of children who were out of school between the ages of 4 to 8 years and to explore the reasons for not going to school. The information was collected from the mother by early childhood development workers. The data were compiled, frequencies and percentages were calculated.

*Results:* In Tandojam, out of 465 children, 150 were not enrolled in school 39% were boys and 56% were girls. In Mastung, out of 386 children 92 were out of school, 48% of these were girls and 52% children were boys. The most

commonly cited reason was that the child is still young to go to school other included parents' unwillingness, distance to school, child suffering from illness or disability and working child. Seasonal migration was also a main reason in Mastung area.

*Conclusion:* Out of school children are missing the opportunities for learning in the most critical years of development. Parental awareness and policy for ensuring access and enrollment can help children to achieve their optimal potential and reduce the dropout rates.

*Keywords:* Out of school, early child development, parent perception

### 11.88

#### ENHANCING SOCIALIZATION AMONGST ELDERLY

*Shamsa Amin, Asma Sunderani, Kiran Iqbal, Shelina Aslam, Karima Ali, Saher Ijaz, Murk Mohammad*

*School of Nursing & Midwifery, Aga Khan University, Karachi*

As people age, withdrawal from normal work-cycles and relationships is considered the developmental role. Many elderly successfully adopt the transition while others experience emotional difficulties. This paper discusses a project carried out at a Senior Citizen Home located at Nazimabad aiming to increase elderly's participation in activities to improve their adaptability and provide opportunities for healthy interactions. While dealing with twenty-seven elderly residents, elderly's isolation was identified as the main issue, not with the society but within them, contributing to a reluctant and hesitant environment. This concern required attention as this could feed other problems like, mental and emotional disturbance, poor coping and decreased quality of life in residents. The project was strategized by maximizing the available resources of the vicinity to ease the follow-up and continuation to achieve the goal of socialization. We planned different activities so residents with different physical abilities, background and interest can utilize their

potentials. These activities included social and leisure activities, sessions to enhance the sense of unity and belongingness, fun tactile activities, reminiscence activity and group therapy sessions, which reduced internal conflicts. Also, the staff and stake holders were involved in the planned activities to familiarize with the change these activities could bring in the residence's life and eventually safeguarding the sustainability of project. Hence, with everyone's support, we were able to make this project a success. All in all, socialization is important to protect elderly from psychological distress, enhance their wellbeing, and satisfaction with life.

*Keywords:* Elderly, Isolation, Socialization

### **11.89** INTIMATE PARTNER VIOLENCE

*Shamsa Feroz Ali Damani*  
*School of Nursing & Midwifery, Aga Khan*  
*University, Karachi*

This case study examines the effects of intimate partner violence that is a foremost issue emerging as an identifiable concern occurring globally violating the rights of women. It covers an array of behavior in any relationship that is used to uphold authority over an intimate spouse that can be physical, sexual, psychological or emotional. Furthermore, it also includes social, economic and cultural factors contributing to IPV. Whereas, alcoholism, poverty, lack of education are the aggravating factors that reduces self-control and become leading factors for partner violence. It also talks about the male-dominant society where it is believed as a cultural norm and viewed as normal behavior although it is agreed as being against Islamic teachings. Additionally, IPV interrupts one's physical health, leading to miscarriages, affecting one's reproductive health, feeling of insecurity and depression. This also encompasses children in teenage prostitution, sexual crimes causing harm to their reproductive health, delinquency and anxiety. Furthermore, the paper includes various measures to prevent IPV that is at an individual level, one should

properly counsel the couples, increase awareness about proper screening of females. At community level, we should identify the root cause of partner violence and take measures accordingly while conducting educational sessions. At society level, mass media contribution is essential to create a debate on gender discrimination practices and to embolden women's empowerment in family. Whatever deterrents are eventually put in place, domestic violence is not something anyone should endure twice.

*Keywords:* Partner violence, feeling of insecurity, teenage prostitution

### **11.90** STUDENT PERCEPTION ON TEACHING STRATEGIES OF ANATOMY AT UNDERGRADUATE MEDICAL COLLEGE

*Shazia Babar*  
*Department for Educational Development, Aga*  
*Khan University, Karachi*

*Objective:* The objective of this study is to explore the medical students perception towards anatomy teaching in the preclinical years and its clinical application in the wards.

*Methods:* A descriptive cross sectional study was done. A 28 item Likert scale questionnaire was distributed among 100 Third Year MBBS students of Bahria University Medical and Dental College. Data obtained was transferred on SPSS version 16. Descriptive statistical analysis was done to determine gender participation and number of students who have taken part in the study.

*Result:* Out of 100 third-year students 43% were male and 57% were females. 63% responded that Problem based learning and interactive sessions have made anatomy interesting. Majority of students agreed that cadaveric dissection helps in deeper understanding. Most of the students responded that clinical and radiological examination helps in better understanding of the subject.

*Conclusion:* The PMDC supports the principle that curricula should aim for application of

knowledge and problem solving rather than recall. It also states that curricula should emphasize on areas that the student must know, incorporate new fields of knowledge and yet ensure that the student is not overburdened. Anatomy courses worldwide have undergone changes bringing newer methods of teaching and learning. It is high time that medical schools in Pakistan follow and implement modern educational principles. One main method of knowing is to find out how students perceive a particular course and then to implement the suggestions as much as possible.

*Keywords:* anatomy, teaching strategies, clinical application

### **11.91** POSTGRADUATE HOSPITAL EDUCATIONAL ENVIRONMENT MEASUREMENT: A TOOL TO IDENTIFY EXPECTATIONS OF TRAINEES FOR ENHANCING TEACHING AND LEARNING

*Sheilla Pinjani*  
*Department for Educational Development, Aga Khan University, Karachi*

*Background:* The excellent educational environment is of profound importance to the goal of delivering high quality medical education.

*Objectives:* Identify the professional development needs of the trainees & satisfaction with educational environment at Aga Khan University Hospital (AKUH).

*Methods:* The PHEEM (Postgraduate Hospital Educational Environment Measure) 40 item questionnaire on 5 point scale, Scores 0 – 160; with three subscales on perceptions of Teaching = 15 items = 0 – 60, Role Autonomy= 14 items = 0 – 56, Social Support= 11 items = 0 – 44, was administered to assess the baseline satisfaction of trainees in various specialties identifying the areas needing improvement and differences in perceptions of interns vs. residents.

*Results:* PHEEM survey conducted in August 2009 for interns and residents in Medicine, Surgery, ENT and Dentistry n = 25 (71.72 / 160), n = 31 (78.39 / 160), n = 23 (63.13 / 160), n = 6 (70.17 / 160), n = 7 (88.43 / 160), shows perceptions as

plenty of problems with overall educational environment. Overall mean for role autonomy (26.10 / 56), teaching (28.08 / 60) and social support (18.82 / 44) show sub-optimal levels. There was no significant difference amongst groups using one way anova.

*Conclusion:* PHEEM has the potential to identify gaps in training and areas needing improvement. This tool has the potential to identify individualized training needs. Feedback to clinicians may facilitate focused training; and track changes over a period of time with observable improvement in educational environment.

*Keywords:* postgraduate training, educational environment, learning needs

### **11.92** STRESS MANAGEMENT IN ELDERLY

*Shelina Aslam, Shamsa Amin, Asma Sunderani, Karima Ali, Kiran Iqbal, Malik Moiz, Sehar Ijaz*  
*School of Nursing & Midwifery, Aga Khan University, Karachi*

Stress is common in elderly population they have faced stressful conditions in their lives, gone through a lot of difficulties and have survived, but at some point they are unable to cope with it. The paper highlights the project executed at a male old-age home in order to rule out stress level, associated problems and the coping strategies to promote healthy aging. The elderly living in old-age are spending their last years of life for the sake of passing time. Only few were involved in productive activities like teaching, rest remained involved in chatting with others, cigarette smoking or stayed isolated. The project's first phase involves interview, complete physical assessment and measuring stress level of individual clients. For assessing the elderly clients comprehensively, we implemented a stress management tool "Geriatric Depression Scale" which provided a clear picture that nine out of twelve male clients were experiencing mild depression whereas, two individuals scored on severe depression. The final phase involved different activities aiding in reducing the stress level, helping them to cope with it thereby improving their socialization. By identifying the

stress elderly go through, we can help them reduce their internal conflicts and promote the “we” approach rather “I” thus increasing the mutual understanding between them. Psychologically, making them strong to cope. Conclusively, continuity and provision of holistic care along with worthiness and independence should be ensured. Also, individual consideration towards elderly people should be increased to direct future research and growth of the geriatric field.

*Keywords:* Elderly, Stress, Coping

### 11.93

#### EXPLORING THE ART OF NURSING AMONG NURSES WORKING AT A TERTIARY CARE HOSPITAL IN KARACHI PAKISTAN

*Shirin Rahim*

*Nursing Services, Aga Khan University, Karachi*

*Background:* Nursing in its philosophy, is both science and art. The art of nursing motivates nurses to provide effective and individualized nursing care, and achieve the best possible health outcomes for their patients. Artful nursing has been recognized as an essential element of holistic nursing practice since the time of Nightingale; however, in today’s scientifically advances health care system the art of nursing is astonishingly deteriorating and is neglected. This study provided an opportunity for nurses of Pakistan, to reflect upon and discover the unexplored dimensions of the art of nursing.

*Methodology:* The study was guided by a qualitative exploratory descriptive design and 10 staff nurses working in six different units of the Aga Khan University Hospital (AKUH), Karachi, Pakistan were recruited through purposeful sampling strategy. A semi-structured interview guide was used to collect data and data analysis was done manually using Creswell (2013) content analysis.

*Results:* Four major themes emerged from study: artful nursing embedded in humane responsiveness, artful nursing as a healing power, artful nursing as a satisfying experience,

and artful nursing being invisible in nursing practice.

*Conclusion:* Pakistani nurses are able to articulate the meaning of the art of nursing upon reflection and know that nursing art promotes satisfaction for both patients and nurses. But, there are challenges which prevent artful nursing from becoming a permanent feature of the nursing practice for nurses in Pakistan. There are several recommendations to ensure the visibility of the art of nursing as an integral element of the nursing profession.

*Keywords:* Art of nursing, artfull nursing, nursing as an art

### 11.95

#### CLINICAL PROFILE OF PEDIATRIC SHOCK PRESETING TO EMERGENCY DEPARTMENT

*Surraiya Bano, Saleem Akhtar*

*Departments of Emergency Medicine and Paediatrics and Child Health, Aga Khan University, Karachi*

*Background:* Worldwide more than 10 million children die each year and shock is one of the causes of various etiologies among them. On initial presentation, there is significant overlap between pediatric patients with and without shock. Up till now most of the research on pediatrics shock has primarily done on septic shock in critical care settings and there is limited data on shock from emergency care settings.

*Objectives:* To determine the frequency of various types of pediatric shock in emergency department of a tertiary care hospital  
*Methodology:* it was a prospective case series of all patients less than 16 years of age presented with signs of shock i.e tachycardia, weak peripheral pulses, delayed capillary refill>2 seconds, signs of poor organ perfusion / or hypotension to emergency department of Aga Khan University Hospital, Karachi during the period of Jan 2012 to Dec 2013.

*Results:* During the study period there were total 96 cases presented with signs of shock to the emergency department. Male to female ratio was 1.9:1 and around 70% of the patients were less than 5 years of age. Majority of shock patients

were secondary to sepsis (55%) where as other types of shock were hypovolemic (30%) and cardiogenic (15%). 80% of the patients were diagnosed in early compensated phase and 20% in late or decompensated phase. 75% of the patient received fluid boluses and 28% received Inotropic support. 80% of the patients were admitted to our hospital where as 15% were transferred out due to non availability of bed in our hospital where as 2% patients were expired in ED.

*Conclusion:* Septic shock was the commonest type of pediatric shock presented to Emergency department of a tertiary care hospital.

*Keywords:* Pediatric shock, clinical profile, septic shock

### 11.96

#### COMPUTER SKILLS OF MEDICAL STUDENTS IN A PAKISTANI MEDICAL SCHOOL : A CROSS-SECTIONAL SURVEY

*Syed Arsalan Ahmed, Osama Shakeel, Mohammad Abdul Samad*

*Medical College, Aga Khan University, Karachi and Research Department, Karachi Medical and Dental College, Karachi*

*Background and Aims:* The use of information and communication technology (ICT) is rapidly increasing in medical education and practice, on account of favourable learning associated outcomes. The aim is to assess the ICT skills of a public sector medical students in Pakistan.

*Methods:* The abilities and attitude of medical students (N=299) from all pre-clinical and clinical years, studying at Karachi Medical & Dental College was assessed using the self-reported and pre-tested study questionnaire. Information related to generic and basic ICT skills, frequency of computer use, years of computer use, reasons for use and access to computers were investigated.

*Results:* 96.3% of the medical students had computer at home and 75.3% understand the basic terminology. The mean ( $\pm$ SD) months of computer use and hours per week spent in using computer were 106.89 ( $\pm$ 48.56) months and 9.76 ( $\pm$ 9.91) [hours/week], respectively. The highest levels of competence assessed using the generic ICT score were for file management, use of internet, email and word processing. Of the 16 basic skills

evaluated, only 6 (using a mouse, turning computer on and off, printing, cut and paste information, saving data, setup folders and printout document) were present in 75% of the participants. The mean ( $\pm$ SD) of the generic scores were 14.72 ( $\pm$ 7.06) out of a maximum score of 33 and for the specific ICT skills the mean ( $\pm$ SD) were 10.74 ( $\pm$ 3.84) out of a maximum score of 16. The two scores were significantly correlated,  $r = 0.59$  ( $p < 0.001$ ).

*Conclusion:* The study revealed the low level of ICT competence among medical students of a public centre medical college of Pakistan. Thus, attention is required to raise their ICT skills for personal and professional development through training workshops.

*Keywords:* Computer skills, medical students

### 11.97

#### HUMAN PAPILLOMAVIRUS (HPV) INFECTION AND P53 EXPRESSION IN ORAL SQUAMOUS CELL CARCINOMA

*Syed Muhammad Adnan Ali, Sohail Awan, Shahid Pervez, Iqbal.Azam*

*Departments of Surgery, Pathology & Microbiology and Community Health Sciences, Aga Khan University, Karachi*

*Objective:* The aim of this study was to determine the human papillomavirus (HPV) infection and p53 protein expression in oral Squamous cell carcinoma (OSCC) and there correlation with patients overall survival (OS) and disease free survival (DFS). Methods HPV general and type specific 16 and 18 were investigated by means of PCR. P53 protein overexpression was investigated by means of immunohistochemistry.

*Results:* of HPV association and p53 overexpression were evaluated in relation to different clinicopathological parameters and survival. Results: Out of 140 patients samples HPV was detected in 95 (68%) cases, out of whom 85 (90%) were associated with HPV16, 2 (2%) with HPV 18, 2 (2%) were co infected (with HPV 16 and 18), and 6 (6%) were positive for HPV by the general primer and could not be type specified. HPV positive patients had comparatively prolonged OS when compared with HPV-negative patients but this difference was not statistically



significant ( $p=0.97$ ). Furthermore, overexpression of p53 protein was observed in 75 patients (54%) using a threshold of 10% stained tumor nuclei. Patients with p53 negative tumors had improved OS when compared with patients with p53 positive tumors. This difference was statistically significant ( $p=0.036$ ) in univariate Cox regression analysis however, it lost its worth in the multivariate analysis.

*Conclusion:* Our study found a high prevalence of HPV (type 16) in OSCC of Pakistani patients with male sex showing significant correlation with HPV. However we did not find a statistically significant favorable association between p53 overexpression, HPV, survival and histologic variables.

*Keywords:* Squamous cell carcinoma, Human papillomavirus, P53 protein

### 11.98

#### BMI OR BODY FAT! WHICH SCALE TO FOLLOW?

*Syeda Sadia Fatima, Rehana Rehman, Bushra Chaudhry*

*Department of Biological & Biomedical Sciences, Aga Khan University, Karachi and Department of Physiology, Bahria University Medical and Dental College, Karachi*

*Objective:* The commonly used methods for classifying obesity or overweight fail to appropriately identify the burden of underlying disease especially in Pakistan population. This study compares two methods of classifying obesity based on body mass index (BMI) and body fat percentage (BF)

*Method:* Volunteers ( $n= 414$ ) were recruited and classified into different groups for body mass index, as per the WHO classification for south Asian population and the body fat percentage measured through bio-electrical impedance scale (BIA).

*Results:* The study included 201 males and 213 females in age group of  $25.67 + 10.10$  year. The mean BMI of the study participants was  $27.79 + 8.57$  kg/m<sup>2</sup>, and body fat was  $24.61\% + 7.61$ . We used the following classification for categorizing individual findings: i) Category I were normal/underweight values for both BMI and BF; ii)

Category II were normal/ underweight values for BMI but not for BF iii) Category III were overweight/ obese values for BMI and for BF and iv) Category IV were overweight/obese values for BMI but not for BF. Results showed 5.7% ( $n= 24$ ) candidates fell in category I, 28.0% ( $n=116$ ) in category II; 38.6% ( $n=160$ ) in category III; and 27.5% ( $n= 114$ ) in category IV. This difference of categorizing obesity between methods of classification BMI and BF was found highly significant ( $\chi^2$   $df(1) = 9/43.47$ ;  $p < 0.001$ ).

*Conclusions:* Body fat measurement should be incorporated for a better understanding as well as categorizing obesity, since these results indicate that some individuals with high body fat fell into the low BMI category, it will limit the inconsistency among classification of overweight/obese in our population.

*Keywords:* Obesity, Body Fat Percentage, BMI

### 11.99

#### PATTERN OF DELIBERATE SELF HARM ATTEMPTS IN CHILDREN & ADOLESCENTS: A RETROSPECTIVE REVIEW

*Yusra Hanif Khan, Faheem Ashraf Khan, Mohammad Zaman, Murad Moosa Khan*  
*Department of Psychiatry, Aga Khan University, Karachi*

*Introduction:* Deliberate Self Harm attempts in youth have grown exponentially across the globe in the last two decades. A systematic review of 128 studies which included 513,188 adolescents revealed that 13.2% reported engaging in self-harm at some point in their lifetime. Study conducted by Syed et al (only study on DSH in youth in Pakistan) identified family conflicts as the major reason with females: male ratio of 1.7:1 and overdose as the most frequent mode of self-harm. Our objective was to describe the pattern of deliberate self-harm in patients below 18 years presenting to Aga Khan University Hospital, Karachi, Pakistan

*Methods:* This is a retrospective study conducted at the JCIA accredited Aga Khan University Hospital (AKUH), Karachi. We reviewed files of all patients below 18 years admitted in any

specialty at Aga Khan University Hospital (AKUH) with DSH attempt during the period from January 1990 to December 2012. Ethical review exemption was taken prior to the study.

**Results:** We identified 265 cases, of which 173 were girls. Majority (91%) were in the age range of 14-18. 33% of the sample reported an intention to die while committing the act. Among reason for DSH, around 159 (60%) reported parental conflict as the major stressor. Psychiatry team, when called for consultation, made a diagnosis of Adjustment disorder in 73 cases (27%) and Depressive episode in 67 (25%). Benzodiazepine over dose was used by 55 (21%) patients and organophosphate ingestion by 40 (15%). In 175 cases (66%) the method/drug was readily available in home.

**Recommendations:** We conclude that DSH is not an uncommon presentation in C&A in Pakistan. BDZ was the most common method used for DSH and it was mostly available at home. Law of restricting medication sale over the counter should be implemented to prevent such incidences in future.

**Keywords:** deliberate self harm, children adolescents, suicide pakistan

### 11.100

#### CHALLENGES FOR THE INCLUSION OF CHILDREN WITH DISABILITY, GENDER DISPARITY AND ULTRA-POOR FOR THE ACCESS OF HEALTH, EDUCATION AND SOCIAL SERVICES IN BALOCHISTAN, PAKISTAN

Zia Sultana, Sanobar Nadeem, Dr. Ghazala Rafique  
Human Development Programme, Aga Khan University, Karachi

**Introduction:** Children participation in education, health and social institutions is their right but many children do not get these rights due to their disability, gender and poverty conditions. The Human Development Programme of the Aga Khan University is striving for the inclusion of these children in mainstreaming.

**Objectives :** 1. To understand the challenges for the inclusion of children with disabilities, ultra-poor and gender disparity. 2. Determine the recommendations of parents and caregivers for the inclusion of CWDs, ultra-poor and gender disparities. **Method:** A qualitative study design was implemented to explore the perception of parents, teachers and health workers regarding inclusion in three districts of Balochistan; Quetta, Gwadar and Qilla Saifullah. The data was analyzed in Nvivo version 2.

**Results:** Participants highlighted that children with Disabilities, girls and ultra-poor cannot mainstream in existing health, education and social services due to the lack of caregiver's knowledge in child rearing practices. A group of teachers explained that they do not have knowledge to manage disabled children at school level and they demanded that director of education should offer trainings in inclusive education. Group of LHWs revealed that a female disabled child is more prone to the victim of sexual abuse. Parents also highlighted that girls children cannot access the educational and social services due to the restriction of male family members.

**Conclusions:** Poverty, lack of knowledge and training are the barriers for the inclusion of children with disability, girl child and ultra-poor. Government must consider these issues in policy and implementations.

**Keywords:** CWD, Gender disparity, Inclusion

### 11.102

#### CLINICAL TYPES OF TINEA CAPITIS AND SPECIES IDENTIFICATION IN CHILDREN: A CROSS-SECTIONAL STUDY FROM TERTIARY CARE CENTERS OF KARACHI, PAKISTAN

Maria Farooqui<sup>1</sup>, Saadia Tabassum<sup>2</sup>, Syed Dilawar Abbas Rizvi<sup>3</sup>

<sup>1</sup>Abbasi Shaheed Hospital, <sup>2</sup>Section of internal Medicine, Department of Medicine, Aga Khan University, Karachi, <sup>3</sup>Combined Military Hospital, Multan.

**Introduction:** Tinea capitis is an infection caused by dermatophyte fungi, which is a form of superficial mycosis and has the propensity of attacking the hair shaft, follicles and surrounding skin of scalp. It is predominantly a disease of preadolescent children, adult cases being rare. Clinical presentation varies from scaly non-inflamed lesions resembling seborrheic dermatitis or psoriasis to an inflammatory disease with scaly erythematous plaque and hair loss. It may even progress to inflamed deep abscess termed “kerion”.

Despite of being a significant public health problem and a financial burden, data regarding this is scant from our population. No study from southern part of Pakistan has been published in the literature.

**Objective:** To study the clinical types of Tinea Capitis and identify species in children reporting to Dermatology Outpatients’ Department of two tertiary care centers of Karachi, Pakistan.

**Methodology:** In this prospective, cross-sectional study, 202 children, with clinical diagnosis of tinea capitis, confirmed by skin scrapings, showing fungal hyphae and spores in 10% potassium hydroxide on direct microscopy, were included in the study. Skin scrapings were cultured on Sabouraud’s agar.

**Results:** Male to female ratio was 1.1:1 and ages ranged from 1 to 14 years. The commonest clinical type gray patch was observed in 35% of patients, black dot in 31%, kerion in 24%, favus in 5%, diffuse pustular in 3%, and diffuse scale in 1% of patients. The most frequent species grown on culture was *Trichophyton (T).Soudanense*, followed by *T.Tonsurans*, *T. Schoenleinii*, and *T.Mentagrophytes* respectively.

**Conclusion:** Most of the patients of Tinea capitis presented with gray patch and blackdot variety. The most common species identified by culture was *Trichophyton Soudanense*. Disease was equal in both sexes and predominantly affected the population belonging to low and middle socioeconomic class.

**Keywords:** Hair loss, Tinea capitis, clinical variants

### 11.103 HAIR DYE POISONING AND RHABDOMYOLYSIS: A CASE REPORT

*Munira M Ali Khan, Nosheen Nasir, Faisal Mahmood, Sara Sajid*  
*Section of internal Medicine, Department of Medicine, Aga Khan University, Karachi*

**Introduction:** Hair dye ingestion is a rare cause of toxicity in Pakistan. There are several case reports from India with variable presentations of hair dye toxicity. We are presenting case report of a patient with accidental hair dye ingestion.

**Case Presentation:** A 55 years male who accidentally ingested hair dye. Within 2 hours, he developed acute respiratory distress, facial edema, plethora and stridor. He underwent emergent tracheostomy in a nearby hospital and was transferred to AKUH ER. In the ER, he was managed for trachietis along with aspiration pneumonitis and chemical esophagitis. He was transferred to the special care unit where he was found to have decreased urine output. On catheterized there he was noticed to have red colored urine. Lab work up revealed acute kidney injury. BUN 17 mg/dl/Cr 1.5 mg/dl increased to BUN 67 mg/dl /Cr 4.4 mg/dl. Electrolytes revealed hyperkalemia and acidosis K 5.3 mmol/L BIC 18.5mmol/L. CPK was sent which was 39863 IU/L and Phosphate 7.8 mg/dl. Diagnosis of rhabdomyolysis was made. Patient was aggressively hydrated, and urine was alkalinized with IV bicarbonate. Despite this, he developed oliguria and worsening azotemia, and had to be placed on hemodialysis.

**Result:** After few sessions of hemodialysis his urine output improved and renal functions stabilized without any requirement for long term hemodialysis.

**Conclusion:** Hair dye toxicity can be fatal if not recognized early. There is no antidote available. Rhabdomyolysis is a complication and needs to be managed aggressively in order to prevent long term morbidity.

**Keywords:** Hair dye ingestion, poisoning, rhabdomyolysis, renal failure

### 11.104

#### MODIFIED EARLY WARNING (MEW) SCORE: A COST-EFFECTIVE TOOL IN PREDICTING IN-HOSPITAL OUTCOMES OF ACUTELY ILL MEDICAL PATIENTS AT THE AGA KHAN UNIVERSITY HOSPITAL

*Bushra Jamil, Mehrin Anees, Najeeha Talat, Jaweed Akhter*  
*Section of internal Medicine, Department of Medicine, Aga Khan University, Karachi*

**Introduction:** Early warning systems are useful in rapid identification of patients who require close monitoring and aggressive treatment to ensure a good outcome. A major initiative is currently directed towards reducing mortality from treatable conditions like sepsis, early and aggressively as this has been shown to reduce mortality significantly. One of the strategies for identification and monitoring of admitted medical patients who may need more aggressive treatment and higher level of care, is utilizing scoring systems which rely on a composite of clinical markers. One such system is the Modified Early Warning (MEW) scoring system. This is a simple bed-side tool which can be administered by a physician or a nurse. We conducted this study to look at the utility of MEW score in identifying in-hospital outcomes of our patients.

**Objective:** To assess the utility of MEWS as a marker of severity of illness and outcome in medical patients on admission

**Methods:** One hundred and twelve consecutive patients who fulfilled the criteria of admission to the medical service from the emergency room of AKUH over a 6 month period (August 2010 till February 2011) were included. MEW scores of these patients were calculated once at the time of admission; the patients were followed till their discharge or death. Four groups were defined based on their MEW scores: 0-1, 2-3, 4-5 and >5. Fischer's exact test was used to calculate statistical differences between the groups based on MEWS and their association with the outcome.

**Results:** There were 112 patients in all. 56 were males and 56 were females. Mean age was 52 ±2. Patients with MEW Score 0-1 were 14.3%,

2-3 were 32.1% ,4-5 were 34.8% and >5 were 18.8%.76.8% were discharged and 23.2% died. In patients with MEWScore >5,8.1% were discharged but 53.8% died as compared to patients having MEWS 0-1 (p=0.000001). No mortality was observed in patients who had a MEW score of 0-1 on admission.

**Conclusions:** A single calculation of modified early warning score at the time of admission is a reliable predictor of in-hospital mortality in our patients. Acutely ill patients and those at imminent risk of deterioration are identified quickly on the basis of clinical criteria alone, making MEWS a cost-effective tool in triaging patients, prioritizing admission to high dependency areas and predicting outcomes. Moreover, this tool can be used at any type of set-up (secondary and tertiary care) in a resource-poor country to identify patients in indeed of urgent intensive care.

**Keywords:** MEWS, prediction of in-hospital outcome

### 11.105

#### EFFECTS OF POLY PHARMACY ON ADVERSE DRUG REACTIONS AMONG GERIATRIC OUTPATIENTS AT A TERTIARY CARE HOSPITAL IN KARACHI

*M. Junaid Patel, Bilal Ahmed, Kashmira Nanji, Rakhshinda Mujeeb*  
*Section of internal Medicine, Department of Medicine, Aga Khan University, Karachi*

**Background:** Adverse drug-related events (ADRs) present a challenge and expensive public health problem. Poly-pharmacy is defined according to WHO criteria as, "concurrent use of five or more different prescription medication". Elderly are more prone to adverse reactions due to more comorbid, longer list of medications and sensitivity to drug effects.

**Objective:** The overall aims of the study are to estimate the ADRs due to poly-pharmacy among the geriatric cohort attending outpatient clinics at a tertiary care center and to determine the strength of association of ADRs due to poly-pharmacy in the mentioned population.

**Methods:** A hospital based prospective cohort study was conducted at ambulatory care clinics of Aga Khan University between January to December 2012. One thousand geriatrics patients (age  $\geq$  65 years) visiting clinics were identified. They were divided on the basis of exposure (poly pharmacy vs. no poly pharmacy). We followed them from the time of their enrollment (day zero) to once weekly till six weeks. Incidence was calculated and Cox proportional hazard model estimate was used.

**Results:** The occurrence of poly pharmacy was 68%. The incidence of ADRs with poly pharmacy was 10.5%. Majority (30%) patients cannot read or write. Use of herbal medicine was reported by 3.2% and homeopathic by 3%. Our Cox adjusted model shows that poly pharmacy was 2.3 times more associated with ADRs, con-current homeopathic use was 7.4 times and those who cannot read and write was 1.5 times more associated with ADRs.

**Conclusion:** The incidence of ADRs due to poly pharmacy is high. The factors associated with ADRs are modifiable. Policies need be design to strengthen the prescription pattern.

**Keywords:** Adverse drug reactions, poly-pharmacy

### 11.106 COUGH AS PRIMARY COMPLAIN IN CASE OF SARCOIDOSIS

*Naveed Haroon Rashid, Ali Zubairi  
Section of Pulmonary and Critical Care Medicine,  
Department of Medicine, Aga Khan University  
Karachi*

**Introduction:** Sarcoidosis is a multisystem granulomatous disorder of unknown etiology that affects individuals worldwide and is characterized pathologically by the presence of noncaseating granulomas in involved organs. It typically affects young adults, and initially presents with Bilateral hilar adenopathy, Pulmonary reticular opacities or Skin, joint, and/or eye lesions abnormalities

**Case History:** Young female with history of cough for 2 month with progressive dyspnea. Clinical examination was unremarkable except she was a bit tachypnic, CT scan done was consistant with nodularities bilateral more distributed along the bronchovascular bundlel ,there was also some ground glass opacities as well.

Bronchoscopy was done which shows bilateral inflamed mucosa with nodularities,BAL was done from right and left upper lobe.,and biopsy was taken from right upper lobe where nodular mucosa was prominent. BAL D/R was consistant with neutrophilic fluid, and biopsy done shows chronic granulomatous inflammation likely TB or Sarcoid. Her ACE level was also high so with clinical correlation she was labeled as Sarcoid and was started on steroid. All her BAL cultures were negative.

**Conclusion:** Tuberculosis and Sarcoidosis are very difficult to differentiate even on biopsy , clinical scenario are also very similar so it happens many times that people with Sarcoid got treated with ATT in this part of the globe, so it is necessary to correlate History, clinical examination,and laboratory findigs.

**Keyword:** Sarcoid, tuberculosis, bronchoalveolar lavage

### 11.107 ATTITUDES AND BELIEFS ABOUT COPD: DATA FROM THE BREATHE STUDY

*Abdullah Sayiner<sup>a</sup>, Ashraf Alzaabi<sup>b</sup>, Nathir M. Obeidat<sup>c</sup>, Chakib Nejjari<sup>d</sup>, Majed Beji<sup>e</sup>, Esra Uzasslan<sup>f</sup>, Salim Nafti<sup>g</sup>, Javaid Ahmed Khan<sup>h</sup>, Mohamed Awad Tageldin<sup>i</sup>, Majdy Idrees<sup>j</sup>, Nauman Rashid<sup>k</sup>, Abdelkader El Hasnaoui<sup>k</sup>,  
\*A, on behalf of the BREATHE Study GroupB, <sup>a</sup> Ege University, Izmir, Turkey,<sup>b</sup> Zayed Military Hospital, Abu Dhabi, UAE, <sup>c</sup> University of Jordan, Amman, Jordan,<sup>d</sup> Faculty of Medicine of Fez, Fez, Morocco, <sup>e</sup> La Rabta Hospital, Faculty of Medicine of Tunis, University of Tunis El Manar, Tunisia, <sup>f</sup>Uludag University Medical Faculty, Bursa, Turkey, <sup>g</sup>Mustapha Bacha Hospital, Alger, Algeria,<sup>h</sup> Aga Khan University Hospital, Karachi, Pakistan, <sup>i</sup>Ain Shams University, Cairo, Egypt,<sup>j</sup> Riyadh Military Hospital, Riyadh, Saudi Arabia,  
<sup>k</sup>GlaxoSmithKline, Dubai, UAE*

**Summary:** Although COPD is a debilitating pulmonary condition, many studies have shown awareness of the disease to be low. This article presents data on attitudes and beliefs about COPD in subjects with respiratory symptoms

participating in the BREATHE study in the Middle East and North Africa region. This study was a large general population survey of COPD conducted in ten countries of the region (Algeria, Egypt, Jordan, Lebanon, Morocco, Saudi Arabia, Syria, Tunisia, Turkey and United Arab Emirates), together with Pakistan, using a standardised methodology. A total of 62,086 subjects were screened, of whom 2,187 fulfilled the “epidemiological” definition of COPD. A detailed questionnaire was administered to these subjects, which documented knowledge about the disease, attitudes to care, beliefs about COPD and satisfaction with treatment. 1,392 subjects were analysable. Overall, 58.6% of subjects claimed to be very well or adequately informed about their respiratory condition. Two-thirds of subjects reported receiving information about COPD from their physician and 10.6% from television; the internet was cited by 6% and other health professionals or patient associations by <1%. Several inappropriate beliefs were identified, with 38.9% of respondents believing that there were no truly effective treatments, 73.7% believing that their respiratory condition would get progressively worse regardless of treatment and 29.6% being unsure what had caused their respiratory problems. Although 81% of respondents believed that smoking was the cause of most cases of COPD in general, only 51% accepted that it was the cause of their own respiratory problems. Treatment satisfaction was relatively high, with 83.2% of respondents somewhat or very satisfied with their physician’s management, in spite of the fact that only 47.5% considered that their physician’s advice had helped them manage their respiratory symptoms a lot. In conclusion, awareness of COPD in the region is suboptimal and treatment expectations are undervalued. Better patient education and more effective patient physician communication are clearly required.

### 11.108

#### THE BURDEN OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN THE MIDDLE EAST AND NORTH AFRICA: RESULTS OF THE BREATHE STUDY

*Esra Uzaslan<sup>a</sup>, Bassam Mahboub<sup>b</sup>, Majed Beji<sup>c</sup>, Chakib Nejjari<sup>d</sup>, Mohamed Awad Tageldin<sup>e</sup>, Javaid Ahmed Khan<sup>f</sup>, Salim Nafti<sup>g</sup>, Nathir M. Obeidat<sup>h</sup>, Abdullah Sayiner<sup>i</sup>, Siraj Wali<sup>j</sup>, Nauman Rashid<sup>k</sup>, Abdelkader El Hasnaoui<sup>k</sup>*  
*\*A, on behalf of the BREATHE Study GroupB, <sup>a</sup>Uludag University Medical Faculty, Bursa, Turkey, <sup>b</sup>University of Sharjah, UAE<sup>c</sup>, University of Tunis El Manar, Faculty of Medicine of Tunis, La Rabta Hospital, Tunis, Tunisia, <sup>d</sup>Faculty of Medicine of Fez, Fez, Morocco, <sup>e</sup>Ain Shams University, Cairo, Egypt, <sup>f</sup>Aga Khan University Hospital, Karachi, Pakistan, <sup>g</sup>Mustapha Bacha Hospital, Algiers, Algeria, <sup>h</sup>University of Jordan, Amman, Jordan, <sup>i</sup>Ege University, Izmir, Turkey, <sup>j</sup>King Abdulaziz University, Jeddah, Saudi Arabia, <sup>k</sup>GlaxoSmithKline, Dubai, UAE*

*Summary:* COPD is a progressive pulmonary disease which may have a profound impact on general health status and quality of life. This article presents data on the burden of COPD obtained from the BREATHE study in the Middle East, North Africa and Pakistan. This study was a large general population survey of COPD conducted in eleven countries of the region using a standardised methodology. A total of 62,086 subjects were screened, of whom 2,187 fulfilled the “epidemiological” definition of COPD. Data on symptoms, perceived disease severity, impact on work, limitations in activities and psychological distress were collected. 1,392 subjects were analysable of whom 661 (47.5%) reported experiencing an exacerbation of their respiratory condition, 49.4% reported comorbidities and 5.5% reported severe breathlessness as measured with the MRC breathlessness questionnaire. The degree of breathlessness, as well as the perceived severity, was correlated with the overall disease impact as measured with the COPD Assessment Test ( $p < 0.001$ ). 374 subjects (28.4%) reported that their respiratory condition prevented them from

working and this proportion rose to 47.8% in subjects who perceived their respiratory condition as severe. 47.9% of subjects reported difficulties in normal physical exertion, 37.5% in social activities and 31.7% in family activities. Psychological distress was reported by between 42.3% and 53.2% of subjects, depending on the item. In conclusion, the burden of COPD is important, and covers central aspects of daily life. For this reason, physicians should take time to discuss it with their patients, and ensure that the management strategy proposed addresses all their needs.

**11.109**  
DISTRIBUTION OF COPD-RELATED SYMPTOMS IN THE MIDDLE EAST AND NORTH AFRICA: RESULTS OF THE BREATHE STUDY

*Tageldin MA, Nafti S, Khan JA, Nejjari C, Beji M, Mahboub B, Obeidat NM, Uzaslan E, Sayiner A, Wali S, Rashid N, El Hasnaoui A; BREATHE Study Group, Alzaabi A, Beji M, Ben Kheder A, Idrees M, Iraqui G, Javaid A, Khan JA, Khattab A, Koniski ML, Mahboub B, Nafti S, Obeidat NM, Polatli M, Sayiner A, Shahrouf N, Tageldin MA, Taright S, Uzaslan E, Wali S, El Hasnaoui A, Rashid N, Lahlou A, Doble A, Salhi H, Nejjari C.*

Chronic obstructive pulmonary disease (COPD) is a major cause of morbidity and mortality worldwide. However, its epidemiology in many developing countries is poorly characterised. The objective of this analysis was to evaluate respiratory symptoms which could be COPD-related in a large sample of individuals aged  $\geq 40$  years in ten countries in the Middle East and North Africa (Algeria, Egypt, Jordan, Lebanon, Morocco, Saudi Arabia, Syria, Tunisia, Turkey and United Arab Emirates), together with Pakistan, using a standardised methodology. A random sample of 457,258 telephone numbers was contacted. A screening questionnaire was administered to each eligible participant, which included six questions relating to respiratory symptoms. Of 65,154 eligible subjects, 62,086 agreed to participate and 61,551 provided usable

data. The age- and gender-adjusted prevalence of symptoms (persistent productive cough or breathlessness or both) was 14.3% [95% CI: 14.0-14.6%], ranging from 7.2% in UAE to 19.1% in Algeria. Symptoms were more frequent ( $p < 0.0001$ ) in women (16.7%) than in men (12.2%). The adjusted prevalence of COPD according to the "epidemiological" definition (symptoms or diagnosis and cigarette use  $\geq 10$  pack · years) was 3.6% [95% CI: 3.5-3.7%] (range: 1.9% in UAE to 6.1% in Syria). COPD was more frequent ( $p < 0.0001$ ) in men (5.2%) than in women (1.8%). The frequency of symptoms was significantly higher in cigarette smokers ( $p < 0.001$ ), as well as in waterpipe users ( $p < 0.026$ ). In conclusion, the prevalence of COPD in this region seems to be lower than that reported in industrialised countries. Under-reporting and risk factors other than smoking may contribute to this difference.

**11.110**  
FREQUENCY OF LUNG DECLINE IN ASYMPTOMATIC PATIENT BY USING FEV1

*Naveed Haroon Rashid, Javaid Ahmed Khan  
Section of Pulmonary and Critical Care  
Medicine, Department of Medicine, Aga Khan  
University Karachi*

*Introduction:* Smoking is a malicious curse of world today. Smoking related diseases kill one in ten adults globally. Smoking is the single largest preventable cause of disease and premature death. It is a prime etiologic factor in heart disease, stroke and chronic lung disease. There is mounting evidence of the harmful effect of passive smoking. Smoking causes airway obstruction, chronic expectoration and decline in lung functions.

All these effects are directly proportional to number of pack years and there is definite tendency to narrowing of both the larger and smaller airways.

Spirometry is the best method to detect borderline to mild airway obstruction, which occurs early without appearance of any symptoms or signs. (5) FEV1 is the most

important spirometric variable for assessment of airflow obstruction.(6 ) There is a close relationship between the amount of tobacco smoked and the rate of decline in forced expiratory volume in one second (FEV1), although individuals vary greatly in susceptibility.

*Objective:* The purpose of this study is to measure FEV1 in asymptomatic smokers because it carries huge implications for revolutionizing primary health care as spirometry has till date not been completely considered a part of routine medical examination despite the high burden of respiratory obstructive diseases. This could potentially be due to the fact that very few studies to evaluate the role of spirometry have been carried out in the context of the local population in underdeveloped countries where the prevalence of COPD is not known. This study can help counseling of patients that earlier detection of airflow obstruction and smoking cessation may result in significant health gain and Smoking cessation reduces the accelerated rate of decline of FEV1 found in current smokers compared to ex-smokers and can be used to convince people to quit smoking.

*Material and methods:* The cross sectional study will be carried out prospectively in the outpatient spirometric unit of the Aga Khan University Hospital, Karachi. This will be a six month study. The study will commence after approval following approval of synopsis by Research evaluating unit(REU), College of Physicians and Surgeons Pakistan.

*Sample size:* From the literature, According to spirometric results 38% smoker had confirmed COPD (10). Therefore taking the frequency of 38%, with a bound on error of 0.09 (9%), an alpha significance level of 0.05 with a 95% CIs, a sample of at least 112 will require to achieve this objective.

### **11.111** **WEGENERS PRESENTING AS HEARING LOSS AS INITIAL COMPLAINT**

*Naveed Haroon Rashid, Ali Zubairi*  
*Section of Pulmonary and Critical Care*  
*Medicine, Department of Medicine, Aga Khan*  
*University Karachi*

**Introduction:** Granulomatosis with polyangiitis (Wegener's), which can be abbreviated as GPA, is a complex, immune-mediated disorder in which tissue injury results from the interplay of an initiating inflammatory event and a highly specific immune response. Part of this response is directed against previously shielded epitopes of neutrophil granule proteins, leading to high titer autoantibodies known as anti-neutrophil cytoplasmic antibodies (ANCA). The production of ANCA is one of the hallmarks of GPA and related forms of vasculitis. ANCA are directed against antigens present within the primary granules of neutrophils and monocytes; these antibodies produce tissue damage via interactions with primed neutrophils and endothelial cells.

Patients with GPA or MPA are initially treated with immunosuppressive therapy to induce remission, most often consisting of glucocorticoids in combination with either cyclophosphamide or rituximab. Patients who attain remission are then treated with azathioprine or methotrexate, which are less toxic than cyclophosphamide, and low-dose glucocorticoids to maintain the remission. The usual duration of maintenance therapy after stable remission has been induced is 12 to 18 months. More prolonged maintenance therapy should be considered in patients who have multiple disease relapses.

*Case history:* 35 male no comorbids work in sui southern, non smoker.

*Presenting complaint:* Presented with history of hearing loss, wt loss, on and off fever, few episode of epistaxis 2 month history  
Now had increase dyspnea so was admitted for further work up

*Physical examination:* Thin lean man lying in bed slightly tachypnic seems to be dehydrated



Vitally he was tachycardiac and tachypnic. Chest auscultation was consistent with occasional crackles otherwise was NVB

On general physical examination there were vasculitic lesion bilateral foot and rt thigh from where biopsy was done, which shows leukocytoclastic vasculitis which is found with Wegener's granulomatosis. C-ANCA was also positive. His CT scan was consistent with cavitary nodules and b/l patchy consolidation. His bronchoscopy was done which on examination was unremarkable but grows initially staph aureus which was sensitive to methicillin, his line probe assay was also positive for TUBERCULOSIS., so he was started on ATT, but in 72 hours post treatment his dyspnea worsened and he was again brought back to ER where his CXR shows worsening and he was intubated because of respiratory distress and shifted to ICU where was treated on ground of ARDS., But his condition continue to deteriorate and he expire within 6 hours of ICU admission

**Conclusion:** This patient most likely developed hospital acquired infection likely pneumonia leading to ARDS, as he was already immunocompromised because of steroid use.

**Keywords:** Granulomatosis, polyangitis, ARDS

### 11.112 FAMILIAL IDIOPATHIC PULMONARY FIBROSIS IN TWO PAKISTANI SIBLINGS

*Nadia Sharif, Muhammad Irfan  
Section of Pulmonary and Critical Care  
Medicine, Department of Medicine, Aga Khan  
University Karachi*

**Introduction:** Idiopathic pulmonary fibrosis (IPF) is fatal interstitial lung disease. At present, lung transplantation is the only hope for improved survival.

Familial idiopathic pulmonary fibrosis is an interstitial lung disease of unknown cause with pathological findings of usual interstitial pneumonia (UIP) in two or more family members of same biological family. Familial variant is clinically indistinguishable from

sporadic cases. Its average survival is 2-3 years after diagnosis.

We report a case of familial IPF in two siblings who had rapidly progressive respiratory failure proved fatal in one brother and making other a pulmonary cripple.

**Case:** A 30 year-old gentleman presented for evaluation of progressive shortness of breath associated with dry cough for 1 year. There was no associated chest pain, hemoptysis, weight loss, arthralgias, myalgias or body rash. His family history was significant as his younger brother died of similar illness about 1 year back.

At presentation his vitals were stable. There were no palpable lymph nodes, Jaundice, edema, JVP or body rash. The chest examination revealed bilateral end inspiratory velcro like crackles in middle and lower part of chest. Rest of the systemic examination was unremarkable.

His blood counts, renal functions, liver function tests were within normal limits. Chest-X-ray showed reduced lung volumes with interstitial shadowing and shaggy diaphragm and heart borders. HRCT chest showed septal thickening, traction bronchiectasis and evidence of honeycombing in lower lobes bilaterally. Patient underwent lung biopsy through VATS, which showed findings consistent with UIP: distorted lung architecture with areas of honeycombing. Few air spaces having polypoid projection of fibrous tissues into the lumina along with collection of foamy histiocytes. Interstitium showed fibrosis and chronic inflammation. Autoimmune workup including Rheumatoid factor and ANA was homogeneously positive. Patient was started on Azathioprin and Deltacortil. He has been referred for lung transplantation.

**Conclusion:** FIPF is a rare subset of IPF with almost similar clinical, radiological, histopathological features and outcome. Once the knowledge about all culprit genes responsible for FIPF become available, the screening of susceptible family members, prenatal genetic testing, genetic counseling and avoidance of other known risk factors like smoking and GERD may help us to intervene earlier at amenable phase of disease. Currently lung transplantation is the only hope for survival.

**Keywords:** Familial idiopathic pulmonary fibrosis, lung transplantation, lung disease

### 11.113 YOUNG LADY WITH HYPERSENSITIVITY PNEUMONITIS POST FUMIGATION

*Sidra Kiran, Ali Zubairi*  
*Section of Pulmonology, Department of*  
*Medicine, Aga Khan University Karachi*

**Introduction:** The hypersensitivity pneumonitis (HP) or extrinsic allergic alveolitis (EAA) is a pulmonary disease that occurs in response to inhaled organic material, or even of simple chemicals, organic and inorganic with symptoms of cough, fever, chills, wheezing and shortness of breath. The prevalence and incidence of HP appear to vary considerably depending upon case definitions, intensity of exposure to inciting antigens, season, geographical conditions, proximity to certain industries, and host risk factors. It has been divided into three forms, acute, subacute and chronic depending on onset of symptoms, exposure of inciting agent and radiological and histopathological findings and choice of treatment.

**Case:** 45 year old female, hypertensive. Admitted with complaint of shortness of breath, cough for 2 weeks and fever for 3 days. Symptoms started after fumigation. No prior history of allergies, pets at home. On examination there O<sub>2</sub> sats=95% on RA. CXR showed bilateral peribronchial infiltrates. HRCT done which showed randomly distributed patchy areas of consolidation and ground glass opacification predominantly in bilateral lower lobes with preserved lung volume. With the suspicion of hypersensitivity pneumonitis she was started on oral prednisolone and later discharged home. Patient was non-complaint to prednisolone. She got re-admitted after few months with worsening symptoms. Her RA sats were 85%. However CXR showed no new change. Bronchoscopy done which showed normal airways, BAL was negative for any microbiological etiology. ANA profile was inconclusive. She was treated with prednisolone. CT chest with contrast showed improvement in patchy consolidation and ground glass opacification. PFT showed nonspecific airway disease. To get a diagnosis, surgical lung biopsy was done, tissue AFB and fungus came out to be

negative. Histopathology revealed heterogeneity with relatively preserved lung parenchyma with interstitial expansion due to fibrosis, acute on chronic inflammatory cells along with plasma cells and some evidence of honeycombing. Sub-pleural fibrosis seen. Patient was continued on steroids and clinical improvement seen, long term home oxygen therapy initiated along with pulmonary rehabilitation. Patient was later discharged to the outpatient service.

**Conclusion:** Hypersensitivity pneumonitis (extrinsic allergic alveolitis) is a syndrome caused by repeated inhalation of specific antigens from occupational or environmental exposure in sensitized individuals. Continuous exposure to the antigen can lead to fibrosis which can be irreversible and resistant to any treatment. Knowledge of HP evolution is essential, particularly in the professional level as continuous exposure can lead to morbidity as in case of our patient.

**Keywords:** hypersensitivity pneumonitis, BAL.

### 11.114 PREVALENCE OF BODY-FOCUSED REPETITIVE BEHAVIORS IN THREE LARGE MEDICAL COLLEGES OF KARACHI: A CROSS-SECTIONAL STUDY

*Efaza Umar Siddiqui, Syed Saad Naeem, Haider*  
*Naqvi, Bilal Ahmed\**  
*Section of Internal Medicine, Department of*  
*Medicine, Aga Khan University, Karachi*

**Background:** Body-focused repetitive behaviors (BFRBs) that include skin picking (dermatillomania), hair pulling (trichotillomania) and nail biting (onychophagia), lead to harmful physical and psychological sequelae.

The objective was to determine the prevalence of BFRBs among students attending three large medical colleges of Karachi. It is imperative to come up with frequency to design strategies to decrease the burden and adverse effects associated with BFRBs among medical students.

**Methods:** A cross-sectional study was conducted among 210 students attending Aga Khan

University, Dow Medical College and Sind Medical College, Karachi, in equal proportion. Data were collected using a pre tested tool, "Habit Questionnaire". Diagnoses were made on the criteria that a student must be involved in an activity 5 times or more per day for 4 weeks or more. Convenience sampling was done to recruit the participants aged 18 years and above after getting written informed consent.

**Results:** The overall prevalence of BFRBs was found to be 46 (22%). For those positive for BFRBs, gender distribution was as follows: females 29 (13.9%) and males 17 (8.1%). Among these students, 19 (9.0%) were engaged in dermatillomania, 28 (13.3%) in trichotillomania and 13 (6.2%) in onychophagia.

**Conclusions:** High proportions of BFRBs are reported among medical students of Karachi. Key health messages and interventions to reduce stress and anxiety among students may help in curtailing the burden of this disease which has serious adverse consequences.

**Keywords:** BFRBs, dermatillomania, trichotillomania, onychophagia

### 11.115 GENERAL PRACTITIONERS' KNOWLEDGE AND APPROACH TO CHRONIC KIDNEY DISEASE IN KARACHI, PAKISTAN

*Sonia Yaqub<sup>1</sup>, Waqar Kashif<sup>1</sup>, Mohammad Qasim Raza<sup>2</sup>, Hina Aaqil<sup>2</sup>, Ahmed Shahab<sup>2</sup>, Muhammad Ali Chaudhary<sup>2</sup>, Syed Ather Hussain<sup>1</sup>*

<sup>1</sup>Section of Nephrology, Department of Medicine, <sup>2</sup>Aga Khan University Medical College, Aga Khan University, Karachi

**Background:** Due to lack of adequate number of formally trained nephrologists in our part of the world, many patients with chronic kidney disease (CKD) are seen by general practitioners (GPs). This study was designed to assess the knowledge of the GPs regarding identification of CKD and its risk factors, and evaluation and management of risk factors as well as complications of CKD.

**Methods:** We conducted a cross-sectional survey of 232 randomly selected GPs from Karachi during 2011. The data was collected on a structured questionnaire based on the Kidney Disease Outcomes and quality Initiatives recommendations on screening, diagnosis and management of CKD.

**Results:** A total of 235 GPs were approached, and 232 consented to participate. Mean age was  $38.5 \pm 11.26$  years; 56.5% were males. Most of the GPs knew the traditional risk factors for CKD i.e. diabetes (88.4%) and hypertension (80%), but were less aware of other risk factors. Only 38% GPs were aware of estimated glomerular filtration rate in evaluation of patients with CKD. Only 61.6% GPs recognized CKD as a risk factor for cardiovascular disease. Only 40% and 29% GPs knew the correct goal systolic and diastolic BP, respectively. 41% GPs did not know when to refer the patient to a nephrologist.

**Conclusion:** Our survey identified specific gaps in knowledge and approach of GPs regarding diagnosis and management of CKD. Educational efforts are needed to increase awareness of clinical practice guidelines and recommendations for patients with CKD among GPs, which may improve management and clinical outcomes of this population.

**Keywords:** Chronic kidney disease, general practitioners, glomerular filtration

### 11.116 ERROR IDENTIFICATION IN A HIGH VOLUME CLINICAL CHEMISTRY LABORATORY: A STEP TOWARDS QUALITY IMPROVEMENT WITH SIX SIGMA METRICS

*Lena Jafri, Shahid Shakeel, Farooq Ghani, Aysha Habib Khan, Imran Siddiqui*  
Department of Pathology & Microbiology, Aga Khan University, Karachi

**Background:** Quality indicators are an important tool in improving laboratory service by monitoring error trend. Six sigma metrics provide assurances that higher testing volumes

will not increase testing errors and affect patient care. Quality is assessed on the  $\sigma$  scale with a criterion of 3  $\sigma$  as the minimum allowable sigma for routine performance and 6 being the goal for world-class quality.

*Objective:* To determine the frequency of errors utilizing the quality indicators in clinical chemistry laboratory and to convert errors to sigma scale.

*Methods:* The quality indicators of the clinical chemistry laboratory were compiled and evaluated to describe the frequency of errors observed during a 5 year period from 1st Jan 2008 – 31st Dec 2012. An “error” was defined as defect during the entire testing process from the time requisition is raised and phlebotomy is done till result dispatch. Ethical exemption was taken from ethical review committee of AKU.

*Results:* In 5 years period a total of 6,792,020 specimens were received in the laboratory. Among a total of 17,631,834 analyses, 85.2% were outside referrals. From the total tests 723751 were stat, stat delays being 3 per 403 specimens/day (3.9 sigma).

Errors were detected in 19241 tests with a total error rate of 0.11 % (4.6 sigma). Hemolysis was the most common error, a total of 10520 specimens being affected (4.7 sigma). The distribution of errors in 5 years was 93.5% preanalytical, 5.8 % analytical and 0.6 % post analytical.

*Conclusions:* Most of the errors were pre-analytical and the lab performance was 99.4% defect free as per sigma metrics.

*Keywords:* quality control, quality indicators, laboratory proficiency testing

# **Public Health**

## 12.1

### A SURVEY TO ASSESS THE FEMALE SEXUAL HARASSMENT IN THE HIGHER EDUCATIONAL INSTITUTES OF KARACHI

Zulfiqar Ali Shaikh  
Community Health Sciences, Dow University of Health Sciences, Karachi,

*Background:* Sexual harassment is a serious social issue and women from every walk of life are affected by it. Perceptions differ about what behaviors constitute sexual harassment. The cases are not reported by victims because of various reasons. Sexual harassment is the least spoken issue in Pakistani society.

*Objectives:* To determine the nature and frequency of exposure of female students to sexual harassment at higher educational institutes; and explore adverse effects on the victims and coping strategies implied by them.

*Method:* From ten educational institutes, 480 female students were conveniently selected, and were provided a questionnaire with their consent. Their identity was kept secret. The study was conducted from January to September, 2013.

***Results:* A total of 460 students returned filled questionnaires. Among them, 65% reported sexual harassment of various degrees/levels. They were harassed by fellow students (37%), faculty (32%), staff (2%) and strangers (64%) including patients/attendants, visitors and passersby. The victims reported feelings of powerlessness, humiliation, disbelief, shock, anger, fear, anxiety/depression, badly affected studies, and transient suicidal tendencies. Though 98% wanted punishment for the harassers, yet 78% were reluctant to disclose perpetrators because of the fear of exploitation, social taboo, further embarrassment, adverse consequences, and career obstacles.**

*Conclusion:* Sexual harassment seems prevalent in various forms at higher level educational institutes. Many cases go unreported. The victims were unwilling to talk against their agony because of the fear of humiliation for themselves and their families.

*Keywords:* Female, sexual harassment, educational institutes

## 12.2

### WEALTH STATUS INFLUENCE ON REPRODUCTIVE HEALTH INDICATORS: DEMOGRAPHIC AND HEALTH SURVEY, PAKISTAN 2006-07 – A MULTI-LEVEL CROSS-SECTIONAL ANALYSIS

Adeel Ahmed Khan, Ashar Malik, Zafar Fatmi  
Department of Community Health Sciences, Aga Khan University, Karachi

*Introduction:* Wealth status is considered an important determinant of use of contraception and attainment of fertility goals. It is imperative to study the magnitude of impact of individual and community level wealth status on reproductive health. The objective of our study was to determine the independent impact of wealth status on reproductive health indicators using validated indices in Pakistan.

*Method:* Pakistan Demographic and Health Survey 2006-07 dataset were used for secondary data analysis. Individual and community socioeconomic status with contraceptive use were examined for usage among n=9177 women aged 15–49. Community level wealth index was developed as a second level variable. Multilevel logistic regression was done to determine the impact of individual and community level wealth indices on contraceptive usage.

*Results:* Younger respondents and the poorest respondents are more likely to be a non-user of contraceptives than older and the richer respondents. The odds of non-users of contraceptives was highest in Baluchistan (OR=2.47) compared to Punjab province (reference case). In multilevel regression, after adding the community level wealth index, the odd ratios of certain variables were retrenched in magnitude (Model 1 OR for poorest individual quintile 3.78 to Model 2 OR for poorest individual quintile 3.01).

*Conclusion:* Community level socioeconomic status did not have the significant effect on contraception usage except for the poorest quintiles. However, contextual factors have diluted the magnitude of effect of individual wealth status. Existing programs need to be strengthened for vulnerable population in Pakistan.

*Keywords:* Wealth status, reproductive health, Demographic and health survey, Pakistan

### 12.3

#### ASSESSING THE BURDEN OF ASTHMA AMONG CHILDREN IN AN URBAN CITY; FINDINGS FROM THE CHILDHOOD ASTHMA STUDY, PAKISTAN

*Adeel Ahmed Khan, Sana Tanzil, Tanzil Jamali, Aneeta Khoso, Afshan Shahid, Shahla Naeem, Ambreen Sahito, Fraz Anwar, Asaad Ahmed Nafees, Zafar Fatmi*  
*Departments of Community Health Sciences and Surgery, Aga Khan University, Karachi*

*Introduction:* Global burden of childhood asthma has increased in the last few decades particularly in low-income countries. The specific objectives of this study were to determine the prevalence and predictors of asthma among children 3-17 years of age in urban areas of Karachi as well as to determine pattern of asthma prevalence among different age groups of children.

*Methods:* A cross-sectional survey was conducted in urban areas of Karachi from March 2012-April 2013 comprising of 1046 children aged 3-17 years. Out of 7500 clusters, 80 were randomly selected and out of these 15 children per cluster were enrolled randomly. ISAAC (International Study of Asthma and Allergies in Children) questionnaire was administered.

*Results:* The overall prevalence of asthma among study participants was 10.2% (95% CI 8.37-12.03). The highest prevalence of asthma was found in 3-7 years i.e., 14.7%, followed by 6.8% in 15-17 years and 5.8% in 8-14 years ( $p < 0.05$ ). Asthma was found to be associated with male gender (adj. OR: 2.54, 1.63-3.96), age group of 3-7 years (adj. OR 2.91, 1.75-4.84), inadequate kitchen ventilation (adj. OR 1.84, 1.09-3.11), family history of asthma (adj. OR 2.29, 1.34-3.89) and Sindhi ethnicity (adj. OR 2.21, 1.12-4.36).

*Conclusion:* This study is the first of its kind in estimating the true burden of asthma among children in Pakistan. Family history of asthma, Male gender, Sindhi ethnicity and the type of kitchen are found out to be important risk factors. Appropriate preventive measures are required to improve the ventilation of the kitchen.

*Keywords:* Prevalence and predictors, Asthma, Children, Pakistan, ISAAC questionnaire

### 12.4

#### STRATEGIES FOR PREVENTION OF ROAD TRAFFIC INJURIES (RTIS) IN PAKISTAN: SITUATIONAL ANALYSIS

*Adeel Ahmed Khan, Zafar Fatmi*  
*Department of Community Health Sciences, Aga Khan University, Karachi*

*Introduction:* Road traffic injuries (RTIs) are one of the leading causes of death among 5 to 44 years. Various preventive strategies have been successfully employed to avert the burden of RTIs in high income countries however its implementation is slow in low and middle income countries. Using systems approach framework (SAF), current preventive strategies for RTI control were reviewed in Pakistan.

*Method:* A review of the literature was done using Google scholar, Pubmed, Pubget and Pakmedinet search engines. The original peer reviewed research articles, national and international reports in English language were included in the review.

*Results:* Only ten studies on preventive strategies for RTI stemming from Pakistan were found. Out of which four articles were from peer reviewed journals, four of them were technical reports of various governments and non-government organizations, while two were concerned with government legislations. The first Road Traffic Injuries Research Network (RTIRN) surveillance system for road traffic injuries was established in urban city (Karachi) in Pakistan has shown promise for injury control. Enforcement of traffic laws on seat-belt and helmet wearing is poor. National Highway and Motorway Police Ordinance (2000) was one of the few legislative measure so far taken in Pakistan.

*Conclusion:* Limited work has been done for the prevention of RTIs in Pakistan. The surveillance model regarding RTIs established in one of the large urban city should be scaled up to other cities. Using SAF, efforts are required to implement interventions targeting human, vehicle design and also making environment safer for road users.

*Keywords:* Road traffic injuries, prevention, strategies, analysis, Pakistan

## 12.5

### ASSESSMENT OF WHO HEMOGLOBIN COLOR SCALE FOR ACCURACY IN DIAGNOSIS OF ANEMIA AMONG PREGNANT WOMEN BY HEALTH CARE PROVIDERS IN PERI-URBAN SETTINGS IN KARACHI

*Adeel Ahmed Khan, Zafar Fatmi, Muhammad Masood Kadir*

*Department of Community Health Sciences, Aga Khan University, Karachi*

*Introduction:* Diagnosis of anemia is commonly based on clinical examination which shows variable results. A non-invasive, low cost technique, WHO Hemoglobin Color Scale (HCS), could be utilized in primary health care settings to enhance the detection of anemia among pregnant women.

*Objective:* To measure the diagnostic accuracy of HCS and clinical signs assessment technique (CSAT) in diagnosing anemia against the gold standard of Laboratory Hemoglobinometry.

*Methodology:* It was a cross sectional validation survey comprising of 189 pregnant women from peri-urban settings in Karachi. Two maternal and child health centers (MNCH) from four towns (Gadap, Kemari, Bin Qasim and New Karachi) were included as study sites. Anemia was assessed by HCS method & CSAT, and compared with gold standard of laboratory hemoglobinometry.

*Results:* Around 72.7% women were diagnosed anemic by gold standard method. The sensitivity and specificity of HCS was 70.9% and 49.06% respectively while for CSAT: 95.7% and 5.66%. The positive (PPV) and negative (NPV) predictive values of HCS were 78.7% and 38.8% respectively while for CSAT: 72.9% and 33.33%. ROC curve analysis also showed the diagnostic accuracy of HCS method was better than CSAT ( $p < 0.05$ ).

*Conclusion:* The scope of HCS in diagnosing anemia seems to be limited but found to be better than clinical examination. Further research may be done to assess combinations of both parameters to optimize anemia diagnosis in resource poor settings.

*Keywords:* Anemia, Pregnant women, WHO Hemoglobin color scale, Clinical signs assessment technique

## 12.6

### A SOCIO-DEMOGRAPHIC STUDY OF HEALTH PROFILE OF HEAVY VEHICLE DRIVERS

*Ammara Khalid*

*Department of Medicine, Aga Khan University, Karachi*

*Introduction:* It is a research that has been conducted with an objective to study the socio-demographic profile & health status of heavy vehicle drivers in Pakistan.

*Objective:* The very basic and most important objective is to document the socio-demographic profile and Health status of heavy vehicle drivers in Pakistan.

*Methodology:* A cross sectional study, with non-probability sampling method of snowball sampling was used. The subjects were 100 drivers with valid licenses operating on local routes in Karachi as well as drivers on long haul routes within the country. The study was done at various locations in the city of Karachi during the months June 2009 to Jan 2010. A questionnaire was developed keeping in view of the objectives of the study. The respondents were physically assessed for high blood pressure, body mass index, lung capacity, vision and colour blindness. SPSS version 12.0 was used for data entry and analysis of the collected data. Each questionnaire before entry was thoroughly studied and seen for missing data / information. A verbal permission from the Community Health Sciences Department was obtained to conduct the research. Information was provided to the participants in the form of a plain language statement attached to the questionnaire.

*Results:* About 51 % of drivers had categorized the Low Back Pain (LBP) as unbearable (moderate, severe and very severe). 27% of drivers indicated driving as one of the aggravating factors of LBP .83.6% of drivers reporting LBP were driving trailers. 43.6% of drivers with low back pain had duration of driving around 11-20 years. 49.1% of drivers with LBP reported that driving as the aggravating factor for LBP followed by prolonged sitting.LBP was severe (27.4%)



among drivers plying on long routes. Joint pain was higher among drivers with trip duration 48-72 hrs, while drivers with higher trip duration reportedly had lower incidents of joint pain. Drivers running in long routes reported disturbed sleep (33.3%) than those on local routes. Tobacco addiction seems to increase with years of driving with 11-20 years group, reporting highest numbers of drivers (41.1%) with tobacco addiction and 95% of total population was tobacco addict.

*Conclusion :* Majority of the drivers had indicated driving as the aggravating factor for low back pain. And many of the drivers with low back pain had disturbed sleep, and thus less rest. It was established that factors such as irregular duty time, short resting time and long driving hours have been attributed to the higher incidents of low back pain among drivers. Working for long hours in non-ergonomic postures may cause fatigue, low back pain and other diseases of joints and muscles resulting in poor quality of life. This impacts the efficiency of drivers leading to more accidents. Periodical medical checkups, using ergonomically designed seats and other accessories in the vehicles may lead to better driving conditions, and thus improving the health status of drivers and quality of life.

*Keywords:* Health status, Heavy vehicle drivers, Back Pain

## 12.7

### EXPANDED AND ELECTRONIC INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESSES (EIMCI) - IMPLEMENTATION IN CHILDREN 0-14 YEARS OF AGE IN A TERTIARY CARE HOSPITAL IN PAKISTAN

*Amyr Abdul Malik, Subhash Chandir, Erum Rasheed, Lubna Samad  
Interactive Research & Development, Indus Hospital*

In 2010, 7.6 million children died globally before reaching their fifth birthday. It is estimated that the two thirds of global children

deaths are preventable by using available and affordable interventions including vaccinations. WHO and UNICEF started Integrated Management of Childhood Illnesses (IMCI) in 1992 to tackle this. Pakistan started IMCI implementation in 1998 but overall implementation remains low with lack of understanding of strategy, proper planning and logistical support as being the major barriers. The objective of the program is to implement an expanded and electronic version of IMCI (eIMCI) guidelines in a tertiary care setting to prevent and improve the management of common, and potentially life threatening, illnesses in children up to 14 years of age. During the pilot phase program will screen >3600 children presenting at the tertiary care health facility over 6 months period. eIMCI aims to reduce childhood mortality with a built in Clinical Decision Support System (CDSS). The algorithms will be expanded to include common problems based on local epidemiology of childhood diseases and will screen for pneumonia, dehydration/dysentery, ear problem, fever, measles, dengue, TB, urinary tract infection, malnutrition, anemia and de-worming. The program will also identify and vaccinate any undervaccinated and unvaccinated children visiting the health facility as per the EPI recommendations.

*Keywords:* IMCI, Clinical Decision Support System (CDSS), Childhood Mortality

## 12.8

### AVENUES FOR BRINGING CARE TO THE PEOPLE: CONTRIBUTION OF PUBLIC HEALTH IN NURSING DISCIPLINE

*Anaiz A. Khowaja, Sadaf Huda  
Nursing Services, Aga Khan University, Karachi*

*Introduction:* Within the distinct branch of nursing, the public health nursing specialty comprises of scholar educators, practitioners, and researchers, who share common concerns about the health conditions of communities and thereby acknowledges communal approaches to

resolve them (Ervin, 2007; Josten, Clarke, Ostwald, Stoskopf, & Shannon, 1995).

*Method:* Systemic review of literature from 09 research articles from 2005 to 2013 was conducted through electronic medium by using JPMA, SAGE and Google search engines.

*Discussions/Implications:* In today's time the long standing challenge for PHN practice include the need to clarify, describe, and emphasize its unique contributions to nursing discipline. Inconsistency has been found in the widespread use of theoretical and operational concepts central to PHN in nursing knowledge with regards to in education, practice, and research. May, Phillips, Ferketich, & Verran, (2003) suggested that the face of public health has become more medically oriented, which is being driven by categorical funding for disease specific programs such as STIs and tuberculosis, rather than being driven by primary prevention and health promotion. It has also been brought to notice that nurses may indulge in details of the service delivery, but they are not in charge of such type of healthcare services that are accessible to the communities.

*Conclusion:* Public health sciences and advanced public health nursing open gateways for building the foundation for all nurses to incorporate prevention, health promotion, thereby, shifting the paradigm of focus on an aggregate group of populations rather than just providing care to one person at a time.

*Keywords:* Public Health, Nursing, Community

## **12.9** RESPIRATORY SYMPTOMS AND ILLNESSES AMONG FARMERS: A CROSS SECTIONAL STUDY FROM RURAL SINDH, PAKISTAN

*Aneeta Khoso*  
*Department of Community Health Sciences, Aga  
Khan University, Karachi*

*Background:* Farming has been known as a high-risk occupation for the development of

work-related symptoms since a long time. Majority of farmers in Pakistan are involved in farming activities, leaving the farmer exposed to a number of hazards that are potentially preventable, which ultimately affect the respiratory system. This study aimed to estimate the prevalence of chronic respiratory illnesses among farmers of rural Sind and to identify predictors of chronic respiratory illnesses among farmers of rural Sindh.

*Methods:* This was a questionnaire based cross sectional survey conducted among the male and female famers in Thatta, Sindh, Pakistan. A total of 381 adult male and female farmers were assessed using translated version of the American Thoracic Society Division of Lung Disease (ATS-DLD) questionnaire. Logistic regression analysis was done to determine the relationship between various socio-demographic and occupational factors, and the respiratory symptoms and illnesses (chronic cough, chronic phlegm, wheeze, Chronic Bronchitis and asthma).

*Results:* Results of the study show that 6.8% farmers had chronic cough and chronic phlegm. On Multivariate analysis age was found to be significantly associated with chronic wheeze (OR: 1.05; 95% CI: 1.01-1.09) as well as years of work in farms (OR: 0.95; 95% CI: 0.91-0.99). Although not significant all the predictor variables except pesticide use showed a positive association with chronic cough.

*Conclusion:* A high frequency of respiratory symptoms and illnesses was observed among farm workers. Age and smoking were strong predictors of developing these symptoms and illnesses.

*Keywords:* Farming, chronic respiratory symptoms and illnesses, pesticides

## **12.10** INNOVATIVE HEALTH FINANCING MECHANISMS AND THEIR EFFECTS ON MATERNAL HEALTH IN SOUTH ASIA

*Aneeta Khoso, Shagufta Perveen*  
*Department of Community Health Sciences, Aga  
Khan University, Karachi*

**Background & Objectives:** Reducing maternal mortality and morbidity are among the key international development goals (MDG 5). Various nations with the poorest maternal health indicators are also those which have a low domestic commitment to health, with less than 5% of the country budget going to health. This systematic review aimed to explore innovative health financing mechanisms and their effects on maternal health in South Asia.

**Methods:** The systematic review involved an extensive search of two databases “BioMed Central” and “Science Direct” using the search term “Innovative financing mechanisms and maternal health”. An arbitrary inclusion of full text articles searched from 2000-2011 was used. Data extraction form was developed that identified key characteristics of articles and reporting quality with reasons of exclusion.

**Results:** Death records have been used as means of setting objectives and improving health status. Apart from this, health worker incentives and improvement of maternal health delivery has been witnessed in low middle income countries (LMICs). Introduction of innovative financing schemes has led to improvement in contraceptive prevalence. Public-private partnership and improved financing of referral care facilities have been shown to achieve desired outcomes in the MDGs.

**Conclusions:** There is a dire need to introduce evidence based financial innovations in LMICs. A shift is required from conventional strategies that have slackened the pace in achieving MDG 5. Several success stories like those from India, Indonesia and the Philippines could be contextualized to Pakistan, with more researched out means of implementation.

**Keywords:** MDG 5, Innovative health financing mechanisms, South Asia

## **12.11** KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING RESPIRATORY SYMPTOMS AMONG TEXTILE WORKERS OF KARACHI, PAKISTAN: A CROSS- SECTIONAL SURVEY

*Aneeta Khoso, Asaad Ahmed Nafees*  
*Department of Community Health Sciences, Aga  
Khan University, Karachi*

**Objectives:** This study aimed to determine the prevalence and predictors of good knowledge, appropriate attitude and appropriate protective practices regarding respiratory symptoms among textile workers of Karachi, and to determine the association of knowledge, attitude and practices with respiratory symptoms.

**Methods:** This was a cross-sectional survey conducted in 2009, among 372 male textile workers, from 15 textile mills in Karachi and its outskirts. A structured and pre-tested questionnaire was used which included open ended questions to explore the knowledge, attitude and practices regarding respiratory symptoms.

**Results:** This study found prevalence of good knowledge to be 48.9% (95% CI: 43.7-54.1) and appropriate attitude 81% (95% CI: 76.7-84.9), while only 21% (95% CI: 17.5-26.1) were practicing these measures appropriately. Being educated and older than 38 years, belonging to Sindhi ethnicity; working in cluster 1 and in weaving section were significant predictors of knowledge, attitude and practices. Generally, we found no significant association of knowledge, attitude and practices with respiratory symptoms.

**Conclusions:** The workers in this study had low prevalence of appropriate protective practices despite having high prevalence of good knowledge and attitude. The translation of safe practices into improved health may not only depend on the knowledge and attitude of workers, suggesting the interplay of several other social and environmental factors which need to be explored.

**Keywords:** Textile workers, Knowledge, Attitude and Practices, Respiratory symptoms

### 12.13 ASSOCIATION OF TUBERCULOSIS WITH INDOOR AIR POLLUTION DUE TO BIOMASS USE AMONG WOMEN OF TALUKA GAMBAT, SINDH, PAKISTAN

*Asaad Ahmed Nafees, Unaib Rabbani, Ambreen Sahito, Zafar Fatmi*  
*Department of Community Health Sciences, Aga Khan University, Karachi*

**Background & Objectives:** There are certain established risk factors for pulmonary tuberculosis (TB) such as malnutrition, poverty, overcrowding, diabetes and tobacco smoke; however, association between biomass fuel use and TB is still unclear. Keeping in view fact that large proportion of rural population uses biomass fuel in Pakistan, we aimed to see association between biomass fuel and TB in local context.

**Methods:** Facility based, age and union council matched case-control study was conducted in taluka Gambat, district Khairpur between February and May 2013. Eligible women between 20-65 years of age with and without active TB were recruited as cases and controls respectively. Data was collected through structured questionnaire which was translated into local language and pre-tested before use.

**Results:** A total of 178 cases and controls each were interviewed. Age and height were not significantly different for cases and control but mean weight was significantly higher for controls. Higher use of outdoor kitchens, OR 2.78 (1.44-5.34), three bricked stoves, OR 1.98 (1.09-3.62) and biomass fuel use, OR 1.9 (1.04-3.47) was observed in cases as compared to controls. Univariate conditional logistic regression analysis found that cases were more likely to use three bricked stove, OR 4.0 (1.50-10.65) and biomass fuel, OR 3.50 (1.73-7.07) as compared to the controls. Closed detached kitchen was found to be protective, OR 0.208 (0.108-0.397) possibly due to fact that more non-biomass fuel users might have closed detached kitchen.

**Conclusions:** There are significant differences in the exposure between the cases and controls, however further research is required to establish

confirmative association and develop interventions to control TB due to biomass fuel use.

**Keywords:** Tuberculosis, Biomass fuel, Rural Pakistan

### 12.14 PERCEPTIONS ON INFANT FEEDING PRACTICES OF WOMEN LIVING IN BALOCHISTAN-PAKISTAN

*Ayesha Zahid Khan, Sayeeda Amber Syed, Dr Ghazala Rafique*  
*Human Development Programme, Aga Khan University, Karachi*

**Background:** Optimal infant feeding practices are effective in reducing child mortality and morbidity. The National Nutritional Survey-2011 infers that the largest province of Pakistan, Balochistan is facing a nutritional emergency. This qualitative study was under taken to explore infant feeding practices prevalent in Balochistan.

**Methods:** A purposive sampling design was used. Data was collected by 14 Focus Group Discussions conducted with mothers (10) and grandmothers (4) from three districts of Balochistan. Each session comprised of 10-15 participants and had an average duration of 70 minutes. The data was transcribed in national language Urdu and then analyzed using N-VIVO version 2.0. Reporting is done on the major themes that emerged.

**Results:** The rate of breastfeeding in Pakistan is high but “exclusive” breastfeeding is rare and practices are suboptimal. There is delayed breastfeeding initiation and rampant use of pre-lacteal feeds. It is claimed that pre-lacteal feeds clean the infant’s stomach. Some participants give colostrum while majority discards it as they consider colostrum to be impure and unhealthy. There is a general consensus that breastfeeding should be continued till two years of age. Some mothers discontinued feeding before two years due to the onset of next pregnancy. Another milk source is added besides breastfeed because some

mothers perceive that their milk supply had diminished.

*Conclusion:* Cultural myths have an influence on infant feeding. Prevalent harmful traditions are discarding of colostrum, delayed initiation of breast feeding and use of pre-lacteal feeds. Nutrition education interventions should focus to address these issues.

*Keywords:* Infant-Feeding, Practices, Pakistan

### 12.16 GOOD KNOWLEDGE ABOUT HYPERTENSION IS LINKED TO BETTER CONTROL OF HYPERTENSION; A MULTICENTRE CROSS SECTIONAL STUDY IN KARACHI, PAKISTAN

*Aysha Almas, Saniya Siraj Godil, Saima Lalani,  
Zahra Aziz Samani, Aamir Hameed Khan  
Department of Medicine and Alumni, Aga Khan  
University, Karachi*

*Background:* According to the National Health survey only 3% of the population has controlled hypertension. This study was designed to elucidate the knowledge about hypertension in hypertensive patients at three tertiary care centers in Karachi. Secondly we sought to compare the knowledge of those with uncontrolled hypertension and controlled hypertension.

*Methods:* It was a cross-sectional study. Patients aged > 18 years were included. Patients were categorized into 2 groups: controlled and uncontrolled hypertension based on their initial BP readings on presentation

*Results:* Mean (SD) age of participants was 57.7(12) years, 50.1(224) were men. Controlled hypertension was present in 323(72.3) and uncontrolled hypertension was present in 124(27.4). The total mean (SD) Knowledge score was 20.97(4.93) out of a maximum score of 38. On comparison of questions related to knowledge between uncontrolled and controlled hypertension, there was statistically significant difference in; meaning of hypertension (p <0.001), target SBP(p0.001), target DBP(p 0.001), importance of SBP versus DBP,

improvement of health with lowering of blood pressure (p 0.002), high blood pressure being asymptomatic (p <0.001), changing lifestyle improves blood pressure(p 0.003),hypertension being a lifelong disease (<0.001), lifelong treatment with antihypertensives(<0.001) and high blood pressure being part of aging(<0.001).  
*Conclusion:* Knowledge about hypertension in hypertensive patients is not adequate and is alarmingly poor in patients with uncontrolled hypertension. More emphasis needs to be made on target blood pressure and need for taking antihypertensives for life to patients by physicians.

*Keywords:* Hypertension, Knowledge, uncontrolled hypertension

### 12.17 POST PARTUM DEPRESSION: RAISING PUBLIC HEALTH AWARENESS

*Bakhtawar Khowaja, Razia Feroze  
School of Nursing & Midwifery, Aga Khan  
University, Karachi*

*Introduction:* Postpartum depression affects about 10-15% of women and is one of the most common complications of child-bearing. Pakistan has the highest prevalence rate of postpartum depression among Asian countries that is 28%- 63%. Moreover, despite of several treatment options, not all women are assessed for PPD or receive its treatment.

*Objective:* The aim of this review is to ascertain causes, effects, preventive measures and treatment options for women with postpartum depression.

*Method:* Comprehensive review of literature from twelve research articles from 2005 to 2013 was conducted by using SAGE and Google scholar search engine.

*Results:* Postpartum depression is a prevalent illness in middle class women especially prevalent in developing countries. The consequences of the disease are not limited to only mothers, but it affects the infant and the father as well. Its causes can be maternal or situational and therefore, its prevention is

recommended to decrease its burden in public health. If primary prevention fails, screening for early detection should be considered for early treatment and if the diseases progresses, antidepressant compliance and effective psychotherapy are useful along with recommended diet, proper sleep and exercise. However, barriers to each level of prevention exist due to socioeconomic, maternal and healthcare factors.

*Conclusion:* Results suggest that women do not proactively seek help when suffering from postpartum depression due to many factors, the root cause of which is lack of awareness. Since this ignored illness can lead to serious complications, the issue should be addressed to promote public health.

*Keywords:* Post partum depression, Public Health, Awareness

### 12.18

#### HYPERTENSION IN A YOUNG BOY: AN ENERGY DRINK EFFECT

*Asma Usman, Ambreen Jawaid  
Department of Family Medicine, Aga Khan University, Karachi*

*Background:* Use of energy drinks has significantly increased in recent times. Besides athletes, teenagers and students are among the most common consumers. However, popularity is also increasing among the younger and older age groups. Most of the users believe that they are a good source of instant energy and are unaware of its high Caffeine content resulting in harmful effects on health.

*Case presentation:* We report the case of a young boy who presented with palpitations and high blood pressure as a result of energy drinks usage. He had been consuming a “Sting” energy drink on regular basis while studying for long hours during his O’ level Exams. His medical examination revealed Sinus tachycardia and high blood pressure. Rest of the examination and lab workup was within normal limits. His pulse and blood pressure returned to normal range after discontinuing Sting usage.

*Conclusion:* Several studies have reported numerous health hazards including cardiac effects associated with energy drinks. Warning labeling should be done on these drinks regulating the content of Caffeine and its harmful effects on health.

*Keywords:* Energy drinks, Caffeine, Sinus Tachycardia

### 12.19

#### DOES LABORATORY DATA TRULY REFLECT THE PREVALENCE OF VITAMIN D DEFICIENCY? A HEAD TO HEAD COMPARISON WITH PAKISTAN NATIONAL NUTRITION SURVEY 2011.

*Lena Jafri, Sidra Hassan, Syeda Maria Muzammil, Aysha Habib Khan  
Department of Pathology & Microbiology and Medical College, Aga Khan University*

*Background:* According to the “National Nutrition Survey 2011” (NNS 2011) of Pakistan, published by the AKUH, 66.2% of non-pregnant and 68.5 % of pregnant females were identified as 25-hydroxy D (25[OH]D) deficient.

*Objectives:* To compare vitamin D deficiency (VDD) amongst provinces of Pakistan (Sindh, Punjab, Balochistan, Khyber Pakhtunkhwa (KPK), Gilgit and Baltistan and Azad Kashmir) and to compare the extent of VDD identified from the laboratory data with NNS 2011. Material and

*Methods:* Subjects tested for 25[OH]D at the Clinical Laboratory of AKUH from September 2010 to September 2011 were taken. Institute’s Ethical Review Committee’s exemption was sought. SPSS version 19 was used for data analysis.

*Results:* Overall, mean log 25[OH]D was 1.14 ( $\pm$  0.39) ng/ml (median 25[OH]D = 13.5 ng/ml; IQR =7.4-25.1 ng/ml). Out of the total (n=60,937) 66.1% of the population had VDD. According to NNS 2011, the region most deficient in 25[OH]D amongst females turned out to be the Gilgit and Baltistan as opposed to our data which suggested KPK to have most severe VDD. The ‘NNS 2011’ reported 66.2%

of the non-pregnant and 68.5 % of the pregnant mothers as VDD. This conformed to our results of an overall VDD of 66.1% in females (n=42216). In this study males (n=18721, VDD=66%) and children (n=9204, VDD=57.8%) were also included contrary to the previous surveys, where topic of discussion has been VDD in women.

*Conclusion:* This study reiterated the statistics of 'NNS 2011', confirming that 66.1% women are deficient nationwide. There is a need for widespread awareness to address the growing burden of VDD.

*Keywords:* vitamin D, deficiency, prevalence

## 12.20

### ASSESSING FAILURE TO QUIT SMOKING AMONG PAKISTANI URBAN POPULATION

*Muhammad Irfan, Javaid A Khan, Ahmed Suleman Haque, Safia Awan*  
*Department of Medicine, Aga Khan University, Karachi*

*Introduction:* Tobacco dependence is a chronic relapsing disease which is potentially treatable. At present 5 million tobacco-related deaths occur annually worldwide and the toll is projected to reach up to 1 billion throughout the 21st century. A vast majority of smokers would like to quit but are unable to because variety of reasons.

*Objective:* To assess factors associated with failure to quit smoking among current smokers/tobacco users.

*Methods:* Free health camps supervised by a physician and manned by trained staff were held across major cities of Pakistan. All consenting participants were administered a self-reporting questionnaire and had their exhaled carbon monoxide level measured.

*Results:* 12969 participants were interviewed. 99.3% (12872) were men. Mean age  $\pm$  SD was  $31.4 \pm 10$  years. 66.1 % smoked tobacco where as 12.6% used smokeless tobacco and 20.5% both. Average duration of smoking  $\pm$  SD was  $8.8 \pm 6.5$  years. Measured exhaled carbon monoxide (ppm) was  $12 \pm 8$ . 12633 (97.4%) participants wanted to quit. 12708 (98%) had

received some form of advice to quit. 81.6% had tried smoking cessation pharmacotherapy. Reasons cited for failing to quit were dependence 1965(15.2%), unknown reason 1622 (12.5%), friends / peer pressures 1554 (12%), family related anxiety 771 (5.9%), work related anxiety 681 (5.3%) and changes in mood 390 (3%).

*Conclusion:* Majority of participants wanted to quit tobacco use regardless of age, gender or years of usage. Nearly everyone had received advice about quitting, and three quarter had tried smoking cessation pharmacotherapy. Three commonest reasons cited for failing to quit were dependence, unknown reason and peer pressure.

*Keywords:* Smoking, Failure to quit, Dependence

## 12.21

### COMPARISON OF TIME-LOCATION PATTERN OF UNDERGRADUATE UNIVERSITY STUDENTS OF ASIAN COUNTRIES: THE PAK

*Tanzil Jamali, Adeel Ahmed Khan, Asaad Ahmed Nafees, Muhammad Masood Kadir, Kiyoun Lee*  
*Department of Community Health Sciences, Aga Khan University, Karachi and Graduate School of Public Health, Seoul National University, Seoul, Korea*

*Introduction:* Time-location data are required to characterize human exposure (e.g. air pollution and noise pollution) and to identify important locations where exposures are occurring. There is limited information about time-location patterns of undergraduate students in Asian countries. This study was designed to compare the diary method with total physical activity among undergraduate university students in Karachi, Pakistan

*Objective:* To compare subjective methods of total physical activity and diary method among undergraduate university students in Karachi, Pakistan.

*Methodology:* A cross-sectional study, conducted from September 2012 to May 2013, included 50 students, half each from Aga Khan

University Medical College (AKU-MC), and School of Nursing & Midwifery (AKU-SONAM). Time-location pattern was recorded for 24 hours, on any weekday, for each individual through diary method, while physical activity was assessed through the International Physical Activity Questionnaire.

**Results:** Daily around 24.8% of student's time was spent outdoors (leisure time with friends, recreation), 30.8% indoor-inside campus (academics), while 44.5% indoor-outside campus. Based on physical activity categories, 8% of the students were inactive; 52% were moderately active and 40% were physically active. Females had higher proportion of vigorous physical activities 42.3 % as compare to males 37.5%.

**Conclusion:** Most of the activity takes place inside campus, as compared to leisure activity and travelling. The proportion of students involved in vigorous physical activity is low especially among females. Recognition of these activity patterns will help participants adopt healthy life

**Keywords:** Time-location patterns, Physical-activity, University Students

## 12.22 SOCIOECONOMIC AND ENVIRONMENTAL SURVEY IN A NORTHERN PAKISTANI VILLAGE

*Ejaz Hussain, Wasiat Hassan Shah, Assis Jahan, Faheemullah Beg, Saba Wasim, Syed Iqbal Azam, Julia M. Baker, Dr. Khalil Ahmed, Zeba A. Rasmussen*

*Fogarty International Center, National Institutes of Health, USA and Departments of Community Health Sciences and Biological and Biomedical Sciences, Karakoram International University, Gilgit*

**Introduction:** Oshikhandass is a rural valley located approximately 24 km southeast of Gilgit-Baltistan's capital Gilgit, where different practices of fueling for cooking, water and sanitation are in progress by households with different socio-economic backgrounds

**Objectives:** 1. To determine socio-economic indicators of current residents in Oshikhandass, Gilgit-Baltistan. 2. To ascertain household structure, water, sanitation and cook-stove practices.

**Methods:** After NIH/AKU/KIU IRB approval and obtaining informed consent, trained Lady Health Workers and assistants supervised by social scientists conducted a socioeconomic survey from November 2nd, 2012 to June 27th, 2013. Data were entered in Microsoft Access® and analyzed using SPSS® (Ver.20).

**Results:** Of 947 total households, 906 were available for interview; 514/906(56.7%) had children under age five. Most respondents were either mothers of these children(492/514, 95.7%), or wives of head of the household(345/392, 88%). The median highest level of education in a household was Class 12. Most houses were made of concrete blocks(47.8%) or stones(40.6%), 86% were carpeted, 99.7% had electricity, 73.3% used local cook-stoves(Bhukari) and 75.7% used wood as the primary fuel; median number of rooms per house was three. Toilets with septic-tanks(428/906, 47.2%) and pit latrines(206/906, 22.7%) were most common. Two-thirds(67%) had access to a water filtration plant. Almost half(408/906) considered their primary drinking water source as safe for drinking. Of the remainder(498/906), water was boiled by 113/498 while 96/498 let it settle. Median household income was Rs.22,000. Nearly all(96.9%) households had mobile phone(s), 74.4% a bank account, 73.1% a television, 40.7% a computer, 37.7% a motorized vehicle, 26.7% a refrigerator and 22.3% a chair.

**Conclusion:** With high median household educational levels and the availability of modern commodities, many residents have new sanitation practices and access to water from filtration plants, but continue traditional cook-stove practices.

**Keywords:** Socioeconomic factors, Sanitation, Drinking water



### 12.23 CORRELATING HBA1CLEVELS WITH MEAN PLASMA GLUCOSE VALUES

*Fatima Matloob, Shahmina Sadaf, Hira Qadir,  
Natasha Ali  
Department of Pathology & Microbiology, Aga  
Khan University, Karachi*

*Introduction:* Glucose in the blood adheres to haemoglobin in red blood cells, making glycosylated haemoglobin, called HbA1c and is measured in percentage values. It measures chronic glycemia and is used in the treatment of diabetes mellitus. Day by day management can be obtained by self-monitoring of capillary glucose concentrations. We tried to correlate HbA1c and mean plasma glucose levels (MPG) using a mathematical formula.

*Objective:* To correlate the relation between HbA1c with Mean Plasma Glucose levels in diabetic patients.

*Materials and Method:* HbA1c was estimated using Ion Exchange Resin separation by HPLC method on Variant Turbo as per guidelines of BIO RAD. HbA1c levels were then compared with the MPG levels. Analyses included n=230 consecutive patients with type 1 and 2 diabetes.

*Results:* Among n=230 patients analyzed, there were n=112 females and n=118 males. The age ranged from 16 – 84 years with median age of 52.4 years. The mean HbA1c levels were 7.2% (SD±2.0, range: 4.3-13.5%). Mean MPG values were 162.1 mg/dl (SD±57.7, range: 76.7 – 353.3). The correlation calculated by formula  $MPG (mg/dl) = (28.7 \times A1C) - 46.7$

*Conclusions:* The linear regression analyses was not affected by the patient's age, sex & diabetes type. From HbA1c levels we can calculate MPG values for patients with diabetes. By the help of this correlation, physicians and their patients can set day to day targets of plasma glucose to attain desired HbA1c goals.

*Keywords:* HbA1c, Mean Plasma Glucose, variant turbo

### 12.24 SHIFTING OF VITAMIN D DEFICIENCY TO HYPERVITAMINOSIS AND TOXICITY

*Hafsa Majid, Aysha Habib Khan, Imran*

*Siddiqui, Farooq Ghani  
Department of Pathology & Microbiology, Aga  
Khan University, Karachi*

*Background & Objective:* There has been increasing awareness of Vitamin D deficiency, but lack of clear guidelines for the optimum doses of Vitamin D in deficient states, there is inadvertent use of higher doses of Vitamin D in patients resulting in toxicity of Vitamin D. This study was done to estimate the prevalence of vitamin D toxicity in samples submitted for 25OHD analysis.

*Material and Methods:* An observational study was conducted at the section of Chemical Pathology, Department of Pathology & Microbiology AKUH. Laboratory data analysis of serum 25OHD tests performed from January 2010 to October 2012 was performed. Only initial test results were included in analysis for subjects with repeated testing for 25OHD. The cutoffs used for deficient, insufficient, optimal and toxic levels were,  $\leq 20$ , 20-30,  $\geq 30$  and  $\geq 150$  ng/ml respectively. Data was analyzed by SPSS version 19.

*Results:* The increase in 25OHD testing since 2010 to 2012 was 42%. Total 182,526 tests were performed during 36 months period, average age being 35 years. Cumulative prevalence of deficiency, insufficiency, sufficiency and toxicity over three years were 65.1%, 16.5%, 17.8% and 1.5%. There was a significant increase in samples with 25OHD toxicity over the three years from 0.37% (145) to 0.6% (364).

*Conclusions:* Although prevalence of deficiency, insufficiency and sufficiency remain similar over 3 years but increasing toxicity to almost double of that reported in 2010. Highly concentrated Vitamin D injections should be used with caution as vitamin D is not a benign drug.

*Keywords:* 25OHD, Hypervitaminosis D, Toxicity

### 12.25

#### TENDER COCONUT WATER IS STERILE CONTAINS GLUCOSE AND ELECTROLYTES WITH AN ACIDIC pH

*Heena Akber Ali, Samira Amir Ali, Noorjehan Mehboob Ali, Fatima Kubra, Shela Khan School of Nursing & Midwifery, Aga Khan University, Karachi*

*Introduction:* Tender Coconut water is the nectar inside the tender coconut. TCW contains amino acids, sugars, electrolytes, fatty acids, vitamins, minerals, and some coagulating factors. TCW has the number of comparable properties and constituents to blood plasma and also has the ultimate pH which does not show any counter reaction in the body. These similarities altogether contributes in making it a substitute of blood plasma when there's an insufficiency of it in a body.

*Method:* We tested the presence of glucose by Benedict Test, electrolytes by electrolysis and we have also checked the sterility by Serial Dilution method as well as its pH by pH meter. We took 10 readings of all the above mentioned experiments.

*Result:* Observations showed the positive results in all the 10 readings of benedict test, electrolysis and pH testing which indicates the presence of glucose, electrolytes and slightly acidic pH. Moreover no bacterial colonies found in any dilutions.

*Conclusion:* The tender coconut water is sterile contains glucose and electrolytes with slightly acidic pH. So it is inferred as "TCW can be used as a substitute of blood plasma and can be transfuse intravenously into the body at time of emergency, when there is an insufficiency of blood plasma, as they reciprocally share some most important properties." So it is revealed that TCW can transfuse in body. It is also evidenced by the remote past wars like World War II.

*Keywords:* sterility, tender coconut water, blood plasma

### 12.26

#### FEBRILE CHILDREN PRESENTING TO EMERGENCY DEPARTMENT OF TERTIARY CARE HOSPITAL

*Jabeen Fayyaz, Ali Saleem Faisal, Sumaira Iram, Anita Zaidi, Junaid Razzak Departments Emergency Medicine and Paediatrics and Child Health, Aga Khan University, Karachi*

*Introduction:* Fever is one of the most common reasons of visiting ED in children and constitutes around 10.5 % - 25% of pediatric ED visits. Objective: To determine the pattern of febrile illnesses in children presenting to emergency department of AKUH.

*Material and Methods :* This is a retrospective study which is being carried out in the Emergency Department (ED) of The Aga Khan University Hospital, Karachi of all the children that had visited from Jan- Dec 2011. Children from 1 month to 16 years had been included in the study. Charts and electronic data system of all children presenting to ED with acute febrile illness will be reviewed. Data was entered and analyzed using SPSS version 19.0. Descriptive statistics were used to describe patient's demographics. Chi-square ( $\chi^2$ ) test will be used as test of significance to compare differences between groups.

*Results:* Total pediatric visits were 11800, among them 3355 (30.5%) patients presented to ED with the presenting complain of fever. Almost 1895(56.5%) were males and 1461(43.5%) were females. M: F ratio was 1.3. Among the subgroups 294 (8.7%) were less than 1 year, 2153(64.2%) were between 1-5 years and 908(27.1%) were more than 5 years. The common causes were respiratory tract infection 1356(40%), loose motion and vomiting 998(29.7%), viral fever 474(14%), enteric fever 302(9%) and urinary tract infections 95(2.8%).1006 (30%) patients required hospitalization while 2349 (70 %) got discharged from ED.

*Conclusion:* Febrile illnesses in children are an important cause of ED visit as well as hospitalization in children.

*Keywords:* Fever, Children, Emergency department

### 12.27

#### ABDOMINAL PAIN IN CHILDREN PRESENTING TO EMERGENCY ROOM: A PUZZLE - DIFFICULT TO SOLVE

*Jabeen Fayyaz, Munawar Khursheed  
Department of Emergency Medicine, Aga Khan  
University, Karachi*

*Introduction:* Acute abdominal pain in children is one of the most common presenting complaints to emergency department. Objective: To determine the prevalence, associated symptoms and clinical outcome of children with acute abdominal pain presenting to emergency department of tertiary care hospital.

*Material and Methods:* This is the retrospective chart review of all patients presenting with abdominal pain in the Emergency Department of The Aga Khan University Hospital, Karachi. The duration of study was from Jan 2011- Dec 2011. Data collection sheet includes patient's demographic information, day and time of presentation, triage category, reason for visit, clinical presentation, management, and length of stay, ED disposition. Data will be entered and analyzed using SPSS version 16.0. Descriptive statistics were used to describe patient's demographics. Chi-square ( $\chi^2$ ) test was used as test of significance to compare differences between groups for categorical data and T test for continuous data.

*Results:* Total pediatric visits in 2011 were 11800, among them 2290 (19.4%) patients presented to ED with the complaint of abdominal pain. Males were 51.6% and Female were 48.3%). M:F ratio is 1.06. Almost 54.6% patients were discharged from ED while the other 45.4% patients got admitted. Among the total of 2290, 1695 (74%) had acute gastro enteritis, 463(77.42%) patients had non-specific abdominal pain, 112(18.72%) had urinary tract infection and 23(3.84%) had other causes as post-surgical pain, upper respiratory tract infection and enteric fever.

*Conclusion:* Abdominal pain is a common reason for visiting ED. Nonspecific abdominal pain is an important cause in children.

*Keywords:* Intracranial Bleed, Children,  
Emergency department

### 12.29

#### CAUSES AND OUTCOME OF INTRACRANIAL BLEED IN CHILDREN PRESENTING TO EMERGENCY DEPARTMENT OF TERTIARY CARE HOSPITAL

*Jabeen Fayyaz, Sughra Raza, Akhter Hamid,  
Munawar Khursheed, Junaid Razzak  
Department of Emergency Medicine, Aga Khan  
University, Karachi*

*Introduction:* Intracranial (IC) bleed spontaneous and traumatic are important cause of morbidity and mortality in children. Objective: To determine the causes and outcome of children presenting to emergency department of a tertiary care hospital.

*Material and Method:* The study was conducted at Emergency department (ED) of Aga Khan University from Jan 2009- Dec 2010. The charts of the patients with Intracranial bleeding were reviewed retrospectively. Data was collected on variables like age, gender, symptoms, clinical presentations CT scan findings, cause of bleeding and final disposition with outcome were recorded in a predesigned proforma. Data was entered and analyzed using SPSS version 19.0.

*Results:* During the study period total 145 children presented to emergency department with suspected Intracranial Bleed. The mean age of presentation was 5.6 years  $\pm$  4.26 years with 27(18.6%) less than 1 year of age. Males were 100(69%) and females were 45(31%). The presenting complaints were headache (16.6%), altered level of consciousness (40.7%), seizures (29.7%), vomiting (51%) and fever (20.7%). Duration of symptoms was less than a week in 72.4% of patients. History of trauma was found in 104(71.7%), anemia 80(55.2%) and thrombocytopenia 11(7.6%). Ct scan showed extradural in 30.3% , parenchymal in 26.2% , subdural in 25.5% , cerebral edema in 71.7% and midline shift in 27.6%. Almost 32.4 % patients were shifted to operating room immediately .PICU admission was needed in 64.1% and 15.2% expired.

*Conclusion:* Intracranial bleed is a common reason for Emergency department visits in

children. Trauma is an important cause of intracranial bleeding in children

*Keywords:* intracranial bleeding, Children, Emergency department

### 12.30

#### COMPASSION FATIGUE: WHAT'S THE NURSES ROLE IN TODAY'S AGE

*Mahek J. Pethani*

*Nursing Services, Aga Khan University, Karachi*

*Introduction:* "Compassion fatigue is a quite newly defined disorder characterized by depressed mood in relationship to work, accompanied by feelings of fatigue, disillusionment and worthlessness." (Circeni & Millere, 2011). The contemporary description of compassion fatigue is same with the case of caregivers, it is in fact, more often found in caring professionals who absorb the traumatic stress of those they help (Boyle, 2011).

*Method:* Systemic review of literature from 06 research articles from 2010 to 2012 was conducted through electronic medium by using JPMA, SAGE and Google search engines.

*Discussions/Implications:* Post-traumatic stress could drastically affect one's physical, emotional, and spiritual plane of life, it is thus important to practice healthy rituals for its well-being. Observations, experiences and studies have highlighted that people undergoing compassion fatigue may have, previously been exposed to a very distressing incident or repeated exposure to traumatic events (Sabo, 2011).

*Recommendations/Suggestions:* Nurses need to improve their communication competency since it amplifies the stress to nurse if he/she is unable to support the patient or their family in a traumatic situation (Boyle, 2011). Additionally, music therapy, art therapy, gentle body massage and guided imagery could be helpful in reducing the compassion fatigue. Boyle (2011) recommended that continuing education programs augment basic emotional-support competencies in the practice setting integrating

the humanistic perspective into healthcare are excellent modalities for developing these skills.

*Conclusion:* This abstract endeavor to highlight the notion that nurses at every juncture of their practices is more prone to post-traumatic reactions because of the repetitive exposure to work related stressors. Unfortunately literature does not provide us any black and white prediction about mitigating factors for compassion fatigue that may lead to its eradication.

*Keywords:* Compassion Fatigue, Post-traumatic stress, Nurses

### 12.31

#### HIGH PREVALENCE OF CARDIOVASCULAR DISEASE: ENVIRONMENT, A CULPRIT

*Mohammad Ahraz Hussain, Sandal Noorani, Amna Khan, Hafsa Asad, Anam Rehan, Aamir Kazi, Arish Noor, Nida Shahab Bham, Amash Aqil, M. Masood Kadir*

*Department of Community Health Sciences, Aga Khan University, Karachi*

*Background:* NCDs account for 59% of the total disease burden in Pakistan with cardiovascular disease (CVD) representing the largest share. Modifiable risk factors of CVD have their triggers in the environment of a community.

*Methods:* This was a descriptive study conducted using the PURE study's research tool, EPOCH. The study population was young adults aged 18-25 in two areas of Karachi including Tariq Road and Clifton-Boat Basin. The study setting was busy shopping malls frequented by young adults in the respective communities.

*Results:* Our total sample size was 120 consenting individuals, 60 residents each of Tariq Road and Clifton-Boat Basin Area, Karachi. The mean age of our population was 21.77 y ( $\pm 2.63$ ) years. 61.1% were females and 13.3% of the sample consisted of smokers. 40% of the population recognized some form of restriction regarding smoking in their communities. The largest contributor to tobacco advertising was actors smoking in movies and

TV shows.( >80% responses). Posters and billboards are also major contributors to tobacco advertising (52.2% responses- Clifton, 44.2% responses- Tariq Road). The community thankfully disapproved use of cigarettes (61.9% and 71.1%, Clifton and Tariq Road respectively) by young individuals and women. But not water pipes (sheesha). Advertisements promoting smoking are more prevalent as compared to smoking cessation. Unhealthy food items are more easily available in contrast to healthier options. The cost of healthy food options including vegetables and fruits is higher than sugary drinks and fast food. The latter is also advertised more. Only 1 recreational park was found in a 500m distance near Tariq Road, however none in the same distance in the Clifton-Boat Basin area.

*Conclusion:* Both communities are exposed to environments that promote risk factors for cardiovascular diseases. Community-health intervention programs should also address environmental triggers of adverse health-behaviors.

*Keywords:* cardiovascular diseases/epidemiology, environment, life style

### **12.32** INCIDENCE OF POLYPHARMACY AMONG EMERGENCY PATIENTS AT A TERTIARY CARE HOSPITAL IN KARACHI: AN IGNORED PARADIGM FOR QUALITY DRUG THERAPY

*Munawar Khursheed, Rakshinda Mujeeb, Asher Feroze*  
*Department of Emergency Medicine, Aga Khan University, Karachi*

*Introduction:* A prescription containing five or more drugs is likely to result in adverse consequences that may involve hospital admission or falls. Increasing incidence of Polypharmacy among Emergency patients calls for a more judiciary and cautious approach to prescribing with a focus on long term as well as short term health.

*Objective:* To estimate the incidence of polypharmacy and its strength of association with respect to medication regimen among patients (pediatric and adults) visiting ED of a tertiary care hospital in Karachi Pakistan.

*Methods:* Data will be collected retrospectively of all patients, who visited the Emergency Department (ED) of Aga Khan University Hospital, Karachi (AKUH) during January, 2012 to December, 2012. The detailed clinical records on medication prescribing from admission through discharge of all patients will be reviewed.

*Results:* Total 51,000 patients visited ED during January 2012 till December 2012, out of those polypharmacy was common in 40% of patients. Male were 56.6%(9,837) while 43.4% (7,553) were females. Pediatric patients were 17.9% (3,145) while 79% (14,279) were adults. The most common triage category for patients with was P3 with 37.2% (6,483). Most of these patients were those who were recommended admission in other wards 59.6% (10,146), 26.5% (4,514) discharged patients and 9% (1,536) LAMA patients.

*Conclusion:* The perils and problems associated with Poly pharmacy are a subject of interest as it was significant found among all ED patients.

*Keywords:* Polypharmacy, emergency department, Pakistan

### **12.33** SCHOOL HEALTH PROMOTION – INTERNATIONAL PERSPECTIVES

*Munira Prasla, Shameer Ali Prasla*  
*School of Nursing & Midwifery, Aga Khan University, Karachi*

*Background:* Schools have great potential in health promotion; however, this is often neglected area and fewer efforts are done in exploring status of school health promotion in Pakistan. This paper attempts to outline brief historical background of school health promotion in Pakistan; presents critical review of some international school health promotion perspectives; and finally explore opportunities

and role of healthcare professionals in Pakistan's context.

*Methods:* A critical review of peer-reviewed literature divided into two broad themes of international perspectives on school health promotion, and role of healthcare professionals. Results are presented in cross-cutting themes and in narrative style.

*Results:* School health promotion is very diverse phenomenon, situated in respective cultural contexts. Programmes present a range of characteristics from focusing on integrated approach to health education to behavioural changes; and from involving youngsters to policy advocacy. Like the programmes, role of healthcare professionals is also varied and dynamic and without clearly defining their role, development of effective health promotion programmes is difficult.

*Conclusion:* School health promotion could be facilitated by appropriate trainings for healthcare professionals and evidence-based policy changes.

*Keywords:* School health promotion, healthcare professionals' role, Pakistan, effective programmes

### 12.34

#### THE CURRENT STATE OF POISON CONTROL CENTER IN PAKISTAN AND THE NEED OF CAPACITY BUILDING

*Nadeemullah Khan, Umer Mir, Uzma Rahim Khan, Afshan Rahim Khan, Jamal Ara, Khurram Raja, Farhat Mirza*

*Department of Emergency Medicine, Aga Khan University, Karachi*

*Introduction:* Chemical exposure is a major health problem globally. Poison control center plays a leading role both in developed and developing countries in the prevention and control of poisonous chemicals. Poison control center is associated with decreased hospital admission and decreased ED visits. In a developing country, the poison control center may be the only source of information on toxic chemicals as other resources such as

occupational, food and drug regulatory bodies are lacking.

*Objective:* In this study, we aim to assess the current state of poison control center in Pakistan and highlight gaps in their capacity building needs in those centers.

*Methods:* Cross-sectional survey of two poison control centers "Jinnah post graduate medical center poison control" and "Provincial poison control center" was done during August – December 2011. Data was recorded on a standardized tool.

*Results:* These centers provide care to patients presented with poisoning. Clinical services were available 24/ 7. Information on common local product was available to poison center staff. Both centers were involved in undergraduate and post graduate teaching. Telephonic poison information service to the public was currently not available. There was a limited capacity for qualitative and analytical toxicology. There were limited surveillance activities to capture toxic risk existing in the community and deficiency was observed in chemical disaster planning.

*Conclusion:* Poison control centers in Pakistan need capacity building for specialized training in toxicology, toxicovigilance, chemical disaster planning, analytical laboratory, and telephonic advice service for poisoning cases.

*Keywords:* poisoning, capacity building, toxic

### 12.35

#### LACK OF INVOLVEMENT IN EXTRACURRICULAR ACTIVITIES AND STUDENT'S PERFORMANCE

*Neelam Mushtaq Ali*  
*School of Nursing & Midwifery, Aga Khan University, Karachi*

*Introduction:* Today, secular education play significant role in student's academic life. Along with studies, extracurricular activities are deliberate step as part of academia to build youth's ability and enhance their educational performance. Hence, present paper explores the frequency of utilization of extracurricular activities by first year and second year nursing

students of Aga Khan University School of Nursing and their academic performance.

*Method:* to recognize the range of students pass their leisure time, 30 male and female students between 18-25 years of age were selected through random-stratified sampling. A 10-item questionnaire survey used in order to collect required data. Analysis was performed using SPSS.

*Results:* the research results showed that 94.5% 1st year students manage to utilize their time for extracurricular activities whereas, it has limited to 58.3% by progressing in year two. 65.5% students were participating weekly in supplementary activities. However, it has decline with continuing education to 34.3%. The main contributing factors for student's inactivity were their busy assignment schedule, limited time, laziness, and preference of technologies in leisure time. Also, there was a significant fact that student pass their leisure time in watching television, use of Facebook, listening music, chitchat with friends, and religious rituals. Moreover, 84% of students agreed upon its impacts on their academic and personal life.

*Conclusion:* immobile activities took a lead in utilization of majority of student's extra time in which extracurricular activities dropped at minimum. As a result, to grow an energetic academic life of students, they should be educated regarding advantages of physical and mental activities

*Keywords:* extracurricular activities, nursing students, academic performance

### **12.36** PATIENTS UNDERSTANDING OF DISCHARGE INSTRUCTIONS IN THE EMERGENCY DEPARTMENT OF A TERTIARY CARE PRIVATE HOSPITAL

*Nishi Shakeel, Munawar Khurshed,  
Muhammad Baqir, Jabeen Fayyaz, Sumaira  
Iram, Rakshinda Mujeeb, Uzma Rahim Khan  
Department of Emergency Medicine, Aga Khan  
University, Karachi*

*Introduction:* A key opportunity for emergency physicians to inform and teach patients occurs during the discharge process. The decision to discharge a patient from the Emergency Department (ED) is complex however, once that decision has been made, it is important that patients understand how to properly continue their care at home.

*Objectives:* To describe patients understanding of discharge instructions in the emergency department of a tertiary care private hospital

*Methodology:* It is a prospective, descriptive study which was conducted by telephonic calls to patients discharge from ED in last 48 hours during February 2013 to September 2013. We randomly selected two patients per day from all the ED discharges during the study period. The interviews will be audio recorded in which the patient satisfaction and understanding of discharge instructions will be inquired and patient knowledge will be assessed for their diagnoses, medications, home care, follow-up and return to ED instructions.

*Result:* A total of 199 patients were interviewed out of which 60 (30.1%) were pediatric patients and 139 (69.8%) were adults. Majority were females 104 (53.1%) and overall 133 (95%) were literate enough to read and write. 95 (47.7%) calls were answered by patients themselves. Where 179 (90.4%) patients completely understood the discharge instructions while 14 patients (7.1%) were unable to understand the instructions. 44 (38%) patients understood both written and verbal instructions and the understanding through verbal instruction was 35 (31%).

*Conclusion:* Patients understanding of discharge instructions is satisfactory but there is room for improvement.

*Keywords:* discharge instructions, emergency, Pakistan

### 12.38 PATTERNS OF SCHOOL INJURIES AMONG CHILDREN IN KARACHI, PAKISTAN

*Nukhba Zia, Nishi Shakeel, Rubaba Naeem,  
Asher Feroze, Sumera Iram, Jabeen Fayyaz,  
Uzma Rahim Khan  
Department of Emergency Medicine, Aga Khan  
University, Karachi*

*Introduction:* The inquisitive nature of children and their interaction with the environment makes them prone to injuries. In the context of school environment this becomes an even more important because children are involved in many activities like play, sports, academics all of which can predispose them to injury if there is lack of supervision and preventive measures are not taken. The objective of this study was to review the types of injuries that occur within school environment of Karachi.

*Methods:* This is an ongoing study since May 2013. The data is being collected from class teachers on injuries that took place in last academic year. Only those injuries are being included that caused loss of at least one-half day of school and/or required medical attention and treatment from a school or other healthcare provider. So far 26 class teachers from 17 schools completed the injury record form. A total of 35 injuries have been reported.

*Results:* Of the 35 injuries reported, more than 70% occurred in boys (n=25) between 10 – 14 years of age (n=15, 42.9%). Mean age was 9.7±4.0 years. About two-third of these occurred inside the school (n=23, 65.7%) during sports activities (n=11, 31.4%). About half of the injuries were cuts (n=17, 48.6%) and a quarter resulted in fractures (n=9, 25.7%). Heads and arms (n=14, 40%) were commonly injuries requiring stiches (n=9, 25.7%).

*Conclusion:* Children are prone to get injuries within school environment, therefore there is need for developing injury prevention and management plans for schools.

*Keywords:* School injury patterns, class teachers, Pakistan

### 12.39 VALIDITY AND RELIABILITY OF A QUESTIONNAIRE REGARDING URINARY AND FECAL INCONTINENCE AND UTERO- VAGINAL PROLAPSE: PREVALENCE, ASSOCIATED FACTORS AND IMPACT ON WOMEN'S LIFE IN RURAL PAKISTAN.

*Raheela Mohsin, Hakeem Jokhio  
Department of Obstetrics and Gynaecology, Aga  
Khan University, Karachi*

*Objective:* We developed a questionnaire to assess the prevalence of UI, FI and utero-vaginal prolapse and translated into local language and validated it by a pilot study. The aim of the pilot study was to modify or remove unacceptable questions and select those questions which would generate reproducible answers according to the objectives of the stud

*Methods:* The questionnaire administered by face to face interviews with 29 selected Lady Health Workers who randomly selected 20 women from the list of their catchment areas to complete the sample of 580 women for pilot study. Evaluation of the face and content validity was performed by asking 25 patients and 7 health professionals, respectively. The factor analysis was used to evaluate the construct validity of the questionnaire. The suitability of the data for carrying out such analysis was tested by using the Bartlett sphericity test and the Kaiser-Meyer-Olkin (KMO) statistic test that evaluates the degree of correlation among the questions included in the questionnaire.

*Results :* The Cronbach's alpha co-efficient was 0.703 indicating a high level of reliability of the questionnaire. Regarding face and content validity both patients and experts reported that the statements were clear, easy to understand, in a logical order, and totally representative of the needs of the hospitalized patients. . The statistical criteria Kaiser-Meyer-Olkin and the Bartlett Test of sphericity indicated that the raw data were suitable for the implementation of factor analysis

*Conclusion:* The Sindhi version of our questionnaire is a reliable, consistent, and valid



instrument for assessing UI,FI POP and its impact on quality of life.

*Keywords:* questionnaire, validity, prevalence of urinary fecal and uterovaginal prolapse pakistan

#### 12.41

### MYTHS AND MISCONCEPTIONS ABOUT TREATMENT OF INJURIES: ACCOUNT OF SCHOOL TEACHERS IN KARACHI, PAKISTAN

*Rubaba Naeem, Nukhba Zia, Munawar Khurshed, Badar Afzal, Muhammad Baqir, Uzma Rahim Khan*

*Department of Emergency Medicine, Aga Khan University, Karachi*

*Introduction:* Despite many medical advances there are many strong beliefs about treatment of clinical conditions among educated people that are not evidence based. Injuries are one such common but neglected area. Such misconceptions can affect the prognosis.

*Objective:* This study was undertaken to reveal the myths and misconceptions pertaining to injuries like cut, bruise, sprain, bleeding and amputation etc.

*Methods:* Study has been conducted from May 2013 till to date and extracted the information of common myths and misconceptions of school teachers about certain injuries.

*Results:* From total of 97 teachers from 17 schools some common myths observed related to burn were to apply ointment on the affected area 15 (20.5%), toothpaste 6 (8.2%) and icing 5 (6.9%). Regarding amputation, 6 (19%) believed that amputated part cannot be reattached. About bleeding 8 (10.4%) believed to rinse with water. Most common myths related to choking were to cough 18 (25%), drink water 6 (8.3%) and to hit on the back 14 (19%). Related to dog bites; 3 (4.5%) reported that one must try to extract poison from dog bite area, 2 (3.3 %) believed to apply red chili on it. Half of participants believed to give water in fainting. Regarding poisoning 19(32.2%) believed vomit as a solution.

*Conclusion:* Myths regarding injury treatment/ first aid are prevalent in school teachers. There is need to look educate people to change their misconceptions and train them for first aid training.

*Keywords:* Myths and misconceptions, injury treatment, Pakistan

#### 12.42

### PREDICTORS OF LOW VACCINATION CARD RETENTION OF CARETAKERS OF CHILDREN UNDER FIVE YEARS OF AGE IN KARACHI, PAKISTAN

*Sana Sadiq Sheikh, Asad ali*  
*Departments of Obstetrics and Gynaecology and Paediatrics and Child Health, Aga Khan University, Karachi*

*Background:* Low card retention has been a barrier in accurately estimating the vaccine uptake. To estimate vaccine coverage, source of information can be both parental recall and vaccine card review but parental recall has been questionable.

*Aims:* To determine the risk factors of low vaccination card retention among care takers of 12-59 months old children in Karachi, Pakistan.

*Methods:* It was an analytical cross-sectional study. Households having 12-59 months old children were randomly selected through multistage cluster sampling and 504 eligible children were enrolled. Questionnaire was administered to caretakers to gather information of child's vaccination status through vaccination card or by recall and socio-demographic characteristics. Statistical analysis was done by SAS using logistic regression.

*Results:* Among 462 vaccinated children, only 33% caretakers provided vaccination card. Odds of card retention decrease if caretaker has large size of household (> 5 people sharing one room) (AOR 0.27, 95% CI (.09, .79) and if has child of four to five years of age (AOR .54 (.30, .97). Sex of child, parental education and access to electronic media were not significant predictors in our study.

**Conclusions:** Our study showed that vaccine card retention of 12-59 months old children was low (33%). There is a need to educate caretakers of young children regarding importance of vaccination card and to disseminate this information through vaccine providers. Improving vaccine card retention will help in accurately estimating vaccine coverage and to inform health policy makers and designing interventions to improve vaccine uptake.

**Keywords:** Predictors, vaccine card retention, under five children

### 12.43

#### PREVALENCE OF PERSISTENT DIARRHEA AMONG INFANTS (3-12 MONTHS) EXPOSED TO HIGH LEVELS OF NITRATE IN DRINKING GROUNDWATER SOURCES IN SINDH, PAKISTAN

*Sana Tanzil, Zafar Fatmi  
Department of Community Health Sciences, Aga Khan University, Karachi*

**Introduction:** Nitrate contamination of water is recognized as a public health issue. In Pakistan, it is one of the major water quality problems and 13% of the all water sources are nitrate contaminated. Persistent diarrhea accounts for 36–54% of all diarrhea-related deaths among children less than five years worldwide. Evidence has shown correlation of high level of nitrates with persistent. There is a need to assess the burden of persistent diarrhea among infants exposed to nitrate contaminated drinking ground water sources.

**Objective:** To determine the prevalence of persistent diarrhea among infants (3-12 months) exposed to high levels of nitrates in drinking groundwater in, Sindh.

**Methods:** This study was conducted in the rural settings of the district; Umerkot (Sindh). Data was collected regarding exposure to nitrate contaminated ground water and persistent diarrhea among infants of age 3-12 months. Water samples were also tested for nitrate contamination from selected households. The prevalence of persistent diarrhea among infants

exposed to variable level of nitrates was estimated and compared.

**Results:** The overall prevalence of persistent diarrhea was 7.3%. A statistically significant difference (p value= 0.01) was observed in the prevalence of persistent diarrhea among the three distinct exposure groups i.e. 30% among infants; exposed to <10mg/L, 44% among infants ;exposed to 11-50mg/L and 21% ; among infants exposed to 100mg/L or above, mainly affecting infants below 6 months of age.

**Conclusion:** Contamination of ground water sources with nitrate is an important health concern for infants and needs adequate control and prevention strategies.

**Keywords:** Ground Water, Nitrate, Persistent Diarrhea

### 12.44

#### SIGNIFICANCE OF RDW-SD AND RDW-CV IN DISTINGUISHING BETA THALASSEMIA TRAIT AND IRON DEFICIENCY ANEMIA

*Shahmina Sadaf, Anila Rashid, Bushra Moiz  
Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Introduction:** Iron deficiency anemia (IDA) and beta thalassemia trait (BTT) are the two most common causes of hypochromic microcytic anemia worldwide. The estimated frequency of BTT in our population is approximately 5-6% while that of IDA is 46%. It is important to distinguish the two entities to avoid unnecessary iron therapy in BTT. Discrimination function like RDW is a useful indicator to help identify IDA and BTT without undergoing extensive other laboratory test.

**Objective:** To determine the significance of RDW-SD and RDW-CV in distinguishing beta thalassemia trait and iron deficiency anemia.

**Materials and Methods:** This study was conducted in clinical laboratory, Aga Khan University and hospital in 2013. A total of 200 samples were included having hypochromic microcytic anaemia. 100 samples with normochromic normocytic red cells indices were selected as control. Haemoglobin and red cell

indices were determined using sysmex XE-5000. BTT was diagnosed using high performance liquid chromatography (HPLC). Subjects with hypochromic microcytic anemia but with normal HPLC findings were assumed to be iron deficient.

*Results:* Out of 100 subjects 58 had presumed IDA and 42 patients were BTT. Mean Hb, MCV, MCH, RDW CV and RDW SD in IDA was 8.32 g/dl, 65.75 fl, 18.34 pg, 21.49 and 51.97 and in BTT 9.84 g/dl, 62.88 fl, 18.45 pg, 20.85 and 39.06. In both cases RDW-CV was not significant ( $p=0.83$ ) as compared to RDW-SD ( $p$  value = 0.0).

*Conclusion:* On the basis of our preliminary results, we concluded that the RDW -SD was the most useful parameter to distinguish between IDA and BTT.

*Keywords:* Iron deficiency anemia, beta thalassemia trait, RDW-SD and RDW-CV

#### 12.45

##### RED CHILLIES HAS MORE VITAMIN C AS COMPARED TO GREEN CHILLIES

*Shamsa Hadi, Fatima Kubra, Shehla Khan  
School of Nursing & Midwifery, Aga Khan  
University, Karachi*

*Introduction:* Vitamin C is an antioxidant and anti-allergic agent. It serves as tissue connective 'cement' in muscles, bones, teeth and gums. It helps in speeding of neural signal. Literature suggests that Vitamin C is the major component of chillies. The matured form of chillies i.e. the red chillies has more levels of Vitamin C than raw form i.e. the green chillies.

*Method:* This study aims to compare the level of vitamin C in Red and Green Chillies by iodometric titration. We used 0.005 M Iodine solution ( 2 gram of potassium iodide and 1.3 gram of iodine in 1 liter distilled water), Starch Indicator 0.5% , 50% Standard vitamin C solution (75 gram of Cecon tablets in 150 ML distilled water), 50% Green and Red chillies Solution (75 gram of each grinded in 150 ml DW.) We completed a series of 45 readings (15 readings each) of titrating standard Vitamin C

solution, Solution of green chillies and red chillies with Iodine Solution.

*Result:* The mean volume of iodine solution which neutralized vitamin C concentration in green chillies was 3.82ml whereas 2.38ml in red chillies .This shows that volume of vitamin C was greater in green chillies than the red chillies. Using the formula  $C \propto 1/V$  ( $C$  = Concentration of vitamin C and  $V$  = Volume of vitamin C) showed that the concentration of vitamin C in green chillies was lesser than in red chillies.

*Conclusion:* Our method was based on determination of vitamin C concentration in samples but we couldn't find pure vitamin C sample so our findings were based on difference between the volumes. Although concentration of vitamin C in respective samples was not determined but volume difference between the red and green chillies showed  $V_r$

*Keywords:* Red Chile, Green Chile, Vitamin C

#### 12.46

##### DENGUE: AN EPIDEMIOLOGICAL APPROACH

*Sharmeen Sohail, Rabia Qasim, Shamsa Feroz,  
Rabia Khowaja  
School of Nursing & Midwifery, Aga Khan  
University, Karachi*

*Introduction:* The purpose of this paper was to discuss the prevalence of dengue in Pakistan and in other dengue-endemic countries; to identify its causes and natural history; and to discuss the preventive measures, management and recommendations with regards to dengue.

*Methods:* Literature was reviewed, a maximum of 36 recent literature support including books and articles were reviewed, interpreted and integrated.

*Results:* Our literature review showed that Pakistan has experienced a number of dengue fever outbreaks since 1992 and in 2005. Dengue is now endemic in more than 100 countries in Africa, America, Eastern Mediterranean, Southeast Asia and Western Pacific regions. From an epidemiological viewpoint, dengue is considered to be most rapidly spreading disease

with 30 folds increased incidences in last 50 years. Moreover, two-fifths of world population is at risk of dengue and mortality rate of 2.5% are reported. However, the burden of this disease can be reduced through prevention at all levels (primary, secondary and tertiary levels).

*Recommendations/Conclusion:* Dengue is prevalent globally causing social and economic burden. It is a communicable disease caused by DEN virus via mosquitoes. However, implementation of comprehensive, effective and integrated preventive strategies will reduce incidences of dengue. Early detection is possible through profound awareness facilitating diagnosis and treatment. Supplementary researches and effective partnerships at national, regional and global levels are vital for sustainable prevention and dengue eradication, as currently the treatment of dengue is only symptomatic.

*Keywords:* Endemic, DEN virus, Prevention

#### 12.47

#### CAN CONTRACTING OUT IMPROVE ACCESS, EQUITY AND QUALITY OF MATERNAL AND NEWBORN HEALTH SERVICES?

*Shehla Zaidi, Atif Riaz, Fauziah Rabbani, Iqbal Azam, Syeda Nida Imran, Nousheen Pradhan, Gul Nawaz Khan*  
*Department of Community Health Sciences, Aga Khan University, Karachi*

*Background:* The case of Contracting Out government health services to NGOs has been weak for maternal and child health (MCH) services particularly in developing countries.

*Method:* We conducted a cross sectional comparison of health facilities Contracted Out to a large national NGO with government managed (control) facilities, for maternal and newborn health (MNH) access, quality and equity, in two remote rural districts of Pakistan. Household survey was conducted with 1004 participants recruited covering all women who had childbirth in last six months from catchments of Contracted and control facilities. Furthermore,

health facility surveys with staff and clients, and 36 focus group discussions with purposively selected pregnant/ recently delivered women and spouses were used for in-depth assessment.

*Results:* Contracted out facilities had a significantly higher utilization as compared to control facilities for antenatal care; delivery; postnatal care; and neonatal illness. Contracted out facilities had comparatively better quality in terms of availability of drugs; supplies; patient satisfaction; and staff satisfaction. Facility utilization was inequitably higher amongst more educated and affluent clients. Physical distance, inadequate transport and low demand for facility based care in non-emergency settings were key client reported barriers.

*Conclusion:* Contracting out MNH services can improve facility utilization and quality. However contracting out by itself is insufficient to increase service access across the rural catchment and requires accompanying measures for demand enhancement, transportation access, and targetting disadvantaged clientele.

*Keywords:* Contracting out, access, maternal and newborn health

#### 12.48

#### DETECTION OF HBH DISEASE BY HPLC AND HBH PREPARATION

*Shumaila Qamer, Shahmina Sadaf, Izza Hussain, Farheen Karim*  
*Department of Pathology & Microbiology, Aga Khan University, Karachi*

*Introduction:* Haemoglobin H disease is characterized by the loss of three  $\alpha$ -chains, resulting in excess of Beta chain production. HbH has a high oxygen affinity and is also unstable and precipitates in the circulation giving rise to intracellular inclusions which damage the red cells. The most relevant features are microcytic hypochromic anemia, hepatosplenomegaly, On HPLC, a sharp peak before one minute is seen, as it is a fast moving Hb, HbH preparation show the inclusion bodies when stained with brilliant cresyl blue.

**Objective:** The objective was to diagnose HbH disease by HbH preparation and Fast moving peak on HPLC.

**Materials and Methods:** This study was conducted in section of Hematology-Clinical Laboratories (Department of Pathology & Microbiology), The Aga Khan University Hospital. Study duration was five months (May - Sept 2013). We analyzed 6208 samples. Whole blood samples collected in EDTA were analyzed on High Performance Liquid Chromatography (HPLC) on Variant II, Bio-Rad.

**Results:** Among the 6208 samples analyzed 13(0.20%) samples showed fast moving peak. The MeanHb 6.5, HCT 26.6, MCV 78.2 and MCH 20.1. Peripheral film findings were suggestive of haemoglobinopathy. HPLC results showed normal HbA, HbF and HbA2 in all cases. Chromatogram showed fast moving peak. Based on these findings, there was suspicion of HbH disease. HbH preparation was made for all these samples, 10 (0.16%) samples showed red cells inclusion while 3(0.04%) samples were negative on HbH preparation.

**Conclusion:** Examination of peripheral film, review of chromatograms for fast moving peak and HbH preparation helps in diagnosing HbH disease.

**Keywords:** HbH, fast moving peak, HPLC

#### **12.49** PREVALENCE AND PATTERNS OF OCCUPATIONAL INJURIES AMONG AGRICULTURE WORKERS IN RURAL HYDERABAD PAKISTAN: A CROSS SECTIONAL SURVEY

*Unaib Rabbni, Zafar Fatmi*  
Department of Community Health Sciences, Aga  
Khan University, Karachi

**Background & Objectives:** Agricultural workers has highest burden of injuries among the occupation groups. Despite being largest working sector, there is dearth of community based data about the burden of injuries among the agricultural workers in Pakistan. To determine the prevalence, patterns and risk

factors of occupational injuries among agricultural workers in Rural Hyderabad Sindh Pakistan.

**Methods:** A total of 472 participants were interviewed from agricultural fields in rural Hyderabad. Data was collected through validated structured questionnaire.

**Results:** The mean age of participants were 35.8 ±11.9 years. Annual prevalence of occupational injury was found to be 35.2% (95% CI 30.89% to 39.51%). Most common agents of injuries were hand tools 71.1% and animals 25.3%. Cuts were most frequent 69.9% followed by fractures 15.7%. Common sites of injuries were hands 41% and legs 39.8%. More than half of the injuries 55% occurred during harvesting. Increasing age, low income, presence of animals, driving tractor and showed higher risk for injury.

**Conclusions:** There is high burden of injuries among the agricultural workers. Lack of use of protective equipment and training put young workers into high risk. There is need to carry out further research to test out interventions for injury prevention.

**Keywords:** Injuries, Agriculture workers, Pakistan

#### **12.50** FOLLOW-UP HOUSEHOLD ASSESSMENT FOR CHILD UNINTENTIONAL INJURIES TWO YEARS AFTER THE INTERVENTION

*Uzma Rahim Khan, Aruna Chandran, Nukhba Zia, Cheng-Ming Huang, Sarah Stewart De Ramirez, Rubaba Naeem, Asher Feroze, Adnan A Hyder, Junaid A Razzak*  
Department of Emergency Medicine, Aga Khan University, Karachi and Johns Hopkins University Bloomberg School of Public Health, Baltimore, Maryland, USA

**Introduction:** In low-and-middle-income countries, minimal information on childhood home injury prevention is available. We developed and piloted childhood home injury prevention information and disseminated it through tutorial and pamphlet. This study is the long-term follow-up (LTFUP) of the cohort

which received either of the two interventions. The objective was to assess the comparative impact and long-term behavior changes resulting from initial exposure to either intervention by measuring the prevalence of household hazards 29 months after the initial intervention.

*Method:* This was a community based intervention study done in Karachi. The baseline assessment followed by the interventions was done in June – July 2010 and the long term November 2012 – January 2013. Households with children between the ages of 12 – 59 months were enrolled.

*Results:* Of the 503 households that received either intervention at baseline, 312(62.03%) consented to participate in the long-term phase; 167 (53.52%) in tutorial group and 145 (46.47%) in pamphlet group. Within the tutorial group, significant difference between baseline and LTFUP were found for stoves within the reach of the child (increase from 61.1% to 82.6%, p value <0.001), open buckets of water (decrease from 52.7% to 2.4%, p value <0.001). Within the pamphlet group, significant difference between baseline and LTFUP were found for stoves within the reach of the child (increase from 44.1% to 91.7%, p value <0.001), open buckets of water (decrease from 45.5% to 4.8%, p value <0.001).

*Conclusion:* Child home injury prevention education can help to reduce injuries at home and such interventions need to be done at regular interval.

*Keywords:* Child home injury, interventions, Pakistan

### 12.51

#### INJURY RISK ASSESSMENT IN SCHOOL ENVIRONMENT IN KARACHI, PAKISTAN

*Uzma Rahim Khan, Nishi Shakeel, Rubaba Naeem, Nukhba Zia, Asher Feroze, Shakeel Siddiqui, Junaid A Razzak*  
*Department of Emergency Medicine, Aga Khan University, Karachi*

*Introduction:* Studies from low- income countries have shown that 7% of all childhood

injuries occur in schools; however little is known about the injury hazards present in the school environment. The objective of this study was to develop and pilot a risk assessment tool to identify hazards in the school environment in Karachi.

*Methods:* The study was conducted from March – June 2013. Schools registered either as government, private, or Non-Governmental Organization from all 18 towns of Karachi participated in the study. These hazard observations in school environment were done by trained data collectors.

*Results:* Of the 167 schools approached, hazard assessment was done in 107 (64.07%) schools. 26% classrooms had broken furniture and 19.8% had nails in furniture. In 50.9% of schools the playground surface was of concrete. 22.7% kindergarten children were unsupervised during recess, 27.1% primary schools and 31.2% secondary group. About 28.3% schools had low height of corridor walls, while 60.4% schools had open wires in electrical switches. In 14.2% of schools there were cleaning chemicals in toilets within the reach of children. There were stray dogs within schools (22.4%) and in 40.4% schools students bunk classes and go outside during school timings.

*Conclusion:* This was the first time that injury school environment risks tool was developed and piloted in the context of Pakistan. There was a significant burden of hazards present in the school environment representing an important opportunity for injury prevention.

*Keywords:* School injuries, children, Pakistan

### 12.52

#### FIRST AID AND CARDIOPULMONARY RESUSCITATION TRAINING OF SCHOOL TEACHERS IN KARACHI, PAKISTAN

*Uzma Rahim Khan, Nishi Shakeel, Shakeel Siddique, Muhammad Baqir, Munawar Khursheed, Jabeen Fayyaz, Sumera Iram, Badar Afzal, Nukhba Zia*  
*Department of Emergency Medicine, Aga Khan University, Karachi*

**Introduction:** Children spend 22 to 27% of their waking hours at school and their interaction within school environment can make them prone to injuries. Trainings such as cardiopulmonary resuscitation (CPR) and first aid could be lifesaving. The objective was to train teachers and to compare their knowledge before and after the training.

**Methods:** The study was conducted in 70 schools of Karachi. The teachers were given training in CPR and Basic First Aid for common injuries within school environment based on guidelines of American Heart Association and included both videos and hands-on component. Pretest/posttest approach was utilized to assess knowledge of teachers regarding conditions like bleeding, cuts, fractures, burns etc. The assessment was done using a 12 multiple choice questions tool. Each question was of 1 mark.

**Results:** Total of 600 teachers were trained of which 484 (80.67%) complete pairs of pretest/posttest were available. Mean age of the teachers was  $24.24 \pm 16.36$  years and majority of them were females (83.9%). Most of the teachers belonged to private schools (84.1%). Overall the mean pretest and post test scores were 4.7 and 9.7 out of 12 respectively with a difference of  $5 \pm 2.4$  (p-value <0.001).

**Conclusion:** CPR and first aid training have positive impact on the related knowledge of the teachers. As a way forward we could assess the use of such training by these teachers in their schools.

**Keywords:** First aid and cardiopulmonary resuscitation training, School teachers, Pakistan

### **12.53** PEDESTRIAN BEHAVIORS OF SCHOOL CHILDREN IN KARACHI, PAKISTAN

*Uzma Rahim Khan, Nukhba Zia, Rubaba Naeem, Asher Feroze, Junaid A Razzak*  
Department of Emergency Medicine, Aga Khan University, Karachi

**Introduction:** Pedestrians are vulnerable road-users. Pedestrian road traffic crashes are responsible for a substantial number of injuries

and deaths in Pakistan, there is need to better understand the situations facing by pedestrians especially the children. The objective of this study was to develop and pilot observation tool for pedestrian's behavior and road practices of school children in Karachi.

**Methods:** The study was conducted from March to June 2013. Observations of the children as pedestrians (coming to and going from school) were done around 107 schools in Karachi by trained data collectors. These observations were made during morning and afternoon after taking permission from the schools. No identification of the children was noted.

**Results:** There were 341 pedestrian observations. Only a quarter of the children looked right and left while crossing the road (n=91, 26.7%). Almost half children had their back towards oncoming traffic while walking on road (n=108, 48%). About 11.1% (n=38) children ran to cross the road. About 43.7% (n=149) children did not look out for traffic before stepping on road from side walk. Almost one-third (n=102, 29.9%) children did not walk on the sidewalk when on the road. Only 34.9% (n=119) children were accompanied by an adult.

**Conclusion:** This was the first time that safety behaviors of school children were measured in Pakistan and number of risky behaviors was observed among them. There is need for improved safety for child pedestrians while promoting the health and environmental benefits of walking.

**Keywords:** Pedestrian behaviors, School children, Pakistan

### **12.54** ASSESSING KNOWLEDGE AND PERCEPTION REGARDING AUTISM AMONGST PRIMARY SCHOOL TEACHERS IN KARACHI

*Wajahat Nazir Ahmed, Adil Ayub, Suraksha Srichand, Buria Naeem, Brooj Abro, Komal Aziz, Sehrish Najam, Sara ali, Duraiz murtaza, Ali Ahmed janjua*  
Medical College, Aga Khan University, Karachi

**Background:** Autism spectrum disorders are a group of disorders presenting in a wide array of symptoms. Early detection and subsequent intervention seems to be the key to improve development direction. Since teachers form an important part of early social environment of the child and are in a position to evaluate and advocate referral when necessary, they are an obvious demographic to target for increased awareness. The study assessed the baseline knowledge and misconceptions regarding autism among primary school teachers in Pakistan.

**Methods:** Primary school teachers participated in this study. Knowledge through DSM-IV TR criteria for Autistic Disorder, beliefs about social, emotional, cognitive, treatment and prognosis of the disorder were assessed. Demographic information regarding the participants of the survey was also gathered.

**Results:** Seventy four respondents participated in the study. Mean age of respondents was 34.1± (S.D 9.6) with 66% being females. 52 reported self-reported knowledge with 23 (43.1%) teachers recognizing it as a neurological/mental disorder. Most people (38.5%) reported media as their source of information. The only significant association was between knowledge of Autism and those who attended behavioral classes (odd ratio 0.27 (p=0.02)). Significant misunderstandings of some of the key features of autism were present in most teachers.

**Conclusion:** Results suggests that most teachers have an inadequate understanding of autism due to presence of several misconceptions regarding many of the key features of autism including developmental, cognitive and emotional features. The study has clinical implications and calls for increased education for teachers.

**Keywords:** Autism, Pakistan, Knowledge

## 12.55

### DESCRIPTION OF A COHORT OF ADOLESCENTS AND YOUNG ADULTS FROM OSHIKHANDASS VILLAGE, GILGIT, PAKISTAN: GROWTH AND EDUCATIONAL ATTAINMENT

Wasiat Hassan Shah, Faheemullah Beg, Ejaz Hussain, Assis Jahan, Faran Sikandar, Saba Wasim, Syed Iqbal Azam, Julia M. Baker, Khalil Ahmed, Zeba A. Rasmussen  
Fogarty International Center, National Institutes of Health, USA and Department of Community Health Sciences, Aga Khan University, Karachi and Department of Biological & Biomedical Sciences, Karakoram International University, Gilgit

**Objectives:** To determine socio-economic characteristics, educational achievement and health status of a cohort of adolescents and young adults.

**Introduction:** From 1989-1996, surveillance of illness in 1,857 <age 5 children was conducted in Oshikhandass. A follow-up study is underway to determine the long term impact of early childhood illness on health/ educational development.

**Methods:** After obtaining IRB approval and informed consent, social scientists interviewed young adults and adolescents who were originally enrolled in a 1989-1996 surveillance study of children under age 5. Follow-up of the cohort started in September 2012 and is ongoing. Data were entered in Microsoft Access® and analyzed using SPSS® (Ver.20).

**Results:** Of the original cohort (1,857), 135 died, 1060/1722(62%) live in Oshikhandass, 577(33.5%) are in other cities and 65(3.8%) need tracing. Of 855 interviews conducted to date, median reported age is 19.8 years(11-28). The majority(628/855, 73.5%) had a normal BMI; 17.2% were underweight and 7.8% overweight. All but seven had normal blood pressure (median 114/80 mm Hg). Most respondents reported current health as excellent(9.6%) or satisfactory(52.3%) while 17.4% said poor; 29.9% had previous hospital admission(s). Of the 195 living outside Oshikhandass, 63% are pursuing education. Ten percent of all interviewees were married, of whom 59% had children. Most interviewees (538/855, 59.3%) were full-time students, 11.9% were doing unpaid family work, 8.4% were employed (median income Rs.15000/month) and 4.3% had completed education and were unemployed. Almost half(45.6%) of



interviewees had repeated a class and almost all(97.1%) had taken a class in English. Only 5(0.6%) never enrolled in school. Median educational level was Class 12(range primary to MPhil/PhD).

*Conclusion:* Most of the cohort reports satisfactory health, has normal blood pressure and BMI. Most are currently studying and have high educational achievement.

*Keywords:* Adolescent, Educational achievement, Socioeconomic factor

### 12.56

#### MODEL OF A SUCCESSFUL COMMUNITY CAMPUS PARTNERSHIP: URBAN HEALTH PROGRAM OF AGA KHAN UNIVERSITY KARACHI

*Rabbani F, Memon Y, Gul AX, Pradhan A, Khowaja F, Hatcher PR*

*Department of Community Health Sciences, Aga Khan University, Karachi*

*Background:* The Urban Health Program (UHP) was initiated in 1985 as a community campus partnership model to develop primary health care prototypes. The UHP has tested integrated models of health and development in 17 different urban squatter settlements of Karachi and has evolved through various phases.

*Methods:*The authors map UHP based on four standard stages of community development (Interaction, Motivation, Mobilization and Self Reliance) to reflect UHP's community-campus engagement.

*Results:* UHP has passed through all four stages and has already disengaged from all Phase I, five Phase II and one Phase III site. The latter are sustaining some activities in partnership with local government, NGOs and private health providers. Phase IV of UHP will track progress through each of these four stages of community campus partnership in the existing two sites and aim for gradual disengagement as each site matures and UHP progressively moves on to a new site.

*Conclusion:* The success of the UHP model is determined by the continuation of UHP

operations over decades With communities in all stages of community development, diversity of health professionals trained, over 100 peer reviewed publications, improved access to care for women and children, the presence of social development projects, active partnership with communities in stages of development and successful disengagement of UHP from communities.

*Keywords:* Urban health program; campus partnership.

### 12.57

#### LIFE'S PROSPECTS FOR PAKISTANI WOMEN

*Sarah Saleem*

*Department of Community Health Sciences, Aga Khan University, Karachi*

Millennium development Goal 5 emphasizes on saving the life of women during pregnancy, childbirth and in postpartum period. Reproductive health agenda considers women health in a holistic approach i.e. to regard women's health in relation to social, physical and mental wellbeing in all matters related to reproduction and its processes. Because of the urgent need of saving lives of mothers during pregnancy and delivery and due to the complexities involved in defining reproductive health morbidities, this aspect of women's health remained largely low key as an international agenda and for seeking the attention of donors and researchers especially for developing countries.

Pakistan being a developing country with patriarchal society faces many social and cultural issues where a woman's physical mental and social health remains at stake; be it issues related to female infertility, adolescents life prospects, gender roles, life style of menopausal women, violence against women, menstrual hygiene care practices and empowerment of women. Faculty of Department of Community Health Sciences recognizes these important aspects of women's life. Improper menstrual hygienic practices leading to secondary

infections and infertility, high sedentary life style exposing post-menopausal women to increased risk of chronic morbidities, high prevalence of violence against women and lack of knowledge in youth related to prevention of HIV Aids are some of the highlights of research work raising concerns about response of national health policy for these matters.

*Keywords:* MDG 5; saving the life of women during pregnancy

**12.58**  
MAKING PREGNANCY SAFER FOR  
UNDERPRIVILEGED COMMUNITIES:  
GLOBAL NETWORK EXPERIENCE:  
TWELVE YEARS DEVELOPMENT OF A  
COLLABORATIVE RESEARCH  
MECHANISM AT CHS

*Omrana Pasha*  
*Department of Community Health Sciences, Aga Khan University, Karachi*

Since 2001 AKU has been a member of the Global Network for Women's and Children's Health Research. The Global Network is an NICHD-funded mechanism which aims to expand scientific knowledge, develop research infrastructures, and improve health outcomes by building research partnerships to conduct research on feasible, cost-effective, sustainable interventions to address the major causes of perinatal morbidity and mortality of women and children in the developing world. In the 12 years that the Global Network has been functioning, the Department of Community Health Sciences has built research linkages within AKU, locally in the communities where we work (Thatta and Karachi) and internationally with other GN partners. Since its inception a number of observational studies, including a cohort study of pregnant women in Hyderabad, and five trials have been completed. These studies have resulted in over 50 publications authored by members of the AKU faculty. This has included at least 12 faculty members from AKU who have first authored papers in the international, peer-reviewed

literature. The Global Network has provided support for securing substantial extra-mural funding for both research and training by the faculty members involved in the grant. This grant exemplifies the potential that exists for collaborative research and capacity development within AKU.

*Keywords:* Safe pregnancy; Global Network; research mechanism at CHS.

**12.59**  
EFFECTS OF FINE PARTICULATE MATTER  
ON DAILY MORBIDITY RELATED TO  
CARDIOVASCULAR DISEASES IN A  
DEVELOPING MEGA CITY

*Fatmi Z, Khwaja H, Carpenter D*  
*Department of Community Health Sciences, Aga Khan University, Karachi*

*Background:* Adverse health effects of air pollutants, especially of particulate matter, have been demonstrated in studies conducted in the large cities in developed world. The objective of this study was to investigate the effects of fine particulate matter (PM<sub>2.5</sub>) on hospitalization rates for cardiovascular diseases in Karachi, Pakistan.

*Methods:* Daily levels of PM<sub>2.5</sub> were monitored as well as daily meteorological variables (temperature and relative humidity). Information on daily morbidity (outpatients, hospital admissions and emergency room visits) for cardiovascular diseases was collected from 3 major hospitals of the city. Multivariate analysis using Generalized Additive Model (GAM) was conducted using daily morbidity as outcomes, daily levels of PM<sub>2.5</sub> as exposure, and temperature, relative humidity, days of the week, gender, and age as covariates.

*Results:* The mean level of PM<sub>2.5</sub> in Karachi, 76.3 mg/m<sup>3</sup> (multiple peaks up to 269 mg/m<sup>3</sup>) and 99.9 mg/m<sup>3</sup> (multiple peaks up to 279 mg/m<sup>3</sup>) at different sites. For every 10µg/m<sup>3</sup> increase in daily levels of the PM<sub>2.5</sub> there was 3% increase visits to hospitals related to cardiovascular diseases after adjustment for confounders. Age group 40–60 years were more

strongly affected due to cardiovascular morbidity due to air pollution levels in the city.

*Conclusion:* Air pollution is an important environmental health issue and PM2.5 significantly increases daily rates of morbidity of cardiovascular diseases.

*Keywords:* Cardiovascular diseases; particulate matter; developing mega city.

## 12.60

### SURVEILLANCE FOR CARDIO-METABOLIC SYNDROME RISK FACTORS IN SOUTH ASIA

*Kadir MM, Fatmi SZ, Naeem I, Qidwai W, Masood Q*

*Department of Community Health Sciences, Aga Khan University, Karachi*

*Introduction:* Cardiometabolic disease prevalence is increasing in South Asia. It is currently one of the leading causes of death in South Asia. Economically active age range bears the greatest morbidity and mortality due to this resulting in loss of human capital and productivity.

*Objective:* To develop and implement a model sentinel surveillance scheme capturing population-based CMD risk factor data in three cities of South Asia (two in India and one in Pakistan)

*Methods:* This is a five year study aiming to induct 12000 individual age 20 years and above across the three cities in South Asia. We have collected data of 4258 randomly selected individuals age 20 years and above from different areas of Karachi for determining prevalence of cardio-metabolic disorders and their risk factors. Blood, urine and saliva samples have been collected in addition to questionnaires and certain clinical exams such as blood pressure, weight, BMI and body fat composition. In year three, four and five the follow-up will be conducted for change in risk.

*Results:* The first survey data collection has been completed. Data analysis is currently ongoing. The second round follow-up data collection is complete and data entry is in progress.

*Conclusion:* The study is expected to give a more reliable estimate of burden of cardio-metabolic disorders and risk factors in urban areas of South Asia. This will lead to better health care planning and developing interventions to prevent and manage these problems.

*Keywords:* Cardio-metabolic syndrome; risk factors; South Asia.

## 12.61

### MISSING DIMENSIONS IN UNDERSTANDING & ADDRESSING CHILD MALNUTRITION PROBLEMATIZING MALNUTRITION IN DEVELOPING COUNTRIES.

*Khan KS, Rafique G, Bawani S*

*Department of Community Health Sciences, Aga Khan University, Karachi*

In Pakistan, child malnutrition is frequently studied. Rates of stunting and wasting are calculated; malnutrition as an underlying cause of child mortality is flagged; and importance of micro nutrients stressed... Surveys are conducted and all concerned somberly note that malnutrition rates have not changed over three decades. Meetings and workshops are organized to plan strategies for reducing malnutrition, yet malnutrition prevails. This paper examines a mega project in Pakistan (Tawana Pakistan Project) that demonstrated how malnutrition can be reduced. It draws attention to five missing dimensions in addressing malnutrition, namely: the importance of methodology; role of women/communities; need to highlight inequities; identify structural determinants of malnutrition; and problematize the discourse on malnutrition in Pakistan. The paper concludes that knowledge paradigms of social sciences be used to deepen understanding of social determinants of malnutrition. It offers a framework that incorporates the missing dimensions of the conventional approaches.

*Keywords:* Missing dimensions; child malnutrition; developing countries.

## 12.62

### ACCESS TO ESSENTIAL MEDICINES IN PAKISTAN: POLICY AND HEALTH SYSTEMS RESEARCH CONCERNS

Zaidi S, Bigdeli M, Nishtar NA, Rashidian A.  
Department of Community Health Sciences, Aga Khan University, Karachi

*Introduction:* There is lack of in-depth country level evidence within developing countries on access to medicine. This paper presents i) empirical country level evidence on access to medicine issues in Pakistan and ii) consultative prioritization of policy concerns and identification of emerging research concerns with local stakeholders.

*Method:* An exploratory research was carried out using a health systems perspective and applying the WHO Framework for Equitable Access to Essential Medicine. Methods involved key informant interviews with policy makers, providers, industry, NGOs, experts and development partners, review of published and grey literature, and consultative prioritization in stakeholder's Roundtable.

*Findings:* A synthesis of evidence found major gaps in essential medicine access in Pakistan driven by weaknesses in the health care system as well as weak pharmaceutical regulation. 7 major policy concerns and 11 emerging research concerns were identified through consultative Roundtable. These related to weaknesses in medicine registration and quality assurance systems, unclear and counterproductive pricing policies, irrational prescribing and sub-optimal drug availability. Available research, both locally and globally, fails to target most of the identified policy concerns, tending to concentrate on irrational prescriptions. It overlooks trans-disciplinary areas of policy effectiveness surveillance, consumer behavior, operational pilots and pricing interventions review.

*Conclusion:* Policy concerns related to essential medicine access in Pakistan need integrated responses across various components of the health systems, are poorly addressed by existing evidence, and require an expanded health systems research agenda.

*Keywords:* Access to medicines; Pakistan; policy and health system.

## 12.63

### DIETARY PATTERNS AND ITS INFLUENCE ON PREMATURE CORONARY ARTERY DISEASE

Iqbal SP, Iqbal R, Yakub M, Khan AT, Iqbal MP  
Department of Community Health Sciences, Aga Khan University, Karachi

Premature CAD is common among Pakistani population, especially among those who consume high fat diet and low amounts of fruits and green vegetables. In a case-control study, 203 patients (146 males and 57 females) with their first AMI and age below 45 years, admitted to the National Institute of Cardiovascular Diseases (NICVD), Karachi, were enrolled in the study with informed consent. These were age (within 3 years) and gender matched with 205 healthy adults as controls. Dietary intakes for both were assessed by using a 14-item food frequency questionnaire. Using factor analysis, 3 major dietary patterns - prudent (characterized by high consumption of legumes, vegetables, wheat, chicken and fruits), combination (characterized by high consumption of egg, fish, fruits, juices and coffee) and western (characterized by high intake of meat, fish and tea with milk) were identified. Fasting plasma of all enrolled were analyzed for homocysteine, folate, vitamin B12, lead, ferritin, LDL-cholesterol, HDL-cholesterol and triglycerides. ANOVA was used for comparing quartile means across each pattern, while conditional logistic regression was used to predict the association of AMI with dietary patterns.

Results indicated a protective association between the prudent pattern and development of premature AMI, adjusted for BMI and household income, while a U-shaped association between combination pattern and developing AMI was found. No association was observed between the western pattern and development of AMI. This shows that consumption of prudent diet is protective against development of premature CAD. Moderate intakes of the combination dietary pattern are associated with reduced odds of developing AMI while increased intake does not have any beneficial effect.

*Keywords:* Coronary artery disease; dietary patterns; case control study

## 12.64 IS HEALTH GOVERNANCE POSSIBLE IN PAKISTAN?

*S. Bawani*

*Department of Community Health Sciences, Aga Khan University, Karachi*

*Background:* The WHO Europe (2012) and the European Observatory on Health Systems and Policies (2012) has recently produced two new studies on governance for health, which introduced five innovative strategies to smart governance to address priority determinants of health from around the world.

*Objectives:* The paper describes the five strategic approaches to smart governance for health introduced by WHO Europe (2012). It examines viability of these governance strategies by juxtaposing the policy environment and the state of governance in Pakistan. Lastly, it problematizes the approaches to smart governance in context of Pakistan by reconstructing governance in Pakistan using theory of governmentality studied by Michel Foucault.

*Methods:* The technique of discourse analysis used in qualitative research is applied to examine relevant documents, reports, events and cases cited in the paper. Discourse analysis refers to the approaches qualitative researchers use to analyze use of language, written and spoken expressions and signs.

*Results:* The paper finds that smart governance is a Eurocentric way of defining governance. It overlooks contextual complexities of indigenous societies other than Europe. In Pakistan, absence of policy environment and crisis of governance prevails. Health governance discourse is thus unrealistic.

*Conclusion:* Political leadership and institutional capacities have to be cultivated and sustained (and not democratic dictatorship). A sense of governability has to be nurtured. Values and ideals of the people have to be reflected in the policy environment.

*Keywords:* Problematizes; governmentality; health governance; policy environment; discourse analysis; Eurocentric

## 12.65 EVALUATION OF REGIONAL WORKSHOPS AND FOLLOW UP ACTIVITIES TO STRENGTHEN THE ROLE OF HCPAs IN ACHIEVING MDGs 4 & 5.

*Fauziah Rabbani, Perveen S, Wasim S, Mobeen N, Shaikh BT*

*Department of Community Health Sciences, Aga Khan University, Karachi*

*Background:* Health Care Professional Associations (HCPAs) can contribute to promoting health and achieve Millennium Development Goals (MDGs) 4 and 5. In 2007-2008 the Partnership for Maternal, Newborn and Child Health (PMNCH), Geneva organized capacity building workshops in Malawi, Burkina Faso and Bangladesh. The aim was to strengthen the role of HCPAs in national Reproductive Maternal Newborn and Child Health (RMNCH) planning and programs. This cross sectional study is an evaluation of these regional workshops.

*Methods:* A structured survey, telephonic interviews of workshop participants and desk review of documents were used to analyze the impact of these workshops. Countries were judged on a scale of 1-3 based on accomplishment of objectives. 195 participants from 17 countries attended the three workshops structured around five key areas; advocacy, human resource, organizational strengthening, service quality improvement and RMNCH planning.

*Results:* Out of 17 participating countries, HCPAs in only two countries (12%) were able to increase their impact on RMNCH planning. While all countries developed action plans, 15 (88%) were unable to fully implement them despite increased interactions between HCPAs and with Ministry of Health (MOH). Nine countries (53%) implemented their action plans partly. The engagement of MOH emerged as a strong indicator of HCPA contribution towards RMNCH planning.

*Conclusion:* Strong and sustained follow-up by PMNCH, clear sense of ownership by HCPAs, designated staff and financial resources emerged as important thematic determinants for

implementation of action plans. These workshops were generally successful in encouraging HCPA collaboration and marching towards MDGs 4 and 5.

*Keywords:* Health care professional association; millennium development goals; evaluation; regional workshops.

## **12.66** PROJECT NIGRAAN: ADDRESSING STRUCTURAL GAPS IN SUPERVISORY SYSTEM OF PAKISTAN'S LADY HEALTH WORKER PROGRAM TO ACHIEVE MILLENNIUM DEVELOPMENT GOAL 4

*Rabbani F, Gul AX, Perveen S*  
*Department of Community Health Sciences, Aga Khan University, Karachi*

*Background:* Despite the deployment of over 100,000 Lady Health Workers (LHWs), under-five mortality in Pakistan has remained stagnant over the last decade. Evaluation of the LHW program identifies deficient knowledge and skills of LHWs in case management of pneumonia and diarrhea and weak supervision by Lady Health Supervisors (LHSs) as significant shortcomings of the Program.

*Methods:* This cluster randomized, controlled trial will be conducted in district Badin, Sindh, over three years. The intervention aims to improve LHS supervisory and clinical mentoring skills through focused trainings on supportive supervision and feedback as well as Community Case Management skills of pneumonia and diarrhea along with revised LHS supervision tools in line with these trainings. The study population consists of LHSs, LHWs and caregivers of children under five. Each LHS will serve as a cluster with a total of 17 clusters in each intervention and control arms.

*Expected Outcomes and Results:* We anticipate that the intervention will expand coverage and quality of case management of diarrhea and pneumonia in children under five, in terms of the number of children with symptoms of pneumonia and/or diarrhea who are treated with

antibiotics for pneumonia and ORS/Zinc for diarrhea.

*Conclusion:* Community Case Management (CCM) of pneumonia and diarrhea in children under five by LHWs increases access to care, reduces treatment failure and improves care-seeking attitudes of caregivers, however, health workers need to be adequately supervised for CCM to be successful.

*Keywords:* Supportive supervision; lady health supervisors; childhood diarrhea and pneumonia.

## **12.67** RATIONAL DRUG USE: A SNAPSHOT OF THE EVIDENCE FROM PAKISTAN AND EMERGING PRIORITY CONCERNS

*Zaidi S, Nishtar NA*  
*Department of Community Health Sciences, Aga Khan University, Karachi*

*Introduction:* Evidence indicates that irrational drug use is common in developing countries however there is lack of country level synthesis on rational drug use for strategizing policy actions. We conducted a scoping review to collate existing evidence on rational use in Pakistan and identify policy concerns.

*Methods:* We conducted a non-systematic review on the six parameters of irrational drug use as defined by WHO. We looked for studies that had presented primary data. An electronic database search of peer reviewed and grey literature yielded 38 studies comprised of 35 researches and 3 reviews supported by primary data. Quality filters were not applied to studies retrieved as our purpose was to get a landscape of evidence rather than a systematic sifting of evidence given that literature is thin in this area.

*Findings:* Prescription of medicines and injections is higher in Pakistan compared to average for LMICs, mainly driven up high level of antibiotic usage in the private sector. Medicines are inappropriately prescribed even for endemic diseases, essential drug list compliance is low, prescribing predominantly follows brand names, and low cost options are frequently overlooked in favor of costlier

medicines. Dispensing and community pharmacy is weak with underequipped drug outlets, inappropriate access to over the counter drugs and insufficient attention to safety measures during dispensing. There is less literature on self-medication and adverse drug reactions. Compounding factors include excessive registration of drugs, open access of industry to health providers, and weak regulation of private sector. Repercussions of irrational use have already emerged in Pakistan antimicrobial resistance and injection linked Hepatitis B&C infection and drugs consuming the largest share of household expenditure. There is need for improved quality of research in this area giving attention to standardization of methods, periodic updates and nationally representative samples.

*Conclusion:* Policy measures are needed across consumer, provider, supply management and drug regulation levels for rational drug use. Research investment is simultaneously required for standardized provider, pharmacy and community surveys, formative research on consumer demand, and collation of best lessons from regional policy ventures.

*Keywords:* Drug use, existing evidence, developing countries

## **12.68** STRENGTHENING QUALITY OF INFECTION CONTROL THROUGH BETTER GOVERNANCE: A HOSPITAL BASED CASE STUDY FROM KARACHI PAKISTAN

*S. Perveen, Fauziah Rabbani, Gregory Pappas,  
Zafar Fatmi*  
*Department of Community Health Sciences, Aga  
Khan University, Karachi*

*Background:* Rates of nosocomial infections (NCIs) are considered key quality indicators for patient care. Increasing NCIs worldwide especially in low and middle income countries like Pakistan represent a global health emergency. This study aimed to understand infection control management as a proxy of quality of health care at a public sector hospital in Pakistan using the 7S McKinsey Framework

and identify factors which impede proper infection control implementation.

*Methods:* A facility-based qualitative case study was conducted at Civil Hospital Karachi (CHK) from July - September 2008. We conducted in-depth interviews using a semi-structured guide/questionnaire. Purposive sampling included all levels and types of managers potentially involved in administration of a typical public sector hospital. Transcribed interviews were analyzed in light of the 7s McKinsey framework of management to identify various themes.

*Results:* We interviewed 20 participants. 75% reported that there is no well-established, documented infection control policy or strategy present at CHK; 70% reported lack of accountability and scarcities of financial and skilled human resource. In addition, there is an absence of a centralized registration system of NCIs. Although, infection control is considered to be important by the employees but it is not shared as a value among all the employees and it is given low priority on the management agenda.

*Conclusion:* Infection control is not afforded adequate attention in the management tiers of CHK adding to compromised quality of patient care.

*Keywords:* Quality improvement; infection control management; public-sector hospital, Pakistan

## **12.69** NPO PERFORMANCE IN REPRODUCTIVE HEALTH SECTOR OF LOW AND MIDDLE INCOME COUNTRIES: WHAT IS THE INFLUENCE OF THE WIDER POLICY CONTEXT?

*S. Zaidi, AX Gul*  
*Department of Community Health Sciences, Aga  
Khan University, Karachi*

*Background:* Non-Profit Organizations (NPOs) are increasingly being promoted as preferred providers to replace weak government services in Low and Middle Income Countries (LMIC) but results on ground show mixed performance.

*Objectives:* This paper collates gray and published literature providing an overview of how policy context impacts on NPO performance in reproductive health. Socio-political context, state policies and donor dependency indirectly influence NPO working by shaping operational space, autonomy, networking and mandate.

*Methods:* A broad search of both peer reviewed and 'gray' literature was attempted. Sources included online databases using the search terms of 'NPO performance', 'NPO effectiveness', 'NPOs in LMICs' 'NPO in health sector' 'reproductive health' 'women's health' 'women's development' and 'case studies'.

*Results:* State policies, donor dependency, and the local socio-political context emerge as important drivers of NPO performance in the health sector directly influencing NPO operational space, autonomy, networking and mandate. Traditional NPO support measures will continue to result in uneven performance and even at times detract NPOs from their client focused attributes unless there is simultaneous investment in macro policy measures aimed at enhancing citizenship, establishing democratic structures at local level, and moving away from punitive frameworks for NPO regulation to those based on incentives and self-regulation. These need to be backed with measures at the meso-level, aimed at space and funds for NPO networking, NPO-government engagement forums at policy and service delivery levels, training opportunities, enhancement in internal funding, and funding cycles that allow for iterative learning.

*Conclusions:* Policy measures are needed to build better policy space and regulatory frameworks for NPOs, state-NPO collaboration forums, and greater reliance on internal funding.

*Keywords:* Non-Profit Organizations; Low and Middle Income Countries; policy.

## 12.70

### PARALLEL NGO NETWORKS FOR HIV CONTROL: RISKS AND OPPORTUNITIES FOR NGO CONTRACTING

Zaidi S, Gul AX, Nishtar NA

Department of Community Health Sciences, Aga Khan University, Karachi

*Background:* NGO 'market' often comprises of parallel NGO networks responding to same service but with widely different service packages, approaches, and agendas. Policy measures are increasingly reliant on NGO contracting and need to take into account compartmentalized working of NGOs.

*Objectives:* NGO response to HIV control in Pakistan is analyzed as a country case study exploring i) NGO networks in existence, their distinct features and responses, and ii) the risks and opportunities these presented for contracting for HIV prevention.

*Methods:* Qualitative exploratory research was conducted using Semi-structured and in-depth interviews with NGOs and experts. NGO programmatic material and documents to contracting initiatives were reviewed. The findings were then triangulated.

*Results:* We found that there were two distinct NGO communities comprising of Reproductive Health NGOs working on HIV prevention in general population and a group of NGOs centrally focused on HIV and working with high risk groups. Both NGO communities were historically different in terms of evolution, ideology, organizational features, programmatic goals and clientele. NGO Contracting of NGOs for service delivery subsequently overcame contextual barriers by moving NGO providers to more standardized service delivery. At the same time, contracting faced NGO providers of uneven capacities and produced new barriers through rivalry for contracts. While contracting was successful in providing greater service uniformity, there continued to be little policy level integration between HIV and RH.

*Conclusion:* Market based measures for HIV can result in productive interaction between parallel NGO communities but need to be accompanied by policy measures aimed at common HIV



interpretation and integrated programming targeting a wider set of actors.

*Keywords:* NGO networks; HIV control; NGO contracting.

## 12.71

### THE AILING QUALITY OF HEALTH CARE SERVICES: CASE OF PAKISTAN

*Fauziah Rabbani, Perveen S  
Department of Community Health Sciences, Aga Khan University, Karachi*

*Introduction:* Despite a prescribed regulatory framework for education and practice of medicine by PMDC, provision of good quality health care remains a challenge in Pakistan. This case study aims to better understand the existing quality care initiatives (QCI) in Pakistan.

*Methods:* A desk review helped to categorize QCI into public, private and donor assisted projects. Examples from public sector initiatives include People's Primary Health Care initiative (PPHI) and National Program for Family Planning and Primary Health Care (LHW program). Examples from private sector organizations include Health and Nutrition Development Society (HANDS), Health Oriented Preventive Education (HOPE), Aga Khan University Hospital (AKUH), Karachi and PIQC institute of Quality. The donor assisted projects include Pakistan Initiative for Mothers and Newborns (PAIMAN) and Pay for Performance (P4P) voucher schemes.

*Results:* WHO health systems theoretical framework classified the health care quality challenges into: (i) Service Delivery (ii) Health Workforce (iii) Information Gap (iv) Medical Products (v) Financing (vi) Governance. The case study has identified that within an overall meager health budget, QCI in Pakistan are sporadic and dependent on special donor funded projects.

*Conclusion:* Network and consortia building between public and private sectors in Pakistan, capacity building of health care professionals, formulation of quality improvement teams at national and provincial level post devolution,

recertification of providers, quality assurance through routine monitoring of quality indicators and accreditation of health care organizations can help to improve the ailing quality of health services in Pakistan.

*Keywords:* Quality initiatives, health care services, Pakistan

## 12.72

### THE MATERNAL AND NEWBORN HEALTH REGISTRY STUDY OF THE GLOBAL NETWORK FOR WOMEN'S AND CHILDREN'S HEALTH RESEARCH.

*Goudar SS, Carlo WA, McClure EM, Pasha O, Patel A, Esamai F, Chomba E, Garces A, Althabe F, Kodkany B, Sami N, Derman RJ, Hibberd PL, Liechty EA, Krebs NF, Hambidge KM, Buekens P, Moore J, Wallace D, Jobe AH, Koso-Thomas M, Wright LL, Goldenberg RL.  
Department of Community Health Sciences, Aga Khan University, Karachi*

*Objective:* To implement a vital statistics registry system to register pregnant women and document birth outcomes in the Global Network for Women's and Children's Health Research sites in Asia, Africa, and Latin America.

*Methods:* The Global Network sites began a prospective population-based pregnancy registry to identify all pregnant women and record pregnancy outcomes up to 42 days post-delivery in more than 100 defined low-resource geographic areas (clusters). Pregnant women were registered during pregnancy, with 42-day maternal and neonatal follow-up recorded-including care received during the pregnancy and postpartum periods. Recorded outcomes included stillbirth, neonatal mortality, and maternal mortality rates.

*Results:* In 2010, 72848 pregnant women were enrolled and 6-week follow-up was obtained for 97.8%. Across sites, 40.7%, 24.8%, and 34.5% of births occurred in a hospital, health center, and home setting, respectively. The mean neonatal mortality rate was 23 per 1000 live births, ranging from 8.2 to 48.5 per 1000 live

births. The mean stillbirth rate ranged from 13.7 to 54.4 per 1000 births.

*Conclusion:* The registry is an ongoing study to assess the impact of interventions and trends regarding pregnancy outcomes and measures of care to inform public health.

*Keywords:* Maternal and newborn health registry; pregnant women; vital statistics registry system

### 12.73

#### NEURODEVELOPMENTAL OUTCOMES IN INFANTS REQUIRING RESUSCITATION IN DEVELOPING COUNTRIES.

*Carlo WA, Goudar SS, Pasha O, Chomba E, McClure EM, Biasini FJ, Wallander JL, Thorsten V, Chakraborty H, Wright LL; Brain Research to Ameliorate Impaired Neurodevelopment-Home-based Intervention Trial Committee; National Institute of Child Health and Human Development Global Network for Women's and Children's Health Research and Department of Community Health Sciences, Aga Khan University, Karachi*

*Objective:* To determine whether resuscitation of infants who failed to develop effective breathing at birth increases survivors with neurodevelopmental impairment.

*Study design:* Infants unresponsive to stimulation who received bag and mask ventilation at birth in a resuscitation trial and infants who did not require any resuscitation were randomized to early neurodevelopmental intervention or control groups. Infants were examined by trained neurodevelopmental evaluators masked to both their resuscitation history and intervention group. The 12-month neurodevelopmental outcome data for both resuscitated and non-resuscitated infants randomized to the control groups are reported.

*Results:* The study provided no evidence of a difference between the resuscitated infants (n = 86) and the non-resuscitated infants (n = 115) in the percentage of infants at 12 months with a Mental Developmental Index <85 on the Bayley Scales of Infant Development-II (primary

outcome; 18% versus 12%; P = .22) and in other neurodevelopmental outcomes.

*Conclusions:* Most infants who received resuscitation with bag and mask ventilation at birth have 12-month neurodevelopmental outcomes in the reference range. Longer follow-up is needed because of increased risk for neurodevelopmental impairments.

*Keywords:* Neurodevelopmental outcomes; infants; resuscitation.

### 12.74

#### EPIDEMIOLOGY OF STILLBIRTH IN LOW-MIDDLE INCOME COUNTRIES: A GLOBAL NETWORK STUDY.

*McClure EM, Pasha O, Goudar SS, Chomba E, Garces A, Tshetu A, Althabe F, Esamai F, Patel A, Wright LL, Moore J, Kodkany BS, Belizan JM, Saleem S, Derman RJ, Carlo WA, Hambidge KM, Buekens P, Liechty EA, Bose C, Koso-Thomas M, Jobe AH, Goldenberg RL Department of Community Health Sciences, Aga Khan University, Karachi*

*Objective:* To determine population-based stillbirth rates and to determine whether the timing and maturity of the stillbirths suggest a high proportion of potentially preventable deaths.

*Design:* Prospective observational study.

*Setting:* Communities in six low-income countries (Democratic Republic of Congo, Kenya, Zambia, Guatemala, India, and Pakistan) and one site in a mid-income country (Argentina).

*Population:* Pregnant women residing in the study communities.

*Methods:* Over a five-year period, in selected catchment areas, using multiple methodologies, trained study staff obtained pregnancy outcomes on each delivery in their area.

*Main outcome measures:* Pregnancy outcome, stillbirth characteristics.

*Results:* Outcomes of 195,400 deliveries were included. Stillbirth rates ranged from 32 per 1,000 in Pakistan to 8 per 1,000 births in Argentina. Three-fourths (76%) of stillbirth

offspring were not macerated, 63% were  $\geq 37$  weeks and 48% weighed 2,500 g or more. Across all sites, women with no education, of high and low parity, of older age, and without access to antenatal care were at significantly greater risk for stillbirth ( $p < 0.001$ ). Compared to those delivered by a physician, women delivered by nurses and traditional birth attendants had a lower risk of stillbirth.

*Conclusions:* In these low-middle income countries, most stillbirth offspring were not macerated, were reported as  $\geq 37$  weeks' gestation, and almost half weighed at least 2,500 g. With access to better medical care, especially in the intrapartum period, many of these stillbirths could likely be prevented.

*Keywords:* Epidemiology; stillbirth; low-middle income countries.

## 12.75

### ASSESSMENT OF OBSTETRIC AND NEONATAL HEALTH SERVICES IN DEVELOPING COUNTRY HEALTH FACILITIES

*Manasyan A, Sarah Saleem, Koso-Thomas M, Althabe F, Omrana Pasha, Elwyn Chomba, Goudar SS, Patel A, Esamai F, Garces A, Kodkany B, Belizan J, McClure EM, Derman RJ, Hibberd P, Liechty EA, Hambidge KM, Carlo WA, Buekens P, Moore J, Wright LL, Goldenberg RL*  
Centre for Infectious Disease Zambia, Lusaka, Zambia. and Department of Community Health Sciences, Aga Khan University, Karachi

*Objective:* To describe the staffing and availability of medical equipment and medications and the performance of procedures at health facilities providing maternal and neonatal care at African, Asian, and Latin American sites participating in a multicenter trial to improve emergency obstetric/neonatal care in communities with high maternal and perinatal mortality.

*Study Design:* In 2009, prior to intervention, we surveyed 136 hospitals and 228 clinics in 7 sites in Africa, Asia, and Latin America regarding staffing, availability of equipment/ medications, and procedures including cesarean section.

*Results:* The coverage of physicians and nurses/midwives was poor in Africa and Latin America. In Africa, only 20% of hospitals had full-time physicians. Only 70% of hospitals in Africa and Asia had performed cesarean sections in the last 6 months. Oxygen was unavailable in 40% of African hospitals and 17% of Asian hospitals. Blood was unavailable in 80% of African and Asian hospitals.

*Conclusion:* Assuming that adequate facility services are necessary to improve pregnancy outcomes, it is not surprising that maternal and perinatal mortality rates in the areas surveyed are high. The data presented emphasize that to reduce mortality in these areas, resources that result in improved staffing and sufficient equipment, supplies, and medication, along with training, are required.

*Keywords:* Assessment; obstetric and neonatal health services; health facilities.

## 12.76

### APPLICATION OF 4% CHLORHEXIDINE SOLUTION FOR CORD CLEANSING AFTER BIRTH REDUCES NEONATAL MORTALITY AND OMPHALITIS.

*Sarah Saleem*

*Department of Community Health Sciences, Aga Khan University, Karachi*

Four per cent chlorhexidine solution is considered as an ideal antiseptic for cord cleansing after birth in newborns for the prevention of infection-related mortality and morbidity. Currently the debate is focused on identifying the best frequency of its applications and its inclusion in safe delivery kits for home deliveries in resource-poor situations. A community-based, parallel cluster-randomised trial was conducted in Sylhet, Bangladesh to test the efficacy of two regimens of single and multiple applications of 4% chlorhexidine for cord cleansing compared to dry cord care in reducing neonatal morbidity and mortality. The neonatal death rate was significantly lower in the single application group versus the dry cord care group but not in the multiple cleansing group compared with the dry cord care group. The risk

of severe cord infection was significantly less in the multiple application group compared with the dry cord care group. There was not a significant difference in risk of severe cord infection between the single application group and the dry cord care group.

*Commentary:* This was a well-conducted trial. The randomisation and field procedures performed are commendable and can be replicated for similar home birth settings. However, the results were not as clear-cut as one would like. The single and multiple treatment groups showed significant benefit compared with the dry cord care group, but for different outcomes. The results of two other large-scale home birth trials carried out in Asia using multiple dosing regimens confirm the value of application of 4% chlorhexidine to the umbilical cord stump for reducing neonatal mortality. Thus, while it is clear that 4% chlorhexidine applied to the cord at least once reduces neonatal mortality, the study objective to determine the optimal frequency with which to deliver the intervention remains inconclusive. The authors have acknowledged the limitations of the trial well. Further information on maternal health seeking behavior for neonatal morbidity, referrals made for neonatal illness by community health workers, and treatment received for comorbidities in all the three groups could have furthered the understanding of the impact of the interventions. In conclusion, there is strong evidence from this and other studies to support the hypothesis that the application of 4% chlorhexidine for cord care reduces overall neonatal mortality.

*Keywords:* Chlorhexidine solution; cord cleansing; reduces neonatal mortality.

## 12.77

### PREVALENCE AND FACTORS LEADING TO CHRONIC RESPIRATORY SYMPTOMS AMONG FARMERS IN RURAL SINDH, PAKISTAN.

*Khoso A, Kadir MM*

*Department of Community Health Sciences, Aga Khan University, Karachi*

*Background:* Farming has been known as a high-risk occupation for the development of work-related symptoms since ancient times. Pesticides are potential risk factors for the development of respiratory diseases among farmers. This study aimed to determine the prevalence of chronic respiratory illnesses among farmers of rural Sindh and to identify factors leading to chronic respiratory illnesses in them.

*Methods:* This cross-sectional survey was conducted in 2012, among 381 farmers, living in Thatta. A structured and pre-tested questionnaire was used for the study (ATS-DLD-78A) and farmers were recruited using purposive sampling technique.

*Results:* This study found that 54.3% farmers were using pesticides in the fields and most of them worked for almost 7 hours in the fields daily. Chronic obstructive pulmonary disease was found in 6.8% of the farmers, while 29.4% farmers were reported to have asthma symptoms.

Univariate analysis found non-smokers more likely to have COPD (OR: 4.07; 95% CI: 1.80-9.17), while there was protective effect of age on farmers older than age 45 years (OR: 0.37; 95% CI: 0.15-0.94). There were similar findings in older aged people for symptoms of asthma (OR: 0.38; 95% CI: 0.22-0.65). Moreover females were also less likely to have asthma symptoms (OR: 0.49; 95% CI: 0.31-0.78), as well as belonging to low (OR: 0.38; 95% CI: 0.21-0.70) and least socio-economic status (OR: 0.51; 95% CI: 0.26-0.99).

Further analysis is under process to identify the interplay of various factors leading to chronic respiratory illnesses in the farmers.

*Keywords:* Chronic respiratory symptoms; farmers; Pakistan

### 12.78

#### ASBESTOS RISK ASSESSMENT IN PAKISTAN; CURRENT SCENARIO AND WAY FORWARD

*Khan AA, Nafees AA, Fatmi Z  
Department of Community Health Sciences, Aga Khan University, Karachi*

*Introduction:* Asbestos is one of the most used industrial minerals utilized in various fields and occupations around the globe and its prolonged exposure is predominantly linked to diseases like asbestosis, mesothelioma and asbestos related lung cancer. Currently around 70 % of the global consumption of asbestos is from Asian countries like China, India, Thailand and Indonesia.

*Objectives:* The objective of this review was to carry out the situational analysis of Asbestos risk assessment in Pakistan.

*Methods:* A review of the literature was done for Asbestos risk assessment in Pakistan. Google scholar, Pubmed and Pakmedinet was used as search engines.

*Results:* Pakistan has still not banned asbestos generation and its consumption in the country is increasing day by day. Approximately 90% of mining deposits of asbestos are in Khyber Pakhtunkhwa (KPK) province. There is lack of literature regarding asbestos risk assessment in the country. Some work done in different areas of KPK province shows that the exposure level of asbestos is hundreds and thousands of times greater than the permissible exposure limit in the outdoor and indoor environment as specified by World Health Organization (WHO) and OSHA.

*Conclusion:* Therefore, in addition to increasing awareness about adverse health outcomes associated with continuous asbestos exposure, there is urgent need to develop capacity for conducting risk assessments for asbestos in the country. National environmental quality standards (NEQS) and permissible exposure limits (PELs) should be introduced and the Environmental Protection Agency (EPA) of Pakistan has to take decisive steps towards the complete ban of asbestos.

*Keywords:* Asbestos; risk assessment; Pakistan

### 12.79

#### ISSUES WITH SOLID WASTE MANAGEMENT IN SOUTH ASIAN COUNTRIES: A SITUATIONAL ANALYSIS OF PAKISTAN

*Khan AA, Ahmed Z, Siddiqui MA  
Department of Community Health Sciences, Aga Khan University, Karachi*

*Introduction:* Solid Waste Management (SWM) is the generation, separation, collection, transfer, transportation and disposal of waste in a way that takes into account public health, economics, conservation, aesthetics, and the environment, and is responsive to public demands. Failure of the municipal solid waste management system has also serious environmental impacts like land and air pollution, blockage of drains and water pollution in natural streams.

*Objectives:* The objective of this review was to carry out the situational analysis of solid waste management in South Asian countries particularly in the context of Pakistan.

*Methods:* A review of the literature was done for solid waste management in South Asian countries particularly in the context of Pakistan. Google scholar, Pubmed and Pakmedinet was used as a search engine. Books were also consulted that provides information about SWM.

*Results:* There are various factors that attribute to poor solid waste management, i.e., lack of public awareness, unplanned city growth, high waste generation and non-functioning of existing systems. Rate of urbanization, scavenger role for recyclable separation and the capacities of existing municipalities for solid waste management are also important factors that should be considered.

*Conclusion:* It can be concluded that unfortunately solid waste is not considered a big problem in Pakistan and health authorities fail to appreciate the magnitude of the problem. Participation of various sectors of community and government and private sector is important for better management of solid waste. Regulatory authorities have to make certain rules and most importantly find ways to implement it.

*Keywords:* Solid waste management; Pakistan; situational analysis.

### 12.80

#### INDOOR AIR POLLUTION (PM<sub>2.5</sub>) DUE TO SECONDHAND SMOKE IN SELECTED HOSPITALITY AND ENTERTAINMENT VENUES OF KARACHI, PAKISTAN

Nafees AA, Taj T, Kadir MM, Fatmi Z Lee K, Sathiakumar N  
Department of Community Health Sciences, Aga Khan University, Karachi

*Objective:* To determine PM<sub>2.5</sub> levels at various hospitality and entertainment venues of Karachi, Pakistan.

*Methods:* This was a descriptive cross-sectional study conducted at various locations in Karachi, during July 2009. Sampling was done at 20 enclosed public places which included hospitality (restaurants and cafés) and entertainment (snooker/billiard clubs and gaming zones) venues. PM<sub>2.5</sub> levels were measured using an aerosol monitor.

*Results:* All entertainment venues had higher indoor PM<sub>2.5</sub> levels as compared to their immediate outdoors. The indoor PM<sub>2.5</sub> levels ranged from 25 - 390 µg/m<sup>3</sup> and the outdoor PM<sub>2.5</sub> levels ranged from 18 - 96 µg/m<sup>3</sup>. The overall mean indoor PM<sub>2.5</sub> level was 138.8 µg/m<sup>3</sup> (± 112.8). Amongst the four types of venues, the highest mean indoor PM<sub>2.5</sub> level was reported from snooker/billiard clubs: 264.7 µg/m<sup>3</sup> (± 85.4) and the lowest from restaurants: 66.4 µg/m<sup>3</sup> (± 57.6) while the indoor/outdoor ratio ranged from 0.97 to 10.2, highest being at the snooker/billiard clubs. The smoking density ranged from 0.21 to 0.57, highest being at gaming zones. The Indoor PM<sub>2.5</sub> concentration and smoking density were not significantly correlated (Spearman's correlation coefficient = 0.113; p=0.636).

*Conclusion:* This study demonstrates unacceptably high levels of PM<sub>2.5</sub> exposure associated with secondhand smoke at various entertainment venues of Karachi even after 8 years since the promulgation of smoke-free ordinance (2002) in Pakistan however; better compliance may be evident at hospitality venues. Results of this study call for effective implementation and enforcement of smoke-free environment at public places in the country.

*Keywords:* Indoor air pollution; secondhand smoke; Karachi, Pakistan.

### 12.81

#### PERINATAL LEAD LEVELS AND ENVIRONMENTAL LEAD SOURCES: A STUDY FROM AN URBAN CENTER IN PAKISTAN

Kadir MM, Naqvi S, Sathiakumar N  
Department of Community Health Sciences, Aga Khan University, Karachi

*Introduction:* Lead toxicity remains a major environmental health risk. Pakistan and South Asian countries consider phasing-out of leaded gasoline as an adequate measure for control of lead. However, lead deposited in environmental media and maternal bone continues to expose fetuses and children.

*Objectives:* (1) to estimate mean umbilical cord blood lead level and the proportion of newborns with high cord blood lead levels (>10µ/dl); (2) to determine sources and levels of environmental lead exposure in children's homes and surroundings; (3) to identify major determinants of umbilical cord blood lead level (BLL) including environmental sources and maternal determinants.

*Methods:* We interviewed 500 mothers presenting for delivery at the study hospitals re-collected their blood for blood lead levels, serum ferritin and hemoglobin, and also umbilical cord blood for lead levels in newborns. We conducted environmental source measurements in homes and surrounding environment

*Results:* Mean cord blood lead levels were found to be 15.9 µgm/dl (8.1) and mothers means blood lead levels were 26.1 µgm/dl (3.9). 75% of mothers and 90% of newborn had levels more than 10 µgm/dl. At home environment high levels are found in cooking utensils, bangles and surma (a traditional cosmetic for eyes).

*Conclusion:* This study shows lead levels higher than 10 µgm/dl in majority of mothers and newborns. It provides a better understanding of the sources of lead in household environment. Results of the study provide basis for which to inform issues of lead abatement and environmental risk reduction in Pakistan and other countries in the region.

*Keywords:* Perinatal lead levels; environmental lead sources; Pakistan.

**12.82**  
MUSCULOSKELETAL COMPLAINTS  
AMONG NURSES WORKING AT A  
TERTIARY CARE HOSPITAL IN KARACHI,  
PAKISTAN

*Kadir MM, Khan AA, Sathiakumar N, Coggon D*  
*Department of Community Health Sciences, Aga*  
*Khan University, Karachi*

*Introduction:* Musculoskeletal symptoms are common among nurses, and have been linked with physical stresses from patient handling. However, their occurrence depends also on psychosocial factors, and may be influenced by health beliefs and expectations.

*Objectives:* To assess the musculoskeletal complaints in a sample of nurses in Karachi, Pakistan.

*Methods:* We carried out a cross-sectional study of nurses at a tertiary care hospital, using the standardized CUPID questionnaire. Pain prevalence was ascertained for six anatomical sites - low back, neck, shoulder, elbow, wrist/hand and knee.

*Results:* 178 full time registered nurses participated in the study. 73% were women and all were aged less than 35 years. 64% has worked in nursing for 1 to 5 years and the rest for longer. The most commonly reported site of pain was the low back (43% in the past 12 months and 27% in the past month. This was followed by pain in the knee (19% and 15%), shoulder (20% and 11%), and neck (18% and 9%). 37% of respondents reported pain at more than one anatomical site during the past 12 months. Over 85% of respondents believed that work can cause low back pain, but only 38% have ever heard about RSI, CTS or WRULD.

*Conclusion:* A high proportion of nurses in our study reported musculo-skeletal symptoms, but the prevalence was lower than reported from developed countries. This may reflect differences in health beliefs and expectations.

*Keywords:* Musculoskeletal symptoms; nurses; Karachi, Pakistan.

**12.83**  
RESPIRATORY SYMPTOMS AND  
ILLNESSES AMONG BRICK KILN  
WORKERS: A CROSS SECTIONAL STUDY  
FROM RURAL DISTRICTS OF PAKISTAN

*Shaikh S, Nafees AA, Khetpal V, Jamali AA,*  
*Yousuf A*  
*Department of Community Health Sciences, Aga*  
*Khan University, Karachi*

*Background:* Occupational risk factors are one of the major causes of respiratory illnesses and symptoms, and account for 13% of chronic obstructive pulmonary disease and 11% of asthma worldwide. Majority of brick kilns in Pakistan use wood and coal for baking the bricks which makes the brick kiln workers susceptible to high exposure of air pollution. This study was designed to describe frequency of chronic respiratory symptoms and illnesses and study the association between these symptoms and different types of work.

*Methods:* This was a questionnaire based cross sectional survey conducted among the brick kiln workers in Larkana and Dadu districts, Sindh, Pakistan. A total of 340 adult men were assessed using translated version of the American Thoracic Society Division of Lung Disease (ATS-DLD) questionnaire. Logistic regression analysis was done to determine the relationship between various socio-demographic and occupational factors (age, education, type of work, number of years at work, smoking status), and the respiratory symptoms and illnesses (chronic cough, chronic phlegm, wheeze, Chronic Bronchitis and asthma).

*Results:* Results of the study show that 22.4 % workers had chronic cough while 21.2% reported chronic phlegm. 13.8% had two or more attacks of shortness of breath with wheezing. 17.1% workers were suffering from Chronic Bronchitis while 8.2% reported physician diagnosed asthma. Amongst the non-smoking workers 8.9% had Chronic Bronchitis. Multivariate analysis found that workers involved in brick baking were more likely to have Chronic Bronchitis (OR= 3.3, 95% CI 1.1-11.6, p=<0.05) and asthma (OR= 3.9, 95% CI

1.01-15.5,  $p < 0.05$ ) compared to those involved in carriage and placement work.

*Conclusion:* A high frequency of respiratory symptoms and illnesses was observed among brick kiln workers. Age, nature of work and smoking were strong predictors of developing these symptoms and illnesses.

*Keywords:* Respiratory symptoms and illnesses; brick kiln workers; rural districts of Pakistan.

## 12.84

### OCCUPATIONAL EXPOSURE TO NEEDLE STICKS INJURIES AND ITS ASSOCIATED FACTORS AMONG HEALTH CARE WORKERS IN PAKISTAN

*Afridi A, Kumar A, Khuwaja AK, Azam SI*  
*Department of Community Health Sciences, Aga Khan University, Karachi*

*Introduction:* Health care workers (HCWs) are at substantial risk of acquiring blood borne infections such as HIV, Hepatitis-B and Hepatitis-C through needle stick injuries (NSIs). This study aimed to assess the proportion of NSIs and their associated factors among HCWs and also to identify the areas in which preventive efforts might be directed to protect against this occupational hazard.

*Methods:* A cross-sectional study was conducted in two tertiary care hospitals of Pakistan representing both private and public health sector. A total of 497 HCWs (doctors and nurses) were interviewed using a structured questionnaire. Data was collected from January to May 2008.

*Results:* Overall, 64% of the HCWs were exposed to at least one NSI during their career; among them 73% reported NSIs for two or more times. Factors found to be highly associated with NSIs were those practicing this occupation for more than five years ( $p < 0.001$ : OR = 5.92; 95% CI = 3.45-10.16) and working as nurse than doctor ( $p < 0.001$ : OR = 2.12; 95% CI = 1.35-3.32). Having received booster dose of hepatitis B vaccine ( $p < 0.02$ : OR = 1.85; 95% CI = 1.10-3.11), working in surgical specialty ( $p < 0.01$ : OR = 1.6; 95% CI = 1.09-2.51) and being a female

( $p < 0.03$ : OR = 1.52; 95% CI = 1.04-2.22) were also found to be associated with NSIs. Most commonly reported reason for NSIs was injecting medicine and drawing blood (42%) followed by two-handed recapping of needle (37%). Only, 34% of study subjects were vaccinated against hepatitis B infection. Overall, HCWs had inadequate practices regarding standard precautions such as availability of gloves/protective cloths (40%) and infection control guidelines/protocols (10%) respectively in their working places.

*Conclusion:* In addition to very high rates of NSIs, low safety practices including inadequate vaccination coverage, unavailability of infection control guidelines and other preventive facilities were reported in this study. Prevention of occupational infections among HCWs should be a priority. Formal training, by health authorities in the local area, about safe practices and availability of preventive facilities should be ensured regarding NSIs among HCWs.

*Keywords:* Needle sticks injuries; health care workers; Pakistan.

## 12.85

### SERUM NITRIC OXIDE AMONG WOMEN USING BIOMASS FUEL FOR COOKING

*Kazi A, Hasan Z, Fatmi Z, Rahman A, Kayama F, Pethani A, Dojki M*  
*Department of Community Health Sciences, Aga Khan University, Karachi*

*Objectives:* To investigate the relationship between serum levels of nitric oxide among women using biomass or natural gas.

*Methods:* A total of 93 women between 15-45 years of age were taken; 43 women from Gadap town using biomass as primary fuel (biomass users), 40 women from Gadap town using natural gas as primary fuel at least for last 5 years (current gas users). PM<sub>2.5</sub> and CO was measured using an aerosol monitor Sidepak and Monoxor II, respectively. Blood samples were taken to determine serum levels of NO. Serum NO was measured through Griess reaction technique and cytokines through ELISA kit.



**Results:** Significant difference was found between CO and PM 2.5 levels among biomass [CO: 20.22 ( $\pm 12.2$ ), PM 2.5:4.46 ( $\pm 3.6$ )] and natural gas users [CO: 1.22 ( $\pm 1.22$ ), PM2.5:0.05 ( $\pm 0.02$ )] respectively. Serum NO levels ( $p < 0.001$ ) were significantly raised among the biomass users as compared to gas users.

**Conclusion:** Increased NO levels reflect enhanced inflammatory status due to biomass pollution among women. Further research studies are required to understand the association between biomass and serum NO levels.

**Keywords:** NO; women; cooking fuels.

### 12.86

#### SCREENING OF HEPATITIS B AND C AMONG PEOPLE VISITING GENERAL PRACTICE CLINICS IN A RURAL DISTRICT OF SINDH, PAKISTAN

*Kumar A, Lalani S, Afridi AA, Khuwaja AK  
Department of Community Health Sciences, Aga Khan University, Karachi*

**Background:** Hepatitis B (HB), Hepatitis C (HC) are amongst the major health problems in developing countries including Pakistan. This study aimed to identify proportion of screen positive individuals for HB and HC among people who visited general practitioners, clinics

This was a retrospective study conducted in Tando Muhammad Khan city, one of the rural districts of Sindh. We reviewed 5989 laboratory reports of people for hepatitis B and C on consecutive basis from two laboratories. A pre-designed and structured Performa was used to collect required information. Besides Univariate analysis, Chi-square statistic was calculated to assess the difference in HB and HC proportion by age groups and sex.

**Results:** One-fourth of reports were positive for at least one entity; whereas 8% and 17% of reviewed reports of adults ( $> 18$  years and above) were screened positive for HB and HC respectively. Positive screened tests were higher among older age group for HB (older age group = 56.6% vs. younger age group = 43.4%; OR = 1.07) as-well-as HC (older age group = 58.3%

vs. younger age group = 41.7%; OR = 1.08). Similarly, proportion of positive screened tests were higher among men for HB (men = 67.0% vs. women = 33.0%; OR = 1.2) and HC (men = 62.0% vs. women = 38.0%; OR = 1.3)

**Conclusion:** A large proportion of people were screened positive for HB and HC. Prevention and screening are suggested at larger scale for urgent planning and implementation of intervention strategies to control HB and HC.

**Keywords:** Hepatitis B and C; people visiting general practice clinics; Sindh, Pakistan.

### 12.87

#### BURDEN OF SKIN LESIONS OF ARSENICOSIS AT HIGHER EXPOSURE THROUGH GROUNDWATER OF TALUKA GAMBAT DISTRICT KHAIRPUR, PAKISTAN: A CROSS-SECTIONAL SURVEY

*Fatmi Z, Abbasi IN, Ahmed M, Kazi A, Kayama F*

*Department of Community Health Sciences, Aga Khan University, Karachi*

Prior surveys conducted have found higher proportion of arsenic-contaminated wells in villages along river Indus in Pakistan. This study aims to determine the prevalence of arsenicosis skin lesions among population exposed to higher exposure in taluka Gambat district Khairpur in Sindh. The cross-sectional survey was conducted from August 2008 to January 2009 among 610 households. A total of 707 water sources (hand pumps/wells) were tested from the villages of union councils of Agra and Jado Wahan for arsenic levels with Quick rapid arsenic field test kits. A total of 110 households exposed to arsenic levels [50 ppb were identified. Case screening for arsenic skin lesions was performed for 610 individuals residing in these 110 high-risk households. Information regarding household and socio-demographic characteristics, height and weight measurements and arsenic exposure assessment were collected. Physical examinations by trained physicians were carried out to diagnose the

arsenic skin lesions. After data cleaning, 534 individuals from all age groups were included in the final analysis which had complete exposure and outcome information. Overall prevalence of arsenicosis skin lesions was 13.5 % (72 cases). Of the 534 individuals, 490 (91.8 %) were exposed to arsenic levels of <math>C100</math> ppb in drinking water (8.2 % to <math>50-99</math> ppb, 58.6 % to <math>100-299</math> ppb, 14.6 % to <math>300-399</math> ppb and 18 % to <math>C400</math> ppb). Prevalence rate (per 100 population) of arsenicosis was highest at arsenic levels of <math>100-199</math> ppb (15.2 cases) followed by <math>C400</math> ppb (13.5 cases) and <math>300-399</math> (12.8 cases). Prevalence rate was higher among females (15.2) compared to males (11.3). Our study reports arsenicosis burden due to exposure to higher arsenic levels in drinking water in Pakistan. Exposure to very high levels of arsenic in drinking water calls for urgent action along river Indus. Prevalence of skin lesions increases with increasing arsenic levels in drinking groundwater. Provision of arsenic-free drinking water is essential to avoid current and future burden of arsenicosis in Pakistan.

*Keywords:* Arsenicosis skin lesions; groundwater; Khairpur, Pakistan.

### 12.88

#### SOLID FUEL USE IS A MAJOR RISK FACTOR FOR ACUTE CORONARY SYNDROMES AMONG RURAL WOMEN: A MATCHED CASE CONTROL STUDY

*Fatmi Z, Coggon D, Kazi A, Naeem I, Kadir MM, Sathikumar N.*

*Department of Community Health Sciences, Aga Khan University, Karachi*

Half of the world's population uses solid fuel for cooking exposing women to high levels of indoor air pollution. We assessed the risk of acute coronary syndrome (ACS) among rural women, according to their use of solid fuel. A matched case-control study was conducted at a public tertiary care hospital in a rural district of Pakistan. Seventy-three women with ACS were compared with controls, matched for sex and age ( $\pm 5$  years). Conditional logistic regression

was used to estimate odds ratios with 95% confidence intervals. After adjustment for potential confounding factors, current use of solid fuel was strongly associated with ACS (OR 4.8, 95% CI 1.5-14.8), and risk was lowest in women who had last used solid fuel more than 15 years earlier. The population attributable fraction for ACS in relation to current use of solid fuel was 49.0% (95% CI: 41.3%-57.4%). These findings suggest an important influence of cooking with solid fuel on risk of ACS.

#### *Implications:*

Ischemic heart diseases are leading of death and disability where developing countries shares 80% of the burden. Millions of women are exposed to high concentration of indoor air pollution (IAP) due to solid fuel use in rural population. IAP has high potential to cause ischemic heart diseases among women. This study helps in estimating the contribution of indoor air pollution for ACS due to solid fuel use among rural women. The study suggests conducting large scale studies to quantify the impact of solid fuel on ACS.

*Keywords:* Solid fuel use; acute coronary syndromes; rural women.

### 12.89

#### KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING RESPIRATORY SYMPTOMS AMONG TEXTILE WORKERS OF KARACHI, PAKISTAN: A CROSS-SECTIONAL SURVEY

*Khoso A, Nafees AA*

*Department of Community Health Sciences, Aga Khan University, Karachi*

*Background:* Poor knowledge and unsafe practices may pose several health hazards to textile workers. This study aimed to determine the prevalence and predictors of good knowledge, appropriate attitude and appropriate protective practices regarding respiratory symptoms among textile workers of Karachi, and to determine the association of knowledge, attitude and practices with respiratory symptoms.

**Methods:** This was a cross-sectional survey conducted in 2009, among 372 male textile workers, from 15 textile mills in Karachi and its outskirts. A structured and pre-tested questionnaire was used which included open ended questions to explore the knowledge, attitude and practices regarding respiratory symptoms. A modified version of the validated American Thoracic Society Division of Lung Disease questionnaire (ATS-DLD-78A) was used to assess the respiratory symptoms among the textile workers.

**Results:** This study found prevalence of good knowledge to be 48.9% (95% CI: 43.7-54.1) and appropriate attitude 81% (95% CI: 76.7-84.9), while only 21% (95% CI: 17.5-26.1) were practicing these measures appropriately. Being educated and older than 38 years, belonging to Sindhi ethnicity; working in cluster 1 and in weaving section were significant predictors of knowledge, attitude and practices. Generally, we found no significant association of knowledge, attitude and practices with respiratory symptoms.

**Conclusions:** The workers in this study had low prevalence of appropriate protective practices despite having high prevalence of good knowledge and attitude. The translation of safe practices into improved health may not only depend on the knowledge and attitude of workers, suggesting the interplay of several other social and environmental factors which need to be explored.

**Keywords:** Textile workers; Knowledge, Attitude and Practices; Respiratory symptoms; Pakistan

## 12.90

### DEVELOPMENT AND VALIDATION OF SUNLIGHT EXPOSURE MEASUREMENT QUESTIONNAIRE (SEM-Q) FOR USE IN ADULT POPULATION RESIDING IN PAKISTAN

*Humayun Q, Azam I, Siddiqui R, Khan AH, Ansari NB, Iqbal R*  
*Department of Community Health Sciences, Aga Khan University, Karachi*

**Introduction:** Vitamin D deficiency has been identified as a major public health problem worldwide. Sunlight is the main source of vitamin D and its measurement using dosimeters is expensive and difficult for use in population-based studies.

**Objective:** The aim of this study was to develop and validate questionnaires to assess sunlight exposure in healthy individuals residing in Karachi, Pakistan.

**Materials and Methods:** Two questionnaires with seven important items for sunlight exposure assessment were developed. Reference period for short term SEM-Q was 1 day and for long term SEM-Q, one year. Fifty four healthy adults were enrolled based on their reported sunlight exposure (high = 17, moderate = 18, low = 19) from AKU, Karachi. Over four days, study participants wore a dosimeter between sunrise and sunset and reported time spent and activities undertaken in the sun for questionnaire validation. Algorithm for item weightage was created as an average score based on ultraviolet B percentage received. Blood samples were obtained for serum vitamin D.

**Results:** The mean time (minutes) spent in sun over 4 days ( $\pm$ SD) was 69.5 ( $\pm$ 32) for low, 83.5 ( $\pm$ 29.7) for moderate and 329 ( $\pm$ 115) for high exposure group. The correlation between average time (minutes) spent in sun over 4 days and mean change in absorbance of UV dosimeters for 4 days was 0.60 ( $p < 0.01$ ). Correlation between average score and vitamin D levels was found to be 0.36 ( $p = 0.01$ ) for short term questionnaire score, 0.43 ( $p = 0.01$ ) for long term questionnaire score in summers and 0.48 ( $p = 0.01$ ) in winters.

**Conclusion:** The sunlight exposure measurement questionnaires were valid tools for use in large epidemiological studies to quantify sunlight exposure.

**Keywords:** SEM-Q; adult population; Pakistan.

### 12.91 VALIDATION OF A FOOD FREQUENCY QUESTIONNAIRE FOR ASSESSING MACRONUTRIENT AND CALCIUM INTAKE IN ADULT POPULATION RESIDING IN KARACHI

*Iqbal R, Dar FJ, Bilgrami M, Bano G, Khan AH  
Department of Community Health Sciences, Aga  
Khan University, Karachi*

**Objective:** We conducted a study to develop and validate a food frequency questionnaire (FFQ) for use in adult residents of Karachi.

**Method:** Adult females, residing in Karachi were recruited in this study. The FFQ was administered once while 4, 24 hour recalls spread over a period of one year were administered as the reference method. Daily intakes for energy, protein, fat, and calcium intake were estimated for both the tools. Crude and energy adjusted correlations for nutrient intakes were computed for the FFQ and mean of 4, 24 hour recalls and serum NTX.

**Results:** The correlation coefficients for the FFQ with mean of 4, 24hr recall ranged from 0.21 for protein to 0.36 for calcium, while the correlation for nutrient estimates from the FFQ with NTX ranged from -0.07 for calcium to 0.01 for energy.

**Conclusion:** We found highly significant correlations for nutrient intakes estimated from the FFQ vs. those estimated from the mean of 4, 24 hour recalls but no correlations between nutrient estimates from the FFQ and serum NTX levels. We conclude that our FFQ is a valid tool for assessing dietary intake of adult females in Pakistan.

**Keywords:** FFQ; macronutrient and calcium intake; adult population; Karachi, Pakistan.

### 12.92 BEST METHOD FOR ESTABLISHING CONTACT WITH POTENTIAL STUDY PARTICIPANTS IDENTIFIED FROM MEDICAL RECORDS AT AKUH

*Bano G, Janjua N, Jabbar A, Qureshi R, Babar N,  
Haroon A, Iqbal R  
Department of Community Health Sciences, Aga  
Khan University, Karachi*

**Objectives:** Recruiting participants into a study can be a challenging task. Potential participants for this study were identified from medical records at a tertiary care hospital in Karachi, Pakistan and contacted via mail out and phone calls to request participation in a study. This paper focuses on the various recruitment strategies used and their response results.

**Methods:** We used a multimode contact approach for including participants in the study. This comprised an invitational letter that described the study sent along with a mail back postage-paid envelope and multiple phone calls for recruitment of participants. We estimated number of participants contacted and consented to describe the study participation.

**Results:** Overall there were 1335 participants eligible for recruitment in the study. Of these 1247 participants were sent mail outs to which only 84 participants responded, while 1133 participants, whose phone numbers were available, were called. Overall the number of people that we were able to contact was low. The response to postage paid mail was very poor whereas the majority of participants were contactable via phone calls. Out of the participants that we contacted on phone calls, the 257 subjects agreed to participate at the very first call and our results suggest that more than three calls made very little contribution to consent rate of the study.

**Conclusion:** Recruiting participants from contact information available in medical records may not be the best method. Multiple and innovative approaches are required for approaching potential participants and requesting them to participate in a study.

**Keywords:** Methods to establish contact; potential participants for a study; Karachi, Pakistan

### 12.93

#### ASSOCIATION OF DENTAL CARIES WITH PASSIVE SMOKING IN 5-14 YEARS OLD CHILDREN OF RADHO JHOKIO AND AGA KHANI COMMUNITIES OF KARACHI, PAKISTAN

Zulfiqar A, Iqbal R, Azam SI, Khan AH, Azmina H

Department of Community Health Sciences, Aga Khan University, Karachi

**Background:** Dental caries is a multi-factorial disease caused by a combination of physical, biological, environmental, behavioral and life style related risk factors. Recent studies have shown the association of passive smoking and dental caries. In Pakistan the burden of smoking is high and Children are readily exposed to smoke and burden increases when adults prefer indoor smoking. This study aims to establish the relationship between dental caries and passive smoking in children of age 5-14 years living in Karachi, Pakistan.

**Objective:** To understand the relationship between passive smoking and dental health of child population in Karachi, Pakistan

**Methods:** This study will be done in the Urban and Rural site of Aga Khani communities and Radho Jhokio respectively. Through questionnaire I will assess the main exposure of in house passive smoking and other variables like socioeconomic condition, literacy of parents, tooth brushing habit. FFQ will be used to assess the dietary habits. Weight and height will be measure to calculate BMI. Dental examination of each child will be done with the help of mouth mirror and explorer to detect dental caries.

**Results:** This study will report crude and adjusted prevalence ratio of association between dental caries and passive smoking.

**Conclusion:** To conclude whether passive smoking is associated with dental caries in our part of the world where prevalence of smoking and dental caries is very high.

**Keywords:** Dental caries; passive smoking; children; Karachi, Pakistan.

### 12.94

#### ASSOCIATION OF SOCIOECONOMIC POSITION WITH UNDER - AND OVERNUTRITION IN PAKISTAN

Janjua NZ, Iqbal R, Mahmood B

Department of Community Health Sciences, Aga Khan University, Karachi

**Objective:** We assessed the relationship between socioeconomic position (SEP) and under- and over nutrition in Pakistani adults.

**Methods:** In 2006, we conducted a cross-sectional study including adult participants  $\geq 20$  years of age ( $n = 3500$ ) residing in district Khairpur in Sindh province of Pakistan. We categorized body mass index (BMI) into  $< 18.5$  (underweight), 18.6-22.5 (normal BMI), 23-24.9 (pre-overweight), 25-29.9 (overweight), and  $\geq 30$  (obese). We assessed the association of SEP based on wealth index measured as quintiles of a linear index derived from household assets and utilities score with categories of BMI through multinomial regression with the use of normal BMI as reference category while accounting for sampling design.

**Results:** After adjusting for age, sex, education level, and occupation, there was no significant association of SEP and underweight, whereas SEP was positively associated with the categories of pre-overweight, overweight, and obesity. In comparison with the 1st quintile, those in upper wealth quintiles had significantly greater odds of being pre-overweight (4th quintile: adjusted odds ratio [adjOR], 1.47; 95% confidence interval [95% CI], 1.04-2.08; 5th quintile: adjOR, 1.57; 95% CI, 1.12-2.21), overweight (4th quintile: adjOR, 1.97; 95% CI, 1.43-2.72; 5th quintile: adjOR, 2.66; 95% CI, 1.91-3.69) and obese (4th quintile: adjOR, 2.24; 95% CI, 1.37-3.69; 5th quintile: adjOR, 3.65; 95% CI, 2.14-6.22).

**Conclusion:** Shift from under- to over-nutrition across SEP groups is occurring in Pakistan. There is a need for re-evaluating national policies and programs to tackle the growing burden of emerging over-nutrition along with rampant under-nutrition.

**Keywords:** Socioeconomic position; under and over nutrition; Pakistan.

### 12.95 RELATIONSHIP OF FIBROBLAST GROWTH FACTOR 23 LEVELS WITH DIETARY PHOSPHATE INTAKE AND FRACTIONAL EXCRETION OF PHOSPHATE (FePO<sub>4</sub>) IN HEALTHY VOLUNTEERS

*Sherazi N, Iqbal R, Khan AH*  
*Department of Community Health Sciences, Aga  
Khan University, Karachi*

*Objective:* The aim of this study is to assess the relationship between FGF-23 levels, dietary phosphate intake and fractional excretion of phosphate (FePO<sub>4</sub>) in healthy individuals.

*Methods:* FGF-23 is measured by a sandwich ELISA that was developed by Immunotopics Inc. (San Clemente, CA). This assay uses two affinity-purified goat polyclonal antibodies to detect epitopes in the carboxyl-terminal (amino acid 180-251) portion of FGF-23. Hence, FGF-23 levels, as evaluated by this assay, represent the sum of intact FGF-23 and FGF-23 C-terminal fragments. Information regarding dietary phosphate was collected by food frequency questionnaire (FFQ) using recall method of food consumed over the period of past one year. Fractional excretion of phosphate (FePO<sub>4</sub>) was also assessed using plasma and urinary specimens of phosphate and creatinine.

*Results:* Eighty healthy adults of mean age of 29 ( $\pm$  5) years with 39 males were included in the study. Mean BMI of the study participants was 23 ( $\pm$ 4) kg/m<sup>2</sup>. Normal serum PO<sub>4</sub> was seen in 73 (91.3%) individuals. Median FGF-23 was 49.9 RU/ml (IQR= 33, 76). Mean total phosphate intake was 1220 mg ( $\pm$  426.4). Mean FePO<sub>4</sub> was 8.9 ( $\pm$ 4.7). Two groups of dietary phosphate were formed according to RDA i.e. 700 mg. Individuals with <700 dietary phosphate had median FGF-23 of 66.5 RU/ml (IQR =36.3-159.8) and > 700 mg had median FGF-23 of 48 RU/ml (IQR= 30.2-72.2). Positive correlation was found between FGF-23 and dietary phosphate ( $r=$  0.22,  $p <$  0.05) and negative correlation was found between FGF-23 and FePO<sub>4</sub> ( $r =$ -0.260,  $p <$  0.05), both were statistically significant.

*Conclusions:* We conclude that in healthy individuals, changes in dietary phosphate within the physiological range of intakes regulate serum FGF-23 concentrations and suggest that dietary phosphorus have major impact on circulating FGF-23 levels. High fractional excretion of phosphate is seen in our individuals who may be due to high dietary phosphate intake.

*Keywords:* FGF-23; dietary phosphate; FePO<sub>4</sub>; healthy individuals.

### 12.96 USE OF SECONDARY PREVENTION DRUGS FOR CARDIOVASCULAR DISEASE IN THE COMMUNITY IN HIGH-INCOME, MIDDLE- INCOME, AND LOW-INCOME COUNTRIES (THE PURE STUDY): A PROSPECTIVE EPIDEMIOLOGICAL SURVEY.

*Yusuf S, Islam S, Chow CK, Rangarajan  
S, Dagenais G, Diaz R, Gupta R, Kelishadi  
R, Iqbal R, Avezum A, Kruger A, Kutty R, Lanan  
F, Lisheng L, Wei L, Lopez-Jaramillo P, Oguz  
A, Rahman O, Swidan H, Yusoff K, Zatonski  
W, Rosengren A, Teo KK*  
*Department of Community Health Sciences, Aga  
Khan University, Karachi*

*Background:* Although most cardiovascular disease occurs in low-income and middle-income countries, little is known about the use of effective secondary prevention medications in these communities. We aimed to assess use of proven effective secondary preventive drugs (antiplatelet drugs,  $\beta$  blockers, angiotensin-converting-enzyme [ACE] inhibitors or angiotensin-receptor blockers [ARBs], and statins) in individuals with a history of coronary heart disease or stroke.

*Methods:* In the Prospective Urban Rural Epidemiological (PURE) study, we recruited individuals aged 35-70 years from rural and urban communities in countries at various stages of economic development. We assessed rates of previous cardiovascular disease (coronary heart disease or stroke) and use of proven effective secondary preventive drugs and blood-pressure-lowering drugs with standardised

questionnaires, which were completed by telephone interviews, household visits, or on patient's presentation to clinics. We report estimates of drug use at national, community, and individual levels.

**Findings:** We enrolled 153,996 adults from 628 urban and rural communities in countries with incomes classified as high (three countries), upper-middle (seven), lower-middle (three), or low (four) between January, 2003, and December, 2009. 5650 participants had a self-reported coronary heart disease event (median 5.0 years previously [IQR 2.0-10.0]) and 2292 had stroke (4.0 years previously [2.0-8.0]). Overall, few individuals with cardiovascular disease took antiplatelet drugs (25.3%),  $\beta$  blockers (17.4%), ACE inhibitors or ARBs (19.5%), or statins (14.6%). Use was highest in high-income countries (antiplatelet drugs 62.0%,  $\beta$  blockers 40.0%, ACE inhibitors or ARBs 49.8%, and statins 66.5%), lowest in low-income countries (8.8%, 9.7%, 5.2%, and 3.3%, respectively), and decreased in line with reduction of country economic status ( $p(\text{trend}) < 0.0001$  for every drug type). Fewest patients received no drugs in high-income countries (11.2%), compared with 45.1% in upper middle-income countries, 69.3% in lower middle-income countries, and 80.2% in low-income countries. Drug use was higher in urban than rural areas (antiplatelet drugs 28.7% urban vs. 21.3% rural,  $\beta$  blockers 23.5% vs 15.6%, ACE inhibitors or ARBs 22.8% vs 15.5%, and statins 19.9% vs 11.6%; all  $p < 0.0001$ ), with greatest variation in poorest countries ( $p(\text{interaction}) < 0.0001$  for urban vs rural differences by country economic status). Country-level factors (eg, economic status) affected rates of drug use more than did individual-level factors (eg, age, sex, education, smoking status, body-mass index, and hypertension and diabetes statuses).

**Interpretation:** Because use of secondary prevention medications is low worldwide—especially in low-income countries and rural areas—systematic approaches are needed to improve the long-term use of basic, inexpensive, and effective drugs.

**Keywords:** Cardiovascular disease; secondary preventive drugs; high, middle and low income countries.

## 12.97

### DIETARY PATTERNS AND THE RISK OF ACUTE MYOCARDIAL INFARCTION IN 52 COUNTRIES: RESULTS OF THE INTERHEART STUDY.

*Iqbal R, Anand S, Ounpuu S, Islam S, Zhang X, Rangarajan S, Chifamba J, Al-Hinai A, Keltai M, Yusuf S; INTERHEART Study Investigators. Department of Community Health Sciences, Aga Khan University, Karachi*

**Background:** Diet is a major modifiable risk factor for cardiovascular disease, but it varies markedly in different regions of the world. The objectives of the present study were to assess the association between dietary patterns and acute myocardial infarction (AMI) globally.

**Methods and Results:** Interheart is a standardized case-control study involving participants from 52 countries. The present analysis included 5761 cases and 10 646 control subjects. We identified 3 major dietary patterns using factor analysis: Oriental (high intake of tofu and soy and other sauces), Western (high in fried foods, salty snacks, eggs, and meat), and prudent (high in fruit and vegetables). We observed an inverse association between the prudent pattern and AMI, with higher levels being protective. Compared with the first quartile, the adjusted ORs were 0.78 (95% CI 0.69 to 0.88) for the second quartile, 0.66 (95% CI 0.59 to 0.75) for the third, and 0.70 (95% CI 0.61 to 0.80) for the fourth ( $P$  for trend  $< 0.001$ ). The Western pattern showed a U-shaped association with AMI (compared with the first quartile, the adjusted OR for the second quartile was 0.87 [95% CI 0.78 to 0.98], whereas it was 1.12 [95% CI 1.00 to 1.25] for the third quartile and 1.35 [95% CI 1.21 to 1.51] for the fourth quartile;  $P$  for trend  $< 0.001$ ), but the Oriental pattern demonstrated no relationship with AMI. Compared with the first quartile, the OR of a dietary risk score derived from meat, salty snacks, fried foods, fruits, green leafy vegetables, cooked vegetables, and other raw vegetables (higher score indicating a poorer diet) increased with each quartile: second quartile 1.29 (95% CI 1.17 to 1.42), third quartile 1.67 (95% CI 1.51 to 1.83), and fourth

quartile 1.92 (95% CI 1.74 to 2.11; P for trend <0.001). The adjusted population-attributable risk of AMI for the top 3 quartiles compared with the bottom quartile of the dietary risk score was 30%.

*Conclusions:* An unhealthy dietary intake, assessed by a simple dietary risk score, increases the risk of AMI globally and accounts for approximately 30% of the population-attributable risk.

*Keywords:* Acute myocardial infarction, dietary patterns, globally.

## 12.98

### ILLUMINATING THE DARK SIDE - VITAMIN D STATUS IN TEN DIFFERENT LOCALITIES OF KARACHI, PAKISTAN.

*Jafri L, Iqbal R, Haroon A, Khan AH*  
*Department of Community Health Sciences, Aga Khan University, Karachi*

*Background:* Numerous south Asians residing in their native countries are vitamin D deficient (VDD). Low intake of vitamin D fortified foods and less exposure to sunlight due to poor housing structures or geographical factors like air pollutants obstructing the UVB rays contribute to VDD.

*Objective:* To examine the association between place of residence (grouped into ten neighbourhoods), and 25-hydroxy vitamin D

(25OHD) levels of individuals residing in Karachi, Pakistan

*Methods:* The information of individuals who had 25OHD levels assessed at the AKU Clinical Laboratory, Karachi from January 2007 to June 2008 was reviewed. Residential addresses were categorized into 10 neighbourhoods with distinct housing structure and locality attributes. Addresses of 4788 individuals were reviewed to evaluate the effects of neighborhood on vitamin D levels.

*Results:* A high overall prevalence (74%) of VDD was observed. We observed a significant difference (*p* value <0.01) between mean log

25[OH] D levels amongst neighborhoods grouped according to distinct housing structure attributes and localities. Lowest levels were observed in residents of suburbs of Karachi. Residents of posh localities and a middle class neighbourhood in the suburbs showed highest 25OHD levels.

*Conclusions:* A high frequency of VDD in all the studied localities of an urban city warrant dietary vitamin D supplementation and food fortification.

*Keywords:* Vitamin D; 10 localities; Karachi, Pakistan.

## 12.99

### PHYSICAL ACTIVITY LEVELS, OWNERSHIP OF GOODS PROMOTING SEDENTARY BEHAVIOUR AND RISK OF MYOCARDIAL INFARCTION: RESULTS OF THE INTERHEART STUDY.

*Held C, Iqbal R, Lear SA, Rosengren A, Islam S, Mathew J, Yusuf S.*

*Department of Community Health Sciences, Aga Khan University, Karachi*

*Aims:* To evaluate the association between occupational and leisure-time physical activity (PA), ownership of goods promoting sedentary behaviour, and the risk of myocardial infarction (MI) in different socio-economic populations of the world. Studies in developed countries have found low PA as a risk factor for cardiovascular disease; however, the protective effect of occupational PA is less certain. Moreover, ownership of goods promoting sedentary behaviour may be associated with an increased risk.

*Methods:* In INTERHEART, a case-control study of 10 043 cases of first MI and 14 217 controls who did not report previous angina or physical disability completed a questionnaire on work and leisure-time PA.

*Results:* Subjects whose occupation involved either light [multivariable-adjusted odds ratio (OR) 0.78, confidence interval (CI) 0.71-0.86] or moderate (OR 0.89, CI 0.80-0.99) PA were at a lower risk of MI, whereas those who did



heavy physical labour were not (OR 1.02, CI 0.88-1.19), compared with sedentary subjects. Mild exercise (OR 0.87, CI 0.81-0.93) as well as moderate or strenuous exercise (OR 0.76, CI 0.69-0.82) was protective. The effect of PA was observed across countries with low, middle, and high income. Subjects who owned both a car and a television (TV) (multivariable-adjusted OR 1.27, CI 1.05-1.54) were at higher risk of MI compared with those who owned neither.

*Conclusion:* Leisure-time PA and mild-to-moderate occupational PA, but not heavy physical labour, were associated with a reduced risk, while ownership of a car and TV was associated with an increased risk of MI across all economic regions.

*Keywords:* Physical activity; sedentary behaviour; myocardial infarction.

## 12.100

### A MULTICENTER MATCHED CASE CONTROL STUDY OF BREAST CANCER RISK FACTORS AMONG WOMEN IN KARACHI, PAKISTAN

*Shamsi U, Khan S, Soomro S, Azam SI.  
Department of Community Health Sciences, Aga Khan University, Karachi*

*Background:* Breast cancer (BC), the most common female cancer in Pakistan, is associated with very high mortality. However, role of many risk factors for BC among Pakistani women is still controversial. To assess the potential risk factors for BC, a matched case-control study was conducted in two tertiary care hospitals of Karachi, Pakistan.

*Patients and Methods:* The study population included 297 pathologically confirmed incident cases of BC patients diagnosed between January 2009 and December 2010. 586 controls without history of BC were matched on the hospital, and +5 years of age.

*Results:* Family history of BC (MOR=1.72; 95% CI: 1.10, 2.80 for first degree vs. none), single marital status (MOR=1.55; 95% CI: 1.10, 2.39 for single women vs. married women), older age at menopause (MOR=3.92; 95% CI: 2.52, 6.18

for menopausal women aged below 45 years, MOR=6.42; 95% CI: 3.47, 11.98 for menopausal women above 45 years of age compared with premenopausal women) conferred an increased risk of BC for women. Increasing parity decreased the risk of BC (MOR =0.90; 95% CI: 0.85, 0.97 for each live birth). Intake of Vitamin D supplements (MOR=0.30; 95% CI: 0.12, 0.81 for < 3years) or (MOR = 0.27; 95 % CI: 0.13, 0.56 for > 3 years) was protective compared to non-users of Vitamin D.

*Conclusion:* This study confirms only few of the recognized risk factors in Pakistani women. The protective effect of Vitamin D is important from public health perspective and needs to be further explored through a randomized controlled trial.

*Keywords:* Breast cancer; women; Karachi, Pakistan.

## 12.101

### PERINATAL OUTCOMES OF MULTIPLE-GESTATION PREGNANCIES IN KENYA, ZAMBIA, PAKISTAN, INDIA, GUATEMALA, AND ARGENTINA: A GLOBAL NETWORK STUDY.

*Irene Marete, Constance Tenge, Omrana Pasha, Shivaprasad Goudar, Elwyn Chomba, Archana Patel, Ana Garces, Elizabeth M. McClure, Sarah Saleem, Fabian Esamai, Bhala Kodkany, JM Belizan, Richard J. Derman, Patricia L. Hibberd, Nancy Krebs, Pierre Buekens, Robert L. Goldenberg, Waldemar A. Carlo, Dennis Wallace, Janet Moore, Koso-Thomas M, Wright LL, Liechty EA*

*Department of Community Health Sciences, Aga Khan University, Karachi and on behalf of the EMONC Trial Investigators*

*Aim* To determine the rates of multiple gestation, stillbirth, and perinatal and neonatal mortality and to determine health care system characteristics related to perinatal mortality of these pregnancies in low- and middle-income countries. *Methods* Pregnant women residing within defined geographic boundaries located in six countries were enrolled and followed to 42

days postpartum. Results Multiple gestations were 0.9% of births. Multiple gestations were more likely to deliver in a health care facility compared with singletons (70 and 66%, respectively,  $p < 0.001$ ), to be attended by skilled health personnel (71 and 67%,  $p < 0.001$ ), and to be delivered by cesarean (18 versus 9%,  $p < 0.001$ ). Multiple-gestation fetuses had a relative risk (RR) for stillbirth of 2.65 (95% confidence interval [CI] 2.06, 3.41) and for perinatal mortality rate (PMR) a RR of 3.98 (95% CI 3.40, 4.65) relative to singletons (both  $p < 0.0001$ ). Neither delivery in a health facility nor the cesarean delivery rate was associated with decreased PMR. Among multiple-gestation deliveries, physician-attended delivery relative to delivery by other health providers was associated with a decreased risk of perinatal mortality. Conclusions Multiple gestations contribute disproportionately to PMR in low-resource countries. Neither delivery in a health facility nor the cesarean delivery rate is associated with improved PMR.

*Keyword:* Multiple gestation; stillbirth; perinatal and neonatal mortality

## 12.102

### A COMBINED COMMUNITY- AND FACILITY-BASED APPROACH TO IMPROVE PREGNANCY OUTCOMES IN LOW-RESOURCE SETTINGS: A GLOBAL NETWORK CLUSTER RANDOMIZED TRIAL

*Omrana Pasha, Elizabeth M. McClure, Linda L. Wright, Sarah Saleem, Shivaprasad S. Goudar, Elwyn Chomba, Archana Patel, Fabian Esamai, Ana Garces, Fernando Althabe, Bhala Kodkany, Hillary Mabeya, Albert Manasyan, Waldemar A. Carlo, Richard J. Derman, Patricia L. Hibberd, Edward K. Liechty, Nancy Krebs, K. Michael Hambidge, Pierre Buekens, Janet Moore, Alan J. Jobe, Marion Koso-Thomas, Dennis D. Wallace, Suzanne Stalls, Robert L. Goldenberg*  
Department of Community Health Sciences, Aga Khan University, Karachi and on behalf of the EMONC Trial Investigators

*Background:* Fetal and neonatal mortality rates in low-income countries are at least 10-fold greater than in high-income countries. These differences have been related to poor access to and poor quality of obstetric and neonatal care.

*Methods:* This trial tested the hypothesis that teams of health care providers, administrators and local residents can address the problem of limited access to quality obstetric and neonatal care and lead to a reduction in perinatal mortality in intervention compared to control locations. In seven geographic areas in five low-income and one middle-income country, most with high perinatal mortality rates and substantial numbers of home deliveries, we performed a cluster randomized non-masked trial of a package of interventions that included community mobilization focusing on birth planning and hospital transport, community birth attendant training in problem recognition, and facility staff training in the management of obstetric and neonatal emergencies.

*Results:* Despite extensive effort in all sites in each of the three intervention areas, no differences emerged in the primary or any secondary outcome between the intervention and control clusters.

*Conclusions:* This cluster randomized comprehensive, large-scale, multi-sector intervention did not result in detectable impact on the proposed outcomes. While this does not negate the importance of these interventions, we expect that achieving improvement in pregnancy outcomes in these settings will require substantially more obstetric and neonatal care infrastructure than was available at the sites during this trial, and without them provider training and community mobilization will not be sufficient.

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*Keyword:* Fetal and neonatal mortality; obstetric and neonatal care; perinatal mortality;

### 12.103

#### A REVIEW OF STUDIES WITH CHLORHEXIDINE APPLIED DIRECTLY TO THE UMBILICAL CORD.

Goldenberg RL, McClure EM, Saleem S.

*Department of Community Health Sciences, Aga Khan University, Karachi*

Infection-related neonatal mortality due to omphalitis in developing country home births is an important public health problem. Three cluster randomized trials of 4% chlorhexidine applied to the umbilical cord stump from once to multiple times in the days following a home birth have evaluated this intervention compared with other types of cord care on the development of omphalitis and neonatal mortality. Each of the three studies showed significant reductions in either omphalitis, neonatal mortality, or both with the 4% chlorhexidine. However, the optimal dosing schedule remains uncertain. Although further studies are needed to clarify this issue, from the three studies it is now clear that with a minimum of one application of 4% chlorhexidine to the umbilical cord stump following delivery, the incidence of omphalitis and neonatal mortality can be reduced, especially in preterm newborns. This intervention, which is safe and inexpensive and requires minimal training and skill, should strongly be considered for adoption wherever home births occur.

*Keywords:* Chlorhexidine; omphalitis; umbilical cord.

### 12.104

#### INSIGHT INTO IMPLEMENTATION OF FACILITY-BASED INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESS STRATEGY IN A RURAL DISTRICT OF SINDH, PAKISTAN.

Pradhan NA, Rizvi N, Sami N, Gul X.

*Source*

*Department of Community Health Sciences, Aga Khan University, Karachi, Pakistan.*

*Objective:* Integrated management of childhood illnesses (IMCI) strategy has been proven to

improve health outcomes in children under 5 years of age. The study determines the factors influencing IMCI implementation at public-sector primary health care (PHC) facilities in Matiari district, Sindh, Pakistan.

*Design:* An exploratory qualitative study with an embedded quantitative strand was conducted. The qualitative part included 16 in-depth interviews (IDIs) with stakeholders which included planners and policy makers at a provincial level (n=5), implementers and managers at a district level (n=3), and IMCI-trained physicians posted at PHC facilities (n=8). Quantitative part included PHC facility survey (n=16) utilizing WHO health facility assessment tool to assess availability of IMCI essential drugs, supplies, and equipments.

*Results:* The major factors reported to enhance IMCI implementation were knowledge and perception about the strategy and need for separate clinic for children aged under 5 years as potential support factors.

*Conclusion:* Our findings indicate that the matiari district has sound implementation potential; however, bottlenecks at health care facility and at health care management level have badly constrained the implementation process. An interdependency exists among the constraining factors, such as lack of sound planning resulting in unclear understanding of the strategy; leading to ambiguous roles and responsibilities among stakeholders which manifest as inadequate availability of supplies and drugs at PHC facilities. Addressing these barriers is likely to have a cumulative effect on facilitating IMCI implementation. On the basis of these findings, we recommend that the provincial Ministry of Health (MoH) and provincial Maternal Neonatal and Child Health (MNCH) program jointly assess the situation and streamline IMCI implementation in the district through sound planning, training, supervision, and logistic support.

*Keywords:* IMCI, IMCI Pakistan, IMCI implementation barriers and supports, child health, primary health care in children under five, under-five morbidity

### 12.105

#### A MULTI-COUNTRY STUDY OF THE "INTRAPARTUM STILLBIRTH AND EARLY NEONATAL DEATH INDICATOR" IN HOSPITALS IN LOW-RESOURCE SETTINGS.

Goldenberg RL, McClure EM, Kodkany B, Wembodinga G, Pasha O, Esamai F, Tshetu A, Patel A, Mabaye H, Goudar S, Saleem S, Waikar M, Langer A, Bose CL, Rubens CE, Wright LL, Moore J, Blanc A.  
Department of Obstetrics and Gynecology, Columbia University, NY 10032, USA and Department of Community Health Sciences, Aga Khan University, Karachi

*Objective:* To determine the feasibility of introducing a simple indicator of quality of obstetric and neonatal care and to determine the proportion of potentially avoidable perinatal deaths in hospitals in low-income countries.

*Methods:* Between September 1, 2011, and February 29, 2012, data were collected from consecutive women who were admitted to the labor ward of 1 of 6 hospitals in 4 low-income countries. Fetal heart tones on admission were monitored, and demographic and birth data were recorded.

*Results:* Data were obtained for 3555 women and 3593 neonates (including twins). The doptone was used on 97% of women admitted. The overall perinatal mortality rate was 34 deaths per 1000 deliveries. Of the perinatal deaths, 40%-45% occurred in the hospital and were potentially preventable by better hospital care.

*Conclusion:* The results demonstrated that it is possible to accurately determine fetal viability on admission via a doptone. Implementation of doptone use, coupled with a concise data record, might form the basis of a low-cost and sustainable program to monitor and evaluate efforts to improve quality of care and ultimately might help to reduce the in-hospital component of perinatal mortality in low-income countries.

*Keywords:* Doptone, Fetal heart tones, Hospital-based perinatal mortality, Neonatal mortality,

### 12.107

#### KNOWLEDGE, ATTITUDES AND PRACTICES OF CONTRACEPTION AMONG AFGHAN REFUGEE WOMEN IN PAKISTAN: A CROSS-SECTIONAL STUDY.

Raheel H, Karim MS, Saleem S, Bharwani S.  
Department of Obstetrics and Gynecology, Faculty of Medicine and Health Sciences, UAE and Department of Community Health Sciences, Aga Khan University, Karachi

*Background:* During the 1980s, approximately three million people migrated from Afghanistan to Pakistan and sought refuge in several cities including the city of Karachi. After the initial settlement of the refugees, the international organizations transitioned the health care of these refugees to the two local non-profit service agencies in Karachi. One of these agencies subsidized health care to the refugees under their care and the other agency encouraged the refugees under their care to utilize governmental and non-governmental private health resources at the disposal of general public. Our objective was to measure the effect of health subsidy on the uptake of contraception among Afghan refugee women and compare them to the group of Afghan women without such a subsidy.

*Methodology/principal findings:* A randomly selected group of 650 married Afghan women--325 women in each group--participated in a detailed survey regarding the knowledge, attitude and practices of family planning and contraceptive use. 90 percent of the women in the health subsidy group had had heard of family planning, compared to the 45 percent in the non-subsidized group. The use of contraceptives was greater than two-fold in the former versus the latter.

*Results:* of logistic regression analysis revealed that the refugee women who had had access to subsidized healthcare were significantly more likely to use the contraceptive methods with advancing age as compared to the women in the non-health subsidy group. The difference remained significant after adjusting for other variables.

**Conclusions/significance:** Refugee women who are provided subsidized healthcare are more inclined to use contraceptives. It is therefore important that Afghan refugee women living elsewhere in Pakistan be provided healthcare subsidy, whereby their reproductive health indicators could improve with reduced fertility. We strongly encourage facilities introducing such subsidies to refugees in resource poor settings to assess the impact through similar inquiry.

**Keywords:** Adolescent; Adult; Afghanistan; Age Factors; Contraception/methods; Contraception Behavior;

### 12.108

#### RANDOMIZED TRIAL OF EARLY DEVELOPMENTAL INTERVENTION ON OUTCOMES IN CHILDREN AFTER BIRTH ASPHYXIA IN DEVELOPING COUNTRIES.

*Carlo WA, Goudar SS, Pasha O, Chomba E, Wallander JL, Biasini FJ, McClure EM, Thorsten V, Chakraborty H, Wallace D, Shearer DL, Wright LL*  
*Department of Community Health Sciences, Aga Khan University, Karachi*

**Objective:** To determine if early developmental intervention (EDI) improves developmental abilities in resuscitated children

**Study design:** This was a parallel group, randomized controlled trial of infants unresponsive to stimulation who received bag and mask ventilation as part of their resuscitation at birth and infants who did not require any resuscitation born in rural communities in India, Pakistan, and Zambia. Intervention infants received a parent-implemented EDI delivered with home visits by parent trainers every other week for 3 years starting the first month after birth. Parents in both intervention and control groups received health and safety counseling during home visits on the same schedule. The main outcome measure was the Mental Development Index (MDI) of the Bayley Scales of Infant Development, 2nd edition, assessed at 36

months by evaluators unaware of treatment group and resuscitation history.

**Results:** MDI was higher in the EDI ( $102.6 \pm 9.8$ ) compared with the control resuscitated children ( $98.0 \pm 14.6$ , 1-sided  $P = .0202$ ), but there was no difference between groups in the nonresuscitated children ( $100.1 \pm 10.7$  vs  $97.7 \pm 10.4$ ,  $P = .1392$ ). The Psychomotor Development Index was higher in the EDI group for both the resuscitated ( $P = .0430$ ) and nonresuscitated children ( $P = .0164$ ).

**Conclusions:** This trial of home-based, parent provided EDI in children resuscitated at birth provides evidence of treatment benefits on cognitive and psychomotor outcomes. MDI and Psychomotor Development Index scores of both nonresuscitated and resuscitated infants were within normal range, independent of early intervention.

**Keywords:** Asphyxia/therapy; Child Development; Cognition Disorders/prevention & control.

### 12.109

#### ASSESSING QUALITY OF MATERNAL AND NEWBORN CARE: APPLICATION OF THE BALANCED SCORECARD APPROACH TO RANK PERFORMANCE OF CONTRACTED AND NON-CONTRACTED HEALTH FACILITIES IN PAKISTAN

*Fauziah Rabbani; Nousheen Pradhan, Shehla Zaidi; Iqbal Azam; Farheen Yousuf;*  
*Departments of Community Health Science and Obstetrics & Gynaecology, Aga Khan University, Karachi*

**Background:** Evidence from Low Income Countries suggests that contracting health care services has generally resulted in improved delivery of health services. However; there is a dearth of robust studies to assess the effectiveness of contracting schemes

**Objectives:** This study compares the quality of MNH care between contracted and non-contracted first level health care facilities in two

districts of Pakistan using the Balanced Scorecard (BSC) as an assessment framework.

*Method:* A cross sectional comparative study in 2012 compared quality of care in Rural Health Centers (RHCs) of Thatta and Chitral. The intervention arm comprised of two RHCs contracted out to Aga Khan Health Services. Four matching government managed RHCs served as the control. A BSC was designed to assess the readiness of these RHCs to deliver good quality MNH care. 20 indicators were developed representing 5 BSC domains: health facility functionality, service provision, staff capacity, staff satisfaction and patient satisfaction. Validated data collection tools were used to collect information. All indicators were converted into a score index.

*Results:* Contracted out facilities performed better than non-contracted in terms of health facilities' functionality (82% vs. 57%), staff satisfaction (96% vs. 62%) and patient satisfaction (90% vs. 65%). Staff capacity was rated good across both types of facilities (64% vs. 52%). Service provision remained poor across the board (44% vs. 33%). The performance of contracted facilities was rated excellent (80%), whereas the performance of non-contracted facilities was rated good (60%).

*Conclusion:* The study shows that contracting can bring about improvement in selected quality of care indicators even in remote rural settings. Lessons learnt can set the stage for up scaling the contracting initiatives in Pakistan.

*Keywords:* Maternal and Neonatal Health (MNH); Balanced Scorecard (BSC); Contracting; Health Facility Assessment; Pakistan.

## 12.110

### PREVALENCE, ASSOCIATED CO-MORBIDITIES AND CURRENT PRACTICES FOR PREVENTION OF STROKE IN HYPERTENSIVE POPULATION IN KARACHI, PAKISTAN

*Shiraz Hashmi, Muhammad Islam, Nadir A Syed, Tazeen H Jafar*  
*Department of Community Health Sciences, Aga Khan University, Karachi*

*Background/aims:* Cerebrovascular diseases have become the leading cause of death and disability in both high and low-middle income countries (LMICs). Hypertension confers the greatest attributable risk to stroke. We aimed to determine the prevalence, associated co-morbidities and the current practices for stroke prevention in hypertensive population in low-resource communities in Karachi.

*Methods:* We analyzed data on all hypertensive adults aged 40 years or older recruited in the study to assess prevalence and associates of chronic disease including CVD among adults from 22 representative communities in Karachi. Stroke was defined as self-reported physician diagnosed stroke. The prevalence, associated co-morbidities and existing use of therapies for prevention of stroke were evaluated. Multivariable model was built and logistic regression analysis was performed to determine the factors associated with prevalent stroke.

*Results:* Of the 2,817 hypertensive adults, 103 [(3.70%, (95% CI: 3.30%-4.40%)] reported physician diagnosed stroke. The sociodemographic and clinical factors, including female gender [0.61, (0.39-0.96)], being sedentary [2.07, (1.05-4.06)], diabetes [1.93, (1.22-3.04)] and lack of antihypertensive medication use [2.06, (1.36-3.12)] were independently associated with prevalent stroke.

*Conclusion:* Despite a significant burden of stroke and associated co-morbidities, the risk factors are poorly controlled and access to preventive therapy remains sub-optimal among individuals with hypertension in Karachi, Pakistan. Our findings highlight the need for urgent efforts for primary and secondary prevention of stroke in high-risk populations in Pakistan and other LMICs.

*Keywords:* Stroke; prevention; Karachi, Pakistan

### 12.111 MOTHER AND CHILD HEALTHCARE FINANCING FOR THE POOREST OF THE POOR

Muhammad Ashar Malik<sup>1</sup>, Babar Tasneem  
Shaikh<sup>2</sup> and Arslan Mazhar<sup>2</sup>  
Department of Community Health Sciences, Aga  
Khan University, Karachi

Community based health care insurance (CBHI) schemes are particularly important in situations characterized by difficulty of public sector to reach poor and unwillingness of private sector to market their financial protection products. Limited evidence is available on the effectiveness of these schemes in terms of addressing the MCH related healthcare need and health outcomes. The current study aims to synthesize evidence and draw conclusions on effectiveness of CBHI for maternal and child health (MCH) in term of coverage, nature of scheme, benefit packages, protection of the poorest of the poor and health outcomes.

*Methods:* A literature review was carried out in PubMed in the month of October 2013. Key terms used were “mother and child health” and “community bases health insurance” with “obstetric delivery” or “antenatal” or “pro-poor” or “financial protection”. Search strategy included original articles, review articles, case reports, systematic reviews and classical articles published in last five years, in English language and full text available. A total of 2748 records were retrieved. Titles of the records were reviewed for relevance to the objectives of the research and 193 articles were selected abstract review. Finally full text of twelve articles was included. Unpublished review reports, interviews and personal communications with key stakeholders were also included in the research methodology.

*Findings:* We reviewed 12 pro-poor financing schemes falling in the categories of community based healthcare financing, social protection safety nets and demand side financing scheme for primary healthcare including or excluding

MCH. Majority of the scheme covered a small proportion of the target population at the most 10 percent. Most of the scheme covered the poor but poorest-of the-poor were commonly left over. Most schemes offered primary healthcare in which maternal and child health was included. Many schemes involved private health insurance companies for process the reimbursement claims. All scheme were offered on voluntary basis to the communities

*Conclusion:* The key challenges to low coverage of the CBHF schemes can be the involvement of private-for-profit sector and voluntary nature of the schemes. The maternity related healthcare needs are planned and only the complications are accidental and thus do not safely falls in the risk pooling that require an accidental nature of loss. An exclusive MCH focused health financing scheme is critical for progress on maternal and child health targets. Community mobilizations methods can be alternatively used to generate resources and build trust of the communities to increase coverage and improve health.

*Keywords:* Mother and child health, financial protection, community based health insurance.

### 12.112 ASSOCIATION OF PARENTAL BLOOD PRESSURE WITH RETINAL MICROCIRCULATORY ABNORMALITIES INDICATIVE OF ENDOTHELIAL DYSFUNCTION IN CHILDREN

Muhammad Islam<sup>a</sup>, Tazeen H. Jafara<sup>b,c</sup>, Rasool Bux<sup>a</sup>, Shiraz Hashmia, Nish Chaturvedid\*, Alun D. Hughes<sup>d\*</sup>

<sup>a</sup>Department of Community Health Sciences, Aga Khan University, Karachi, <sup>b</sup>Health Services & Systems Research, Duke-NUS Graduate Medical School, Singapore, <sup>c</sup>Department of Medicine, Tufts Medical Center, Boston, USA. <sup>d</sup>National Heart and Lung Institute, Imperial College, London, UK.

*Objective:* Microcirculatory abnormalities precede the onset of hypertension, and may explain its familial nature. We examined the relationship between parental blood pressure

(BP) and offspring retinal microvasculature in Pakistani trios, [father, mother and child (aged 9-14 years)].

**Methods:** This is a sub-study of a population-based trial of BP reduction. Data were available on 358 normotensive, and 410 offspring of at least one hypertensive parent. Retinal-vessel characteristics were measured from digital images. Multivariable linear regression models were built to assess the associations between maternal and paternal BP and offspring retinal microvasculature.

**Results:** Optimality deviation was greatest in offspring of two hypertensive parents, compared to those with one or no hypertensive parent ( $p=0.030$  for trend). Paternal systolic and diastolic BP, were each significantly associated with optimality deviation in offspring ( $p=0.023$  and  $p=0.006$ , respectively). This relationship persisted after accounting for offspring cardiovascular risk-factors (increase in optimality deviation (95% CI) 0.0053 (0.0001 to 0.0106,  $p=0.047$ ) and 0.0109 (0.0025 to 0.0193,  $p=0.011$ ), for each 10 mm Hg increase in paternal systolic and diastolic BP, respectively). Maternal diastolic BP was inversely associated with offspring arteriovenous ratio  $-0.0102$  ( $-0.0198$  to  $-0.0007$ ,  $p=0.035$ ).

**Conclusion:** Microvascular endothelial dysfunction in children is associated with increasing levels of parental hypertension. The association with paternal BP is independent of other cardiovascular risk-factors, including the child's BP. Higher maternal diastolic blood pressure is associated with evidence of arteriolar narrowing in offspring. These early microcirculatory changes may help explain familial predisposition to hypertension in people of Pakistani origin at an early age.

**Keywords:** offspring, parental hypertension, retinal microcirculation.

### 12.113

#### ASSESSING FAILURE TO QUIT SMOKING AMONG PAKISTANI URBAN POPULATION

*Ahmed Suleman Haque, Muhammad Irfan, Zahra Samani, Safia Awan, Javaid Ahmed Khan*  
Section of Pulmonary and Critical Care Medicine,  
Department of Medicine, Aga Khan University  
Karachi

Tobacco dependence is a chronic relapsing disease which is potentially treatable. It kills a third to half of its users and most die on average 10–15 years prematurely. At present 5 million tobacco-related deaths occur annually worldwide and the toll is projected to reach up to 1 billion throughout the 21st century. A vast majority of smokers would like to quit but are unable to due to many reasons.

**Aims:** To assess factors associated with having ever attempted to quit smoking among current smokers users, and the reasons cited for failure.

**Methods:** Free health camps supervised by a physician and manned by trained staff were held across major cities of Pakistan. All consenting participants were administered a self-reporting questionnaire and had their exhaled carbon monoxide level measured.

**Results:** 12969 participants were interviewed. 99.3% (12872) were men. Mean age  $\pm$  SD was  $31.4 \pm 10$  years (Range 13-85). 66.1% smoked tobacco where as 12.6% used smokeless tobacco and 20.5% both. Average duration of smoking  $\pm$  SD was  $8.8 \pm 6.5$  years (Range 0.25 - 40). Measured exhaled carbon monoxide (ppm) was  $12 \pm 8$  (Range 0 - 215).

12633 (97.4%) participants wanted to quit. 12708 (98%) had received some form of advice to quit. 81.6% tried smoking cessation pharmacotherapy. Reasons cited for failing to quit were dependence 1965 (15.2%), unknown reason 1622 (12.5%), Friends / peer pressures 1554 (12%), Family related anxiety 771 (5.9%), Work related anxiety 681 (5.3%), Changes in mood 390 (3%), Weight gain 82 (0.6%)

**Conclusion:** A vast majority of participants wanted to quit tobacco use regardless of age, gender or years of usage. Nearly everyone had received advice about quitting, and more than three quarter had tried smoking cessation pharmacotherapy. Three commonest reasons cited for failing to quit were dependence, unknown reason and friend/peer pressures.



# **Renal / Urology**

### 13.1 FETAL PELVIC ECTOPIC KIDNEY: DIAGNOSED BY ANTE-NATAL SCAN & IT'S CONFIRMED BY POST NATAL SCAN SUCCESES

Mumtaz Malik, Rabia Hammad, Atika  
Departments of Radiology, Obstetrics &  
Gynaecology and Paediatrics & Child Health, Aga  
Khan Hospital for Women & Children, Kharadar

*Objective:* Unilaterally congenitally absent kidney or displaced ectopic kidney on antenatal scan are frequently detected. Recommended postnatal evaluation of these infants has evolved to minimize invasive testing while maximizing detection of Pelvic Ectopic Kidney.

*Case Presentation:* Primary gravida, 25 years age, patient came at our ultrasound clinic with three out side's scans, all were showed normal fetal structure. We examined an antenatal growth scan at 34.3 weeks showed fetal right kidney is seen normal, measures 52.7mm in length & 7.7 mms in cortical thickness, while left renal region was seen empty without any kidney and stomach bubble was seen clearly just near the left renal region, most probable diagnosis was congenitally displaced / ectopic left kidney or left kidney was not seen on antenatal scan. Counseling was done to patient's husband. Patient was admitted with 39 weeks of pregnancy & labor pain with stable vital. Baby girls delivered with normal Apgar scores 9 at 1 minute and 8 at 5 minutes. Head to toe normal ,system examination normal, neonatal reflexes good, passed urine on the day of birth and with stable vitals i.e. 140/min heart rate,40/min RR,99%oxy saturation,37c temp. Weight 3.6 KG. Post-natally scan shows Left Pelvic Ectopic Kidney.

*Conclusion & Recommendation:* Routine ultrasound screening of pregnant women has led to an increase in the number of detected renal abnormalities including displaced or ectopic kidney. Evaluation of all infants with an abnormal antenatal sonogram should begin with postnatal renal ultrasounds after birth and again at 4-6 weeks of age.

*Keywords:* Fetal ectopic pelvic kidney, antenatal scan, post natal scan.

### 13.2 ZONAL PREPONDERANCE ON TRANSRECTAL ULTRASOUND GUIDED PROSTATIC BIOPSY: AN AUDIT.

Raza Sayani, Imaad Ali, Uzma Naz  
Department of Radiology, Aga Khan University,  
Karachi

*Objectives:* To review the prevalence of neoplastic lesion on sextant or octant transrectal ultrasound guided prostatic biopsy. The pupose of this audit was to determine the zonal preponderance and correlate with PSA levels

*Materials and Methods:* Ninety one men underwent transrectal ultrasound guided biopsies in 6 month. Main indication for evaluation was raised PSA level. Biopsies were performed from following areas: right and left apex, right and left mid prostate, right and left base, right and left transition zone. Additional biopsy was performed in case of suspicious area appreciated on ultrasound.

*Results:* Mean PSA was recorded. Biopsy results show complete prostatic involvement in approximately one fifth patients and unilateral involvement in approximately 15%.Prostatic cancer was appreciated in 47 out of ninety one patients. In 18 patients all zones were involved; whereas, in 29 limited zones were involved. In 10 right base was involved, in 13 right mid zone, in 15 right apex, in 12 left base , in 17 left mid zone and in 15 left apex was involved. Biopsy findings were correlated with ultrasound findings or MRI findings were possible.

*Conclusions:* Prostatic tumors are seen in significant number in our data and the zonal preponderance also suggests extensive involvement by the time patient comes for biopsy. Screening and early biopsy may improve early detection and stage of presentation.

*Keywords:* Biopsy, transrectal ultrasound, prostate

### 13.3 MEDIUM TO LONG TERM FOLLOW UP OF PATIENTS TREATED WITH RETROPUBIC RADICAL PROSTATECTOMY FOR CLINICALLY LOCALIZED PROSTATE CANCER

*Mehwash Nadeem, SM Nazim, Farhat Abbas  
Department of Surgery, Aga Khan University,  
Karachi*

*Objective:* To evaluate the medium to long term cancer control, morbidity and mortality in men undergoing radical retro pubic prostatectomy (RRP) and PLND (pelvic lymph node dissection) for clinically localized adenocarcinoma prostate (CaP).

*Methods:* From Dec 1997 to June 2012, two hundred patients underwent RRP and PLND for localized CaP, identified through hospital data base using ICD9CM coding. Patient's characteristics, operative data, progression-free survival rates, recurrence rate, morbidity and mortality were analyzed. Kaplan Meir curve was plotted for survival estimate.

*Results:* The mean age was 63.6 years (range: 43 to 77 years). Mean pre-operative (PSA) was 21+/- 19 (1.0 to 131). RRP and bilateral PLND were performed in 172 patients (87%) of which 35 (20% ) had nerve-sparing surgery. In 8 cases with gross lymph node metastasis at frozen section, only bilateral orchidectomy was done while remaining 21 patients had RRP+PLND with bilateral orchiectomy. The mean length of hospital stay was 6 +/- 1 day with no 30-day perioperative mortality. On final histopathology 78% of tumors were confined to the specimen, 13% had seminal vesicle invasion and 9% had nodal metastasis. Twenty four (12.5%) patients had positive surgical margins of which 13 patients had rising PSA requiring adjuvant treatment. Overall 85% of the patients were fully continent. Progression-free and overall survivals were 85% and 94%, respectively.

*Conclusions:* Our long term results indicate that RRP has an excellent potential for cancer control with low morbidity in men with localized Ca

*Keywords:* prostate cancer, radical prostatectomy, localized ca prostate

### 13.4 RECURRENT URINARY TRACT INFECTIONS IN CHILDREN: ROLE OF DMSA SCAN IN DETECTING VESICoureTERIC REFLUX

*Muhammad Awais, Abdul Rehman, Maseeh-uz-  
Zaman, Naila Nadeem  
Departments of Radiology and Surgery, Aga  
Khan University, Karachi*

*Introduction:* Performing micturiting cystourethrography (MCUG) in young children with recurrent urinary tract infection (UTI) is controversial with discrepancy among the major guidelines. Previous studies have shown that a normal dimercaptosuccinic acid (DMSA) scan may avoid the need of MCUG for detecting Vesicoureteric Reflux (VUR )in children with first febrile UTI. However, the role of DMSA for ruling out VUR in children with recurrent UTI has not previously been studied.

*Methods:* A total of fifty children under the age of 10 years with recurrent UTI who underwent MCUG scan within 3 months of DMSA scan at our institution were included. Diagnosis of recurrent UTI and grading of VUR was according to previously established standards. Abnormalities on DMSA scan i.e; scarring, hydronephrosis and reduced differential renal function were compared with the presence of VUR on MCUG.

*Results:* High-grade VUR was noted on MCUG in 22 (44%) cases. The findings on DMSA included hydronephrosis and scarring in 25 (50%) and 25 (50%) cases respectively. Abnormalities on DMSA scan for detecting the presence of high-grade VUR on MCUG examination had sensitivity, specificity, positive (PPV) and negative predictive values (NPV) of 95.45%, 35.71%, 53.85% and 90.91% respectively. The positive and negative likelihood ratios (LR) were 1.48 and 0.13 respectively.

*Conclusion:* DMSA scan had a high overall sensitivity and negative predictive value with a low negative likelihood ratio for ruling out high-grade VUR on MCUG, which may obviate the need of invasive MCUG along with its associated drawbacks.

*Keywords:* Vesicoureteric reflux, micturiting cystourethrography, dimercaptosuccinic acid scan

### 13.5 MANAGEMENT GRADE IV OF RENAL INJURIES

*Muhammad Iqbal Nasim, Hammad Ather  
Department of Surgery, Aga Khan University,  
Karachi*

**Background:** The past two decades have witnessed significant changes in the management of traumatic renal injuries. Non-operative management has become the standard of care in patients with American Association for the Surgery of Trauma (AAST) grade I to III renal injuries, provided the patients are hemodynamically stable. By contrast, most experts agree that patients with grade V renal injuries should be explored. However, the management of grade IV renal injury remains controversial. Grade IV injury is a serious injury but does not necessarily mandate surgical management

**Objectives:** To determine the clinical features and management of renal trauma patients and in particular critically analyze grade IV renal trauma.

**Methods:** We retrospectively reviewed the patients' records of renal trauma patient from 2002 to 2012. Patient's characteristics' including demographics, presentation workup and management were assessed from the medical records. Categorical variables described in terms of frequencies and percentages, continuous variables described in terms of mean and standard deviation. Data was analyzed using SPSS 19

**Results:** We identified 58 patients with renal trauma most of them (51/58) were males with an average age of 31.66 (S.D 12.43). Most of the patients (40/58) had Blunt trauma. Associated injuries are common (41/58). Solid viscera injury were more common (liver 20, spleen 18) as compared with intestinal injuries (14/58). All 6 patients with grade V injuries had nephrectomy. Fifteen patients had grade IV renal injuries which were all managed conservatively, except for 1 patient with penetrating injury who had partial nephrectomy. Mean hospital stay (10.69 VS 6.71 p value=0.36) was higher in those patients managed conservatively.

**Conclusion:** Conservative management in haemodynamically stable grade IV blunt renal injuries can be used successfully without significantly increasing the risk of complications. Laparotomy for non-urological injuries is not an absolute indication for renal exploration, and conservative management should be applied judiciously.

**Keywords:** renal trauma, conservative treatment, non operative

### 13.6 PREVALENCE, DETERMINANTS, AND MANAGEMENT OF CHRONIC KIDNEY DISEASE IN KARACHI, PAKISTAN - A COMMUNITY BASED CROSS-SECTIONAL STUDY

*Saleem Jessani, Rasool Bux, Tazeen H. Jafar  
Department of Community Health Sciences, Aga  
Khan University, Karachi*

**Background:** Chronic kidney disease (CKD) is increasing being recognized as a global public health problem. However, there is dearth of information on the prevalence, determinants, and management of CKD from low- and middle-income countries. The objectives of this study were to determine the 1) prevalence of CKD; 2) socio-demographic and clinical factors associated with CKD; and 3) the existing management of patients with CKD with regards to BP control and use of antihypertensive medications among adults in Karachi, Pakistan.

**Methods:** We conducted a cross-sectional study on 2873 participants aged  $\geq 40$  years enrolled from 12 randomly selected communities in Karachi, Pakistan. CKD was defined as eGFR  $< 60$  ml/min/1.73 m<sup>2</sup> by CKD-EPI Pakistan or urine ACR  $\geq 30$  mg/g.

**Results:** The prevalence (95% CI) of CKD was 12.5% (11.3 – 13.8%). The factors independently associated with greater prevalence of CKD were older age, hypertension, diabetes, elevated systolic BP, raised fasting plasma glucose and raised triglycerides (p $< 0.05$  for each). About 275 adults with CKD (76.6%, 95% CI: 71.9 – 80.9%) had

concomitant hypertension. Of these, 47% (95% CI: 41.2 – 53.4%) were on anti-hypertensive medications, and less than 20% had their BP controlled to conventional target of <140/90 mm Hg, and only 9.5% (95% CI: 6.3 – 13.5%) were on blockers of renin-angiotensin system.

*Conclusions:* CKD is common among Pakistani adults. The conventional risk factors for CKD and poor control of BP among patients with CKD highlight the need to integrate CKD prevention and management in the primary care infrastructure in Pakistan, and possibly neighbouring countries.

*Keywords:* CKD prevalence, CKD-EPI Pakistan, Risk factors

### 13.7 FREQUENCY OF FOCAL AND SEGMENTAL GLOMERULOSCLEROSIS (FSGS) DIAGNOSED ON RENAL BIOPSY AT TERTIARY CARE HOSPITAL IN KARACHI.

*A. Quresh*  
*Section of Nephrology, Department of Medicine,*  
*Aga Khan University, Karachi*

*Introduction:* There has been marked variation in the trend of frequency of Glomerulonephritis around the world depending upon the geographic areas, socioeconomic conditions, race, age and indications for renal biopsy. Retrospective data showed that focal segmental glomerulosclerosis (FSGS) was the most common form of Primary Glomerulonephritis. Similar retrospective analysis done in Pakistan showed FSGS as the leading histopathological diagnosis. To our knowledge there was no prospective data available in Pakistan that showed the frequency of FSGS in renal biopsy patients at tertiary care hospital. Rationale of our study was to see frequency of FSGS diagnosed on renal biopsies done at a tertiary care setting.

*Objective:* To determine the frequency of Focal and Segmental Glomerulosclerosis (FSGS) in patients undergoing renal biopsy at tertiary care hospital in Karachi.

*Study design:* Cross sectional study

*Settings:* Aga Khan University Hospital, Nephrology Section.

*Duration:* 6 months (2<sup>nd</sup> December 2011 to 2<sup>nd</sup> June 2012)

*Subjects and Methods:* Total seventy nine patients of either sex above the age of 18 years were included undergoing renal biopsy for evaluation of cause of proteinuria. Patients demographics like age, sex and degree of proteinuria (measured by 24 hour urinary protein excretion or protein-creatinine ratio) were recorded. On discharge they were asked for follow up with report of histopathology of biopsy. Quantitative variables like age, 24 hour urinary protein excretion or protein-creatinine ratio was presented as mean  $\pm$  standard deviation whereas qualitative variables i.e. gender, outcome (histopathological diagnosis) was taken as categorical. All analyses were conducted by using the Statistical package for social science SPSS (Release 17.0, standard version, copyright © SPSS; 1989-02).

*Results:* Frequency of FSGS diagnosed at renal biopsy was 16.5 %. Among FSGS patients 9 were males (69.2%) and 4 were females (30.8%).

*Conclusion:* FSGS is a common histopathological diagnosis which could be anticipated in patients with nephrotic syndrome. Large prospective trial in our part of the world is required to determine the frequency of FSGS so that approximate burden of patients suffering from FSGS could be established.

*Keywords:* Focal Segmental Glomerulosclerosis, Renal Biopsy, Proteinuria

### 13.8 PURPLE URINE BAG SYNDROME: A CASE REPORT AND REVIEW OF LITERATURE

*Sonia Yaqub, Syed Mohkum, Kunwar Naveed  
Mukhtar*

*Section of internal Medicine, Department of  
Medicine, Aga Khan University, Karachi*

Purple urine bag syndrome (PUBS) is an infrequent condition, seen mostly in elderly female patient, characterized by an intense

purple discoloration of contents of urine bag following long-term indwelling urinary catheterization. The purple discoloration is most often due to the presence of indigo and indirubin pigments which are metabolites of tryptophan. Urinary bacteria with indoxylsulphatase activity metabolize indoxyl sulphate to produce indigo and indirubin, particularly in alkaline urine. We report an elderly woman with a urinary tract infection and constipation who presented with purple urine bag syndrome. The purple urine disappeared after antibiotic therapy and change of the urine bag. To the best of our knowledge, this is the first case of PUBS reported from this region.

*Keywords:* Purple urine bag syndrome, tryptophan, Urinary catheters

### 13.9 RENAL INVOLVEMENT IN PAROXYSMAL NOCTURNAL HEMOGLOBINURIA: A CASE DISCUSSION IN CLINICO- PATHOLOGICAL CONFERENCE

*Hussain S<sup>a</sup>, Qureshi A<sup>a</sup>, Kazi J<sup>c</sup>*  
*<sup>a</sup>Section of Nephrology, Department of  
Medicine, Aga Khan University, Karachi*  
*<sup>c</sup>Professor of Pathology, Karachi Medical and  
Dental college. Consultant histopathologist and  
Head Department of Histopathology SIUT,  
Karachi, Pakistan*

Renal involvement in paroxysmal nocturnal hemoglobinuria (PNH) usually is not apparent but, in cases with clinical involvement, it varies from reversible acute dysfunction to chronic irreversible damage. Early diagnosis and treatment is crucial to prevent disease progression and irreversible chronic kidney disease. The ultimate outcome of CKD in many patients is the need for renal replacement therapy, which necessitates ever-growing dialysis and transplantation programs thereby imposing a significant economic burden on the healthcare system. In a third world country like Pakistan, increase burden due to CKD can be very hard on families. Doctor visits, hospitalization and dialysis are all out of pocket

expenses. So prevention, early detection, and timely intervention are the only cost-effective strategies. We report a case of acute kidney injury due to PNH. This case shows AKI as one of the complications of PNH which may have a clinical course like ATN. This could be due to ATN or AKI superimposed on CKD due to hemosiderin deposits in the renal tubular epithelial cells. Our patient was dialyzed initially and discharged with permanent catheter in place with the advice to continue thrice a week dialysis. He required dialysis for one week then started making urine. His subsequent outpatient visit showed improved renal function. Permanent catheter was removed and maintenance dialysis was stopped. Finally, we briefly review the literature on renal involvement in PNH, treatment options for PNH and pigment induced nephropathy followed by question and answer session at the clinico-pathological conference held on 4<sup>th</sup> of March 2011 at SIUT.

*Keywords:* Paroxysmal nocturnal hemoglobinuria, acute kidney injury, chronic kidney disease, hemodialysis.

# **Techniques / Innovation**

#### 14.1 FLUORESCENCE ACTIVATED CELL SORTER: CORE FACILITY AT AKU

*Abdul Wahab Siddiqui<sup>1</sup>, Asghar Nasir<sup>1</sup>,  
Muhammad Khalid<sup>1</sup>, Zulfiqar Naqvi<sup>1</sup>, Anwar  
Siddiqui<sup>2</sup> and El-Nasir Lalani<sup>1</sup>*  
*Departments of <sup>1</sup>Pathology & Microbiology and  
<sup>2</sup>Biological & Biomedical Sciences, Aga Khan  
University, Karachi*

**Background:** The newly established fluorescence activated cell sorter (FACS) core facility at Aga Khan University has latest FACS Aria™ III cell sorter (*BD Biosciences*) which has the capability of performing multiparameter flowcytometric analysis with high speed cell sorting. FACS Aria™ III has three lasers installed, blue, red and near UV laser (only one installed in Pakistan). Now researchers at AKU can design their experiment and perform in-depth analysis with the availability of 9 fluorochromes. Simultaneously, 4 different populations (live cells) can be sorted into separate tubes with high speed throughput. The sorted cells can be grown back in the laboratory and can be used for further analysis and research purpose.

**Methodology:** To avail the facility service the researcher need to contact the FACS team or can visit our website and fill out the sample request form. The sample request form will be reviewed by the team and the researcher will be notified for an appropriate date and time to perform the experiment.

**Results:** To date FACS Aria™ III cell sorter has been optimized for analysis of PBMCs and Cancer cells. Analysis of Epithelial (Breast and Prostate) and hematological (Multiple Myeloma) malignancies are routinely performed. The optimization for the analysis of Stem cells (Normal and Cancer Stem cells) is underway.

**Conclusion:** A fully established and functional FACS core facility is now available for researches at AKU. The facility has dedicated faculty and staff ready to help researcher in setting up their protocols and in Data analysis.

**Keywords:** FACS, high throughput cell sorting

#### 14.2 EVALUATION OF PLAN DOSIMETRY USING SCORING INDEX FOR PROSTATE INTENSITY-MODULATED RADIATION THERAPY (IMRT)

*Abdul Qadir Jangda, Shoukat Ali, Ghufuran Ali*  
*Department of Oncology, Aga Khan University,  
Karachi*

**Objectives:** The present study is designed to investigate the dosimetric effects of number of fields and field orientation on the basis of lateral separation through composite scoring in prostate IMRT. **Introduction:** The treatment of prostate cancer, IMRT has been established in modern clinic to improve dose distribution with possible fewer side effects. The no. of fields and field orientation is the most important parameter to establish IMRT in achieving the optimum target coverage while sparing organs at risk. This study focuses on the dosimetric comparison on the basis of Scoring Index with respect to lateral separation of patients in prostate IMRT.

**Method and Materials:** Six patients of prostate cancer are chosen for the study in which three patients were of less separation (30-34 cm) and three were of larger separation (40-44 cm). Each patient planned with IMRT for 5, 7 and 9 fields using Eclipse treatment planning system and evaluated with scoring index.

**Result:** The study shows that 5 fields provides a good dose homogeneity and less dose to OAR for the lateral separation ranging from 30 to 34 cm. However, 5 fields for the larger separation were inadequate in terms of dose homogeneity in target. It is noted that the patients with the larger separations, higher than 35 cm requires more no. of fields, 7 or 9 to get the acceptable target coverage and dose to the OAR.

**Conclusions:** Our study shows that 5 fields with gantry angles of 0, 65, 135, 225 and 295 is the best optimum arrangement in terms of dose homogeneity in target and doses to OAR in the patients with the lateral separation ranging from 30 to 34 cm.

**Keywords:** IMRT, Prostate, composite score



### 14.3 DOSIMETRIC EVALUATION OF HIGH DOSE RATE (HDR)BRACHYTHERAPY PLANNING SOFTWARE

*Abdul Qadir Jangda, Asad Yousuf, Safdar Khan  
Department of Oncology, Aga Khan University,  
Karachi*

*Introduction:* Brachytherapy is the placement of sealed radionuclides close to the surface to be treated; the treatment area is accessible either externally or through body cavities. High dose rate (HDR) brachytherapy uses a quite intense source of radiation (typically 10 Curie source made of Iridium 192) delivered through temporarily placed applicators. The purpose of this study was to make a dosimetric comparison of HDR Brachytherapy planning software was done qualitatively. Three patients with intracavity application were planned on both systems using orthogonal radiographs. The dose is specified at certain clinically useful reference points as per Manchester System

*Material and Method:* In this study Brachyvision and ABACUS planning software were used. Data of three patients were acquired from simulation, whom treatment is done by using an applicator (Tandem & Ovoid). The treatment plans are comparing on the basis of following parameters. • Doses at different reference points when time is simulated. • Doses at different reference points using volumetric optimization and Independent dwell time calculated with smoothing.

*Results:* •The dose difference for the reference points ranged from 0.4-1.5%. For bladder and rectum, the differences were 5.2% and 13.5%, respectively. •There is slight difference between the dose calculations performed by the two treatment planning systems. These discrepancies are caused by the differences in the calculation methodology adopted by the two systems. *Conclusion:* We can conclude that brachyvision is more users friendly and give better results as compare to abacus which is old planning software.

*Keywords:* Brachytherapy, Dosimetric, HDR

### 14.4 CHOANAL ATRESIA: DIAGNOSIS AND SIMPLE ENDOSCOPIC REPAIR AT REMOTE PRIMARY CARE CENTERS

*Adil Ayub, Ayub-Ur-Rehman  
Medical College, Aga Khan University, Karachi*

Choanal atresia (CA) is a rare, congenital malformation resulting as a failure in communication between the posterior nasal cavity and the nasopharynx. The clinical course is often asymptomatic in unilateral CA leading to higher rates of misdiagnosis, in comparison to bilateral CA, which manifests itself as a surgical emergency at birth. Most cases present as isolated malformations, but it may also be associated with other congenital anomalies in 20-50% of cases. Currently, the most important diagnostic tool for CA is computerized tomography (CT) and confirmatory diagnosis is usually achieved with the help of nasoendoscopic examination. Although, different surgical approaches have been used in the past, trans-nasal endoscopic repair is currently preferred over others. Herein, we describe our experience of three cases and share our simpler stentless endoscopic technique, to facilitate physicians working in low facility units for a timely diagnosis and prompt treatment.

*Keywords:* Choanal atresia, Surgical approaches, Nasal stenting

### 14.5 VALIDATION OF POINT- OF- CARE INTERNATIONAL NORMALIZED RATIO INR DEVICE WITH MAIN HOSPITAL INSTRUMENT

*Anila Rashid, Bushra Moiz, Mohammad Hassan,  
Lena Jafri, Aysha Habib  
Department of Pathology & Microbiology, Aga  
Khan University, Karachi*

*Background/Introduction:* Point-of-Care International Normalized Ratio (POC-INR) testing is an established and reliable means of monitoring patients requiring chronic warfarin therapy, hence

provides easier access and minimize the turnaround time for test results. The patients drug doing is largely monitored by INR from POC device in the clinic. It is therefore, important to validate INR results from POC device with the main laboratory instrument as the lack of comparison may lead to errors in the assessment of correct INR and degree of anticoagulation.

**Objective:** To perform comparative evaluation of the POC-INR with the INR obtained in laboratory by standardized automated method. **Material and Methods:** It is a prospective ongoing study started in June 2013. A total of 40 subjects are included out of which 20 were patients taking warfarin and 20 were normal individuals taken as controls. The capillary and venous blood was collected from each subject for estimation of INR on POC (CoagucheckXS-Roche) and main lab instrument (Sysmex-Cs2000i) respectively. Each test was run in duplicate.

**Results:** A total of 40 samples were analyzed on Cs2000i and CoagucheckXS simultaneously. Mean INR using Cs2000i and CoagucheckXS was  $2.7 \pm 1.9$  (range 1.2-8.85) and  $2.9 \pm 2.0$  (1.35-8.25) respectively. Mean bias between the two methods was 0.2(8.2%). POC-INR instrument showed excellent correlation with the lab instrument (correlation co-efficient,  $r = 0.97$ ). The slope was calculated as 1.06(95%CI 0.98-1.14) and the Y intercept was 0.07( 95% CI -0.19-0.34).

**Conclusions:** Acceptable correlation was obtained among POC-INR and main automated instrument in assessing INR.

**Keywords:** INR, Point-of-care, Warfarin

#### 14.6 BILINGUAL STORYBOOKS FOR CHILDREN – A NOVEL APPROACH TO PROMOTING CHILD HEALTH LITERACY

Asad Mian, Nukhba Zia, Uzma R Khan, Junaid A. Razzak, Amarah Shakoor  
Department of Emergency Medicine, Aga Khan University, Karachi

**Introduction:** Pakistan ranks an abysmal 159<sup>th</sup> (out of 184) on the world literacy list. Creative ways are therefore needed to improve children's general literacy and health literacy for preventative issues.

**Objective:** To develop bilingual stories that will be attractive to children and then to gauge the impact of the books on child health literacy. **Methods:** In collaboration with Bookgroup, a well-established child literacy-related educational organization based in Karachi, we developed story lines that would attract children. As a next step we are developing a pre-test / post-test approach to gauge the efficacy these books as child health literacy tools.

**Results:** As a result of the above effort, 'Bilongra - Books for Change' was formed. Bilongra in Urdu means kitten, but more commonly it is used as an endearment for a child. The funny and imaginative stories contain subtle themes pertaining to active child play and general child health issues. Over a three year period a series of five bilingual books under the Bilongra banner have been published, printed and distributed in a few schools in Pakistan and India. In addition to English, Urdu and Hindi, one story has been translated into Swahili for potential use in Africa.

**Conclusions:** The first book in the series called 'Bilongra' that relates to outdoor play will be used in a few public and private schools in Karachi as a teaching tool and its efficacy to promote knowledge regarding road traffic injury prevention among young children will be gauged.

**Keywords:** Child Literacy, child health literacy, preventative medicine

#### 14.7 MOLECULAR SIGNATURES OF CALPAIN 10 ISOFORMS, ENVISAGE OVERLAY FUNCTIONAL SIMILARITY AND THERAPEUTIC POTENTIAL USING BIOINFORMATICS TOOLS

Bushra Chaudhry, Kausar Saboohi  
Department of Biological & Biomedical Sciences, Aga Khan University, Karachi

**Introduction:** Calpain 10, a member of cysteine protease family, is present in eight different isoforms (a-h) and plays a vital role in insulin secretion, action and susceptibility to Type-2 Diabetes. The exact mechanism through which it influences the insulin secretion and action is not yet known. To envisage its mechanism of action,

a structural bioinformatics approach was applied using tools, available on NCBI, EMBLEBI, Ensembl and Swiss model repository websites.

*Results:* domain I and II of calpain10 a, was found having Specific homology with super family cysteine proteinase domain II a and II b ( $e=1.30e-77$ ,  $1.00e-20$ ). Remaining sequences (domain III and T) of isoform *a* and *c* indicated some similarity (Avg.  $e=1.94e-37$ ) to calpain large subunit domain III (acc. # PF01067), indicating that calpain 10 *a* and *c* forms may have a role in calcium induced activation and electrostatic interaction with sub-domain II. This similarity further proposed a calpain mediated interaction with phospholipids and translocation to cytoplasmic/nuclear members. The isoform *g* (139 AA) showed similarity with a part of catalytic domain of cystein protease super family ( $e$ -value $1.00e-20$ ), predicted to exhibit protease like activity. Protein structure analysis, using Swiss-model repository for 3D structures, showed structural resemblance of 29% with 1QXP template of mu-calpain, 27% with 1Kfx of m-calpain and 32% with 2p0r of calpain 9 in complex with leupeptin.

*Conclusion:* The calpain 10 isoforms *a*, *c* and *g* show partial resemblance to m, mu, and calpain 9, through 3D modeling indicating partial likeness of their functions. Further these models predict that deficiency of their level in patients may be compensated using molecular medicine technology approach.

*Keywords:* Calpain, diabetes, molecular medicine technology

## 14.8

### LABORATORY EVALUATION OF PROTHROMBIN TIME(PT) AND ACTIVATE PARTIAL THROMBIN TIME(APTT) TESTING VIA AUTOMATED COAGULATION ANALYZERS SYSMEX CA-1500 AND CS-2000I

*Bushra Afaq, Humaira Perveen, Anila Rashid, Bushra Moiz*  
*Department of Pathology & Microbiology, Aga Khan University, Karachi*

*Introduction:* Currently many types of coagulation analyzers for measurement of prothrombin time (PT) and activate partial thrombin time (aPTT) have been developed and used. CS-2000i is newly installed coagulation analyzer in our laboratory enabling simultaneous multiparameter random assay for coagulation, chromogenic substrate assay method and turbidimetric immunoassay.

*Objective:* To evaluate the performance of newly installed CS-2000i and comparison of its testing result PT and aPTT with the automated coagulation analyzer CA-1500 at our section.

*Method:* The study was carried out in Clinical Laboratory, Aga Khan University and Hospital. A total of 57 samples with varying degree of PT and aPTT were included. 1.8 cc of venous blood was collected in 3.2% sodium citrate tube and was run simultaneously on CS-2000i and CA-1500 within 2 hours of collection maintaining optimal temperature and handling. EP Evaluator was used for comparison studies.

*Result:* A total number of 57 samples were analysed simultaneously e CS-2000i and CA-1500. Mean PT on CA-1500 was  $16.41 + 9.57$  whereas mean PT on CS-2000i was  $16.43 + 9.54$ . Mean Bias between the two method was 0.02(% Bias 0.12%). Mean aPTT on CA-1500 was  $32.2 + 17.64$  and  $32.16 + 17.53$  on CS200i. Mean Bias between the two methods was -0.04(% Bias 0.13%). Newly installed CS-2000i showed coefficient correlation with the previous CA-1500 for both PT and aPTT ( $r=0.990$ ) and( $r = 0.99$ ) respectively. The slope was calculated as 0.99 and then y-intercept was 0.07 for PT, whereas for aPTT, the slope was 0.99 and the y-intercept was 0.16.

*Conclusion:* The comparison study indicated good correlation between results of CS-2000i and CA-1500.

*Keywords:* Coagulation Analyzer, Prothrombin Time (PT), Activated Partial Thromboplastin Time (aPTT)

#### 14.9 TIMELY & EFFECTIVE PANIC ALERT: A SUPERIOR & QUICK WAY TO SAVE THE PATIENTS' LIVES BY PROMPT DISSEMINATES

*Mumtaz Malik, Huma Naz, Maria, Samina Gul,  
Sunita Rajjani, Alidino Khowaja, Irfan Valliani,  
Nusrat Khowaja, Rashid Mughal, Meyesoof Arif  
Department of Radiology, Aga Khan Hospital  
For Women & Children, Kharadar*

*Objective:* Timely communication of life threatening emergencies (provisional findings) detected on Ultrasound & X-ray examinations to the primary team or patient or his / her attendance.

*Introduction:* Identification and communication of life threatening emergencies is the joint duty of on duty doctors ,Technologists, Medical unit receptionists, Nursing Staff & administrative personnel's , after completion of procedures.

*Methodology:* During working hours, the Doctors with their team [Radiographers & Medical unit receptionists, administrative staff] posted in respective sections will screen all cases as soon as possible, but not later than 3minutes, from the time of completion of examination, and will ensure that the alerts are communicated and recorded, including Patient MR# with Name ,time of communication & name doctors /Nurse Staff name, Name and designation of the received person ,Provisional Findings . We have a life threatening emergency lists for guideline; additional diagnosis would be communicated as per the Doctors / radiologist's discretion.

*Results & Conclusion:* Total 22474 patient underwent the radiology procedure from July1st 2012 to 30thJune ,2013 ,in which only 77 [0.34% ]patients were diagnosed as an emergency cases, they were need Emergency lifesaving management ,Through this Panic alert policy ,We were saved the 77 lives [100%] by effective verbal communication & maintain the log book & its follow up at Radiology department, AKHWCK.

*Keywords:* Effective communication skill,  
Dissemination of panic alert, panic case log  
book.

#### 14.10 PERCUTANEOUS TRANSHEPATIC BALLOON DILATATION OF BILIARY ENTERIC ANASTOMOTIC STRICTURES

*Nauman Al Qamari, Raza Sayani, Tanveer ul  
Haq, Mohammad Azam Khan, Uzma Naz  
Department of Radiology, Aga Khan University,  
Karachi*

*Objective:* To assess the technical success, complications and re intervention rate of percutaneous transhepatic balloon dilatation of biliary enteric anastomotic strictures.

*Materials and Methods:* The efficacy of the percutaneous transhepatic procedure was retrospectively studied in patients who underwent balloon dilatation of benign postoperative biliary enteric anastomotic strictures at Aga khan university hospital between Dec 2004 and Sep 2013. Age ranges from 23-70 years (mean age 44.1 years). 8 mm – 12 mm diameter balloons were used for stricture dilatation followed by placement of 8 Fr – 14 Fr internal external drainage catheters. Mean follow-up was 144.76 days (range 14 - 834 days). Technical success, complications and rate of subsequent intervention was analyzed.

*Results:* Technical success rate was 100%. There was no major procedural complication and no mortality. During follow-up 78% patients required subsequent intervention, repeat cholangioplasty and stenting.

*Conclusion:* Percutaneous balloon dilatation is a safe and useful treatment option for biliary enteric anastomotic strictures but repeated interventions may be often required to maintain patency of anastomosis.

*Keywords:* Benign strictures; Biliary tract; ,  
Balloon dilatation, Interventional Procedures.

#### 14.11

##### DEPARTMENTAL AUDIT TO REVIEW DIAGNOSTIC YIELD OF ULTRASOUND GUIDED FNA.

*Raza Sayani, Shahroze Damani, Shazia Aamir,  
Uzma Naz  
Department of Radiology, Aga Khan University,  
Karachi*

*Objective:* To review the diagnostic yield of FNA histopathologies. To see the repetition frequency and outcomes.

*Methods:* We retrospectively reviewed data of patients who underwent FNA for diagnostic evaluation of any type of lesion. As per departmental protocol initial slides were sent to histopathology for confirmation of adequacy of material. If the material was declared as inadequate a repeat attempt was performed on the same day. We reviewed the number of repetition in first go and then in the final report and also review the diagnosis and frequency of abnormalities found in our data.

*Results:* A total of 140 patients underwent FNA in 2 months period. 93 had FNA of thyroid lesions. 71 were declared adequate and 22 were not adequate and repeated. The final histopathologic breakdown showed 7 results to be inconclusive. Other 47 lesions were from lymph nodes, Salivary glands, pancreas etc. Amongst these 36 were declared adequate in first instance and repeat FNA performed for 11. Final results showed 4 to be non diagnostic.

*Conclusions:* We observed a 23 % repeat rate which improved to 7% in thyroid lesions and similar rates of 24% and 8 % in other lesions. Explaining this limitation to patient from beginning help increase patients satisfaction and understanding.

*Keywords:* Ultrasound guided procedure, FNA, Diagnostic yield

#### 14.12

##### THE USE OF PEDIATRIC PROCEDURAL SEDATION AND ANALGESIA IN THE PEDIATRIC EMERGENCY ROOM OF A TERTIARY

*Huba Atiq, Sarosh Saleem, Beena Rizvi, Syeda  
Ghazala Irfan Qazi  
Department of Emergency Medicine, Aga Khan  
University, Karachi*

*Introduction:* Pediatric Procedural Sedation and Analgesia (PSA) is a technique of administering sedatives or dissociative agents with or without analgesics to induce a state that allows the potency to tolerate unpleasant procedures while maintaining cardiorespiratory function and motor control. There are evidence based reports on the safety and efficacy of sedative agents such as midazolam, ketamine and propofol in children.

*Objective:* To describe and analyze the safety and efficacy of procedural sedation and analgesia in pediatric emergency room

*Methods:* This study was a retrospective case series. All children requiring PSA for their diagnostic or therapeutic procedures were enrolled in the study, from June 2012 to July 2013. Low dose of Ketamine and Propofol were used in PSA.

*Results:* The total of 40 patients required PSA, out of which, 30 medical records were retrieved. Majority of study participants were female and 48% were from age group 1-3years. The procedures performed requiring PSA included laceration repairs (92%), lumbor punctures and forearm reductions. Most of children required low dose Ketamine during the procedure. Desaturation was the only adverse event reported in only one of the patients and that too was managed by airway positioning. *Conclusion:* The uses of low dose ketamine and propofol for the first time in our pediatric emergency room are the safest techniques to relieve pain and anxiety in children requiring the diagnostic or therapeutic procedures. Further studies are required to evaluate the parent's perception on effectiveness, side effects and satisfaction regarding procedural sedation and analgesia in emergency room

*Keywords:* Procedural sedation, Pediatric, Ketamine

#### 14.13

Process evaluation of introducing online faculty evaluation by residents at a tertiary care hospital in Pakistan

*Khadija Nuzhat Humayun*  
Department of Paediatrics & Child Health, Aga Khan University, Karachi

**Background:** Faculty evaluation by resident physicians is uncommon in post graduate medical education. This study aimed to conduct process evaluation of recently introduced online faculty evaluation by residents at a private teaching hospital in Karachi Pakistan. **Methodology:** Action research design was utilized, and qualitative assessments were conducted between April – May 2013 at a private tertiary care hospital in the city of Karachi, Pakistan. Data was collected from Pediatric faculty and residents through Focus Group Discussions (FGDs). The transcribed data was analyzed using computer software QSR NVivo v 10.0; and themes and sub-themes were drawn.

**Results:** A total of 5 FGDs were conducted, 3 with faculty members and 2 with residents. Most participants agreed that faculty evaluation is a critical component of the residency program, and an important contributor for faculty's professional growth. However, ambiguity about the purpose of evaluation, lack of understanding of the component of online evaluation form, and problems with rating scale and review process were reported. Large majority of participants recommended to organize retreat of faculty evaluation, arrange motivation sessions for faculty and residents, ensure privacy of ranting residents, modification in rating scale and analysis, and defined process of reviewing and sharing the feedback with faculties.

**Conclusion:** Process evaluation was an important exercise, and helped to understand and improve the online faculty evaluation in pediatrics residency program.

**Keywords:** Process Evaluation, Online Faculty Evaluation, Evaluation

#### 14.14

LAUNCHING OF ANTICOAGULATION MANAGEMENT SERVICES (ACM) - IMPROVING PATIENT CARE

*Nida Najmi, Bushra Moiz*  
Departments of Pharmacy and Pathology & Microbiology, Aga Khan University, Karachi

**Introduction:** Warfarin a broadly used oral anticoagulant, contribute in major adverse drug events due to over and under dosage. Due to the complex dosing, requisite follow-up monitoring, and inconsistent patient compliance the Joint Commission outlined the National Patient Safety Goal related to anticoagulation therapy (03.05.01) in January 1, 2009.

**Objective:** The objective of ACM Services is to track patients closely to help ensure follow-up and provide quality care with ongoing education to patients receiving anticoagulation therapy.

**Method:** A multidisciplinary team of specialized anticoagulation Pharmacist, Hematologist and Nurse who work in coordination with the patient's referred physician was developed. Several quality improvement tools were used to initiate Anticoagulation Clinic with the collaboration of Pharmacy, Oncology/Pathology departments. Several Education materials are developed both in English and Urdu to increase awareness and to educate patients about the proper use of anticoagulants. Point of care testing device for on the spot INR checking is used in the clinic for the feasibility of patients.

**Results:** 15 Patients were registered to anticoagulation clinic. Following are the statistical observations identified during the study: 13 out of 15 patients remains in therapeutic range of INR, 1 out of 15 patients admitted in ER due to bleeding episode, 1 out of 15 patients developed thrombus during the course of treatment and 4 out of 15 patients lost to follow-up to the AC clinic.

**Conclusion/Recommendation:** ACM Clinic has tremendous role in patient clinical care. Proper marketing is required to increase number of patients in the clinic.

**Keywords:** Anticoagulation, Warfarin Therapy, Patient Care

#### 14.15 USE OF TRANSVERSUS ABDOMINIS PLANE BLOCK AS AN ANAESTHETIC TECHNIQUE IN A HIGH RISK PATIENT FOR ABDOMINAL WALL SURGERY

*Samina Ismail, Rizwan Khan, Sana Urooj  
Departments of Anaesthesiology and Surgery,  
Aga Khan University, Karachi*

A 46 year old male, a known case of ischemic heart disease, hypertension, uncontrolled insulin dependent diabetes mellitus, obesity and chronic obstructive pulmonary disease was scheduled for urgent excision of carbuncle of abdominal wall. Ultrasound guided transversus abdominis plane (TAP) block was chosen as a technique of anaesthesia by the authors in view of patient's compromised physiology. Surgery was successfully conducted under TAP block and the patient remained pain free during surgery and in the postsurgical period. We report that TAP block can be effectively used to provide adequate anaesthesia for abdominal wall surgeries, especially in patients with compromised physiology. This anaesthesia can also be extended as a part of postoperative pain control regimen. Ultrasound-guided TAP block holds potential for a safer and effective block in future practice. Future studies are necessary so as to fully understand its potential as a sole anaesthetic technique in non-diabetic patients.

*Keywords:* Transversus abdominis plane (TAP) block, Abdominal wall surgery, Sole anaesthetic Technique

#### 14.16 IMPROVED REPORTING FOR THE DIAGNOSIS OF MULTIPLE SCLEROSIS (MS) USING PAIRED CSF AND SERUM SAMPLES

*Sibtain Ahmed, Aysha Habib Khan, Farooq Ghani,  
Imran Siddiqui, Lena Jafri  
Department of Pathology & Microbiology, Aga  
Khan University, Karachi*

*Background:* Presence of oligoclonal bands in cerebrospinal fluid (CSF) on isoelectric focusing helps in the diagnosis of multiple sclerosis (MS). *Objective:* To determine utility of isoelectric focusing of paired CSF and serum sample in diagnosis of MS.

*Material and Methods:* The laboratory results for CSF oligoclonal bands from 1st June to 22nd August 2013 performed at the clinical laboratory AKUH were reviewed. The oligoclonal bands were tested by isoelectric focusing on agarose gel using interlab CSF isoelectric focusing kit and manual immunoblotting steps to transfer the proteins on transfer membranes. The IgG immunofixation patterns of CSF and serum from the same patient were interpreted by Chemical Pathology consultants. In the first phase, the oligoclonal bands in CSF only were examined by two investigators and findings were noted. In the next phase, the oligoclonal patterns of CSF with serum from the same patient were interpreted as follows: Type1: No band in CSF. Type2: Oligoclonal bands in CSF not seen in the serum (pattern seen in MS). Type 3: Identical oligoclonal bands in CSF and serum (pattern seen in systemic inflammation). Statistical analysis was done by SPSS 19.

*Results:* Seventy one CSF and serum samples were received for oligoclonal bands testing for MS in the laboratory during the three months period. In phase one when CSF gel was examined alone; 35 subjects (49.3%) were found positive for MS. However in phase two 20 subjects (28.2%) actually had intrathecal IgG synthesis as seen in MS. Thus inclusion of serum sample narrowed down the number of false positive cases for MS using CSF samples alone.

*Keywords:* oligoclonal bands, serum, multiple sclerosis

#### 14.17

### CHRONIC PAIN MANAGEMENT: RATIO OF OUTPATIENTS TO INTERVENTIONAL PAIN MANAGEMENT PROCEDURES

*Gauhar Afshan, Naveed Latif, Mohammad Yasir  
Department of Anaesthesiology, Aga Khan  
University, Karachi*

**Introduction:** Interventional pain management (IPM) is relatively a new field with a history of less than 2 decades. It has gained a rapid development over the last 2 decade. According to the medi-care database, from 2000-2008, there was a 9.6% annual average increase of IPM procedures for chronic pain in USA (107% IPM in 2000 to 186.8% in 2008). Department of anesthesiology, Aga Khan University is pioneer in introducing this discipline in Pakistan .Our chronic pain service has been doing common IPM procedures since 1998.The objective of this study is to determine the ratio of outpatient patients visiting pain clinic to IPM procedure done in our pain setup. The result will be used for future strategic planning to cater the expanding growth in this discipline.

**Methodology:** Data of all out patient visited pain clinic and IPM procedures done in OR during 2011-2012 was retrieved from our software programme (installed on Sahl as PMC: Pain Management Clinic System).

**Result:** During our study period a total of 2434 patients visited our pain clinic and 874 IPM procedures (35.9%) were performed. The Procedures were done for both diagnostic and therapeutic indication and included epidural steroid, facet & SI joint, radiofrequency Pulsed treatment of DRG, RF lesioning of trigeminal block, neurolytic celiac, lumber sympathectomy & stellate ganglion blocks, intercostal and other peripheral blocks. The most common intervention was epidural steroid followed by facet and sympathetic blocks

**Conclusion:** Our data constitute the first Pakistani report regarding IPM procedures performed and showed that 35.9% of our patient population required IPM. The present data provides an analysis of the growth of IPM procedure and certainly will help us in setting or expanding Pain clinic setup and interventional pain procedures according to our needs

**Keywords:** Chronic back ache, interventional pain

#### 14.18

### IMPACT OF QUALITY IMPROVEMENT TOOLS IN RESIDENT EVALUATION OF PAEDIATRICS RESIDENCY PROGRAM

*Kashif Karim Ali  
Department of Paediatrics & Child Health, Aga  
Khan University, Karachi*

**Background:** The paediatric residency programme was expanded by incorporating four peripheral hospitals and increasing the number of residents from 31 to 55. The department thus faced new challenges in monitoring the resident's yearly performance which had to be in line with standardized quality measurement tools and techniques. The administration and faculty re-worked the manual practices to measure resident's yearly performance and used the new computerized quality improvement tool which helped evaluation while conveying promotion to next level.

**Method:** Initially we developed quality improvement tool to address the issues. According to the brain storming session feedback of introducing quality improvement tools to monitor resident's yearly performance. A combination of control charts and moving range to standardized competency of residents result sheets was used. Finally we developed flow charts, Cause and Effect and Gantt Charts to layout these sheets as a pilot in year 2012. **Result:** Residents' scores were uploaded and results compiled and generated as predicted. Few minor issues were noted and improved with the help of experts. This practice enabled to reduces Administrative staff and Faculty work, transformed manual practices into computerized and also standardized resident performance through quality improvement tools and techniques.

**Conclusion:** Our experience of introducing Quality Improvement model in evaluating paediatrics resident in residency programme was quite encouraging. The result sheets generated saves administrative and faculty time, rework and reduces cost of quality of department. We recommend this quality model for other department of AKU

**Keywords:** Quality Improvement Tool, Quality Practices, System Improvement



#### 14.19 PILOTING E-LEARNING IN THE PAEDIATRICS RESIDENCY PROGRAM

*Kashif Karim Ali*  
*Department of Paediatrics & Child Health, Aga Khan University, Karachi*

*Background:* The pediatric residency programme was expanded by incorporating four peripheral hospitals and increasing the number of residents from 31 to 55. The department faced multiple issues in organizing educational sessions for residents at main and periphery centers and ensuring presence of all residents. Administrative staff was all the time engaged in coordination with off-campus residents regarding their availability. Arrangement of transport along with supervising logistics of the sessions was extremely difficult.

*Method:* A quality improvement tool was developed to identify the issues and find solutions to address the problems. The feedback of the brain storming sessions suggested introduction E-Learning sessions for these centers so that they all will be connected online at the same time from their centers. This was agreed upon and WEBEX was identified as a tool by IT for establishing this link with main and all 04 periphery centers Administrator was done and finally we developed flow charts, cause and effect and Gantt Charts to layout future plans.

*Result:* WebEx was piloted from the main campus and all residents at 4 off campuses were connected. Session were shared successfully with all residents the voice quality of the presenter and the moderator was satisfactory and the video of the presenter was of adequate quality. However, interaction and question and answers with the off campus were also adequate.

*Conclusion:* Our experience of introducing E-Learning in pediatrics residency programme was quite encouraging. This system will save the travelling time of residents and reduce the burden of the administrative staff. We recommend e-learning at AKU

*Keywords:* E-Learning, Information Technology in Education, Impact of Distance Learning

#### 14.20 EFFICACY AND SAFETY OF LIPOMODELLING AND ADRC- MEDIUM TERM FOLLOW

*Lubna Noor, Pud Bhaskar, Colm Hennessy*  
*Department of Surgery, University Hospital of North Tees*

*Background:* Past and current literature support Lipomodelling as a tool for breast reconstruction. Lipomodelling with Adipose tissue Derived Regenerative Stem Cells(ADRC) dramatically improves the graft survival through both adipogenesis and angiogenesis. Literature regarding safety of this procedure for breast reconstruction is limited. Our aim was to assess the safety and efficacy of ADRC-enriched fat grafts for breast reconstruction. *Material & Methods:* A prospective study from September 2008 – April 2012 at a District General Hospital UK. The indications and the fat grafting procedures used were analyzed (Cytori Celution 800/CRS or Cytori pure graft system). Patients with benign indications were followed for 1 year and those with cancer were followed for 5 years according to regional guide lines.

*Results:* Out of total 50 patients, 10 had benign diagnosis while 40 had breast cancer treatment. 30 patients had correction after breast conservation, 17 revision of reconstruction (8 TRAM, 4 LD and 5 implant) while 3 had other procedures. 19/40 had history of breast irradiation. Median age was 52 years (18-72 years). ADRC enriched fat grafting was done in 40 and pure graft in 10 patients. Graft volume injected 80-420 mls (average 247 mls). 90% patients are satisfied with outcome, only 4 had noticeable fat resorption, 4 needed further surgery. At follow up of 21 months (1-48 months) no significant complications were seen. No patient had local recurrence, although 4 developed metastatic disease.

*Conclusion:* We found it a useful safe and effective technique for breast reconstruction with high patient satisfaction. We recommend a central database to substantiate these finding

*Keywords:* Fat Grafting, breast cancer, ADRC

#### **14.21** QUALITY IMPROVEMENT PROJECT IN THE LIGHT OF SHEWHART CYCLE: STUDENT LED PROJECT

*Mehtab Qutbuddin Jaffer*  
School of Nursing & Midwifery, Aga Khan  
University, Karachi

*Introduction:* In the curriculum of Masters of Science in Nursing (MScN) program of the Aga Khan University, School of Nursing & Midwifery (AKU-SoNaM), advanced specialty practicum is the part of graduate study curriculum in which students got the opportunity to work with the expert preceptors. This provides student a learning platform and opportunity to develop, implement, and evaluate project in their practicum work settings under the guidance of their faculty and preceptors.

*Objective:* The aim of this paper is to share the MScN student's project conducted during the practicum period of January-March 2013. The objective of this project was to observe the medication administration practices using standard precautions among health care providers (HCPs) at the tertiary hospital, Pakistan.

*Method:* In this project, data was collected through observations. This project followed Shewhart cycle of quality improvement. The Plan-Do-Study-Act (PDSA) model was used as a framework for this project. PDSA model uses four cyclical steps for continuous quality improvement. PDSA is a continuous quality improvement step-by-step framework that can promote leadership to successfully implement and sustain change in a practice (Stikes & Barbier, 2013). The pattern of this paper comprises of project aim, methodology, findings, conclusion, and finally recommendations.

*Conclusion:* Based on the PDSA model, strategies and recommendations at government level is corroborated.

*Keywords:* Quality Improvement, Practices among health care providers, Standard precautions AND health care providers

#### **14.22** RADICAL PROSTATECTOMY REPORTING: LIFE MADE EASY WITH WHOLE MOUNT TECHNIQUE

*Mohammad Adil Akber, Fahmida Sheikh, Shahid Pervez*  
Aga Khan University, Karachi

Whole mount processing is more demanding in terms of technical skill than routine sampling of radical prostatectomy specimens. Facility of whole mount is also not widely available in Pakistan. However it's utility particularly in radical prostatectomy specimens is of paramount use. In this study we compared whole mount radical prostatectomy sampling with previously done routine whole prostate sampling in terms of number of blocks being processed, technologist and pathologist time and cost. A total of 68 radical prostatectomy specimens were included in the study split in two groups i.e. 34 with whole mount technique and 34 with routine sectioning received in the section of Histopathology Aga Khan University Hospital Karachi. In whole mount specimens average numbers of blocks were 18.47 (Range 14-22) by sampling the whole specimen. In contrast average number of blocks with routine sampling of whole specimen stood at 55.17 (range 38-76). For pathologists screening of whole mount slides took on an average 15 minutes compared to 45 minutes examining routine slides. Whole mount radical prostatectomy technique was far superior than routine sampling in terms of much less number of blocks, resulting in less cost as well as about 1/3rd of technologist's and pathologist's precious time.

*Keywords:* Radical Prostatectomy, Whole Mount, Reporting

#### 14.23

### TO EVALUATE EFFECTIVENESS OF MORE DILUTED IV GEMCITABINE SOLUTION ON INFUSION RELATED PAIN SCORE AND PATIENT COMFORT LEVEL DURING CHEMOTHERAPY

*Nadia Ayoub, Salwa Ahsan, Latif Sheikh, Sarfaraz wali*  
*Department of Pharmacy, Aga Khan University, Karachi*

**Objective:** In AKUH lot of patients get gemcitabine treatments. It was observed by our pharmacist that common complain encountered by patient is pain at injection site which was reported in almost 85% patients. Primary aim is to reduce injection site pain improving patient safety. Secondly to ensure termination of infusion within 30 min to limit prolonged infusion related toxicity.

**Methodology:** Oncology pharmacist did extensive literature review which showed gemcitabine can be diluted in range of 0.1-10 mg/ml (arm 1). Previously our pharmacy diluted gemcitabine in range of 9-10 mg/ml NS0.9%. We analyzed 105 patients to determine the impact of variable concentration on pain level. In first phase pharmacist increased dilution and prepared gemcitabine in range of 6-7 mg/ml (arm 2) for 2 months then it was gradually increased to 3-4mg/ml (arm 3) for next two months. Data regarding injection site pain collected for each arm and impact on pain scale is analyzed.

**Result:** Pre implementation data revealed average pain score of 8.2 in arm 1. While in arm 2 average pain score was 4.5 which was further decreased in third arm i.e. <1 (P value = 0.03). This was further confirmed by Numeric Pain Scale (1-10) scoring by nurses and patients' verbal feedback on their increased comfort level during Gemcitabine infusion.

**Conclusion:** Based on data least pain was encountered with gemcitabine concentration of 3-4 mg/ml. Our data revealed that more diluted solution of gemcitabine is associated with better patient comfort level allowing easy administration within time limit i.e. 30 min.

**Keywords:** gemcitabine, injection site pain, patient safety

#### 14.24

### TREATMENT OF SEPTIC WOUNDS USING ULTRAVIOLET LIGHT EXPOSURE: A CASE REPORT

*Numra Abdul Aleem, Moaz Aslam, Mohammad Faizan Zahid, Arshalooz Jamila Rahman, Mohammad Fazl Ur Rehman*  
*Departments of Paediatrics & Child Health and Surgery, Aga Khan University, Karachi*

**Case Summary:** A 9 year old girl presented with complaints of fever and pain in burn wounds with deteriorating health for one month. According to Lund and Broder's chart, burns spanned the posterior trunk (13%), right arm (1.5%), left arm (1.5%), and buttocks (2.5%). The wounds showed improper healing. She had previously undergone split-thickness skin graft(STSG) procedure using skin harvests from thighs and antimicrobial therapy with vancomycin, flucanazole and colomycin. Analgesia was administered. Blood and tissue cultures of the burns indicated polymicrobial wound infection and sepsis, including methicillin resistant Staphylococcus aureus(MRSA), Klebsiella pneumoniae and Pseudomonas aeruginosa. Despite broad-spectrum antibiotics, fever persisted and condition deteriorated. Antifungals were also administered with no clinical improvement. Eventually an STSG procedure was done to provide fresh grafts. In due course, ultraviolet(UV) light exposure, of wavelength 32-40 Nm/W/cm<sup>2</sup>, was considered for treatment. In prone position, the wounds were exposed to UV phototherapy 6-8 hours daily for 8 days. Eventually, wound healing and sepsis improved. Antibiotics were optimized and high protein diet was started. Eventually the wounds showed fresh margins and visible signs of healing. The patient was subsequently and advised to shower, changes bandages using acetic acid and follow up regularly.

**Conclusion:** UV light shows great prospect as a supplementary treatment coupled with antibiotics in dealing with infected wounds. Yet great amount of research and human clinical trials are still needed to formulate a proper pharmacological and therapeutic algorithm for its medical application

**Keywords:** Septic wounds, Ultraviolet light exposure, Treatment

#### 14.25

AN EXPERIENCE OF SUCCESSFUL PILOT PROJECT OF AUTOMATED MEDICINE DISPENSING SYSTEM TO IMPROVE PATIENT SAFETY, FIRST TIME IN EMERGENCY DEPARTMENT (ED) OF A TERTIARY CARE HOSPITAL, PAKISTAN.

*Perveen Feroza, Sheikh Abdul Latif, Raza Syed Shamim, Akram Aisha, Zainab Gulam, Khan Sumaira, Mazher Haris*  
*Department of Pharmacy, Aga Khan University, Karachi*

*Introduction:* Aga Khan University Hospital (AKUH) is ISO (9001-2008) and JCIA Accredited tertiary care hospital of Pakistan. Emergency room pharmacy (ERP) deals with all emergency patients 24/7. Since last few years, ED volume has grown in double figures. It is a big Challenge to dispense medicines to large number of patients quickly with accuracy. In this case, automated dispensing system could play a pivotal role, wherever medications are stored and dispensed with proper documentation, making the pharmacist free to get engaged in clinical activities.

*Method:* A pilot project of automated medicine dispensing trolley was run in ED from Jan 2012 till 15th Feb 2012 after proper training to all ED staff. In total four trolleys were placed in different areas (3 in adults and 1 in pediatrics area). It catered the stat orders only. During pilot, pharmacist did daily inventory reconciliation, restocking and resolved discrepancy, if any.

*Result:* AMDS has reduced nursing visit time to ERP for collecting drugs from 12hrs per day to 1.37 hrs. Some functionality was found to be of great importance in curtailing errors. The project was successfully completed with assurance of patient safety.

*Conclusion:* AMDS in ED is quite a useful tool provided that the lapse time in dispensing at nursing end is controlled by proper data analysis and implementing solution. AMDS is helpful in reducing errors, improving quick and safe drug delivery at patient's bedside and saving both the pharmacist's and nursing staff time.

*Keywords:* Automated medicine dispensing system, Improving quick and safe drug delivery, Reducing reducing errors

#### 14.26

LASER CAPTURE MICRODISSECTION

*Sadia Habib, Zulfiqar Naqvi, Anwar Siddiqui, El-Nasir Lalani*  
*Research Office, Departments of Pathology & Microbiology and Biological & Biomedical Sciences, Aga Khan University, Karachi*

Molecular profiling (at genomic and proteomic state) of a pure cell population is essential for correlating molecular signatures in diseased and disease-free cells. However, the heterogeneity of tissue can affect the outcome and interpretation of molecular studies. Recently, Laser capture microdissection (LCM) has proven to be an excellent tool for isolating highly pure cell populations from heterogeneous tissue section, cytological preparation or live cell culture under microscopic observation by mean of a highly focused laser beam. Specifically, direct microscopic visualization of the cells permits the selection of different region of a tumor as well as microenvironment structure. LCM is based on the adherence of visually selected cells to a thermoplastic membrane, which overlies the dehydrated tissue section and is focally melted by triggering of a low energy infrared laser pulse. The melted membrane forms a composite with the selected tissue area, which can be removed by simple lifting of the membrane. Thus LCM is the only present technology that can isolate a homogeneous population of cells without perturbing the molecular state of the cells and does not damage the morphology of surrounding cells. The isolation of single cells is unique and highly useful tool in a wide range of research and clinical applications, including individual cell analysis, clonal expansion and stem cell research. Technologies of LCM vary and have tradeoffs for different application. The benefit is an increase in reliability, effectiveness and accuracy of research.

*Keywords:* LCM, molecular profiling, heterogeneous tissue

**14.27**  
INTRACORPOREAL KNOTTING OF  
APPENDICULAR BASE, AND APPENDIX  
RETRIEVAL: CAN WE BE MORE  
INNOVATIVE?

*Saqib Hamid Qazi, Ahmad Vaqas Faruque,  
Sohail Asghar Dogar  
Department of Surgery, Aga Khan University,  
Karachi*

*Introduction:* Laparoscopic appendectomy (LA) is one of the most common laparoscopic minimally invasive procedure in children. There is a routine practice to ligate the appendix base with Endo-loop and remove the appendix with Endo - bag. In developing countries like Pakistan, where cost is a major issue, we can decrease the surgical cost of this procedure by doing some innovations in this procedure.

*Objectives:* The aim of the study is to show our results of Intracorporeal knotting of appendicular base and retrieval of appendix in latex glove finger in laparoscopic appendectomy other than classical Endo-loop & Endo bag.

*Material and Method:* A retrospective study was conducted at Aga Khan University hospital, Karachi, Pakistan, in which we have included all cases who underwent LA. Data was searched by a single researcher and we have looked at the outcome in terms of postoperative length of hospital stay, wound infection, postoperative fever and need of redo surgery. In all cases we have done intracorporeal knotting of appendicular base by Vicryl 2.0 (Johnson & Johnson) instead of Endo – loop. Also all appendixes were retrieved in a sterile latex glove finger.

*Results:* There were 25 LP performed by single laparoscopic pediatric surgeon in 1 year. All patients had normal postoperative course, there were no wound infection, and post-operative fever and need of redo surgery. Our average time of surgery is 52+/-20 minutes and postoperative length of hospital stay is 2 – 3 days.

*Conclusion:* Intracorporeal knotting of appendicular base with 2.0 vicryl and retrieval of appendix in sterile latex glove finger is a novel technique and reduces cost. It can be

considered in developing countries where laparoscopic pediatric surgery is growing day by day

*Keywords:* intracorporeal knotting, appendix, retrieval

**14.28**  
PEDIATRIC LAPAROSCOPIC SURGERY:  
ARE WE READY TO ACCEPT THE  
CHALLENGE?

*Saqib Hamid Qazi, Sohail Asghar Dogar,  
Ahmad Vaqas Faruque  
Department of Surgery, Aga Khan University,  
Karachi*

*Introduction:* There is a growing trend towards laparoscopic surgery in children in the world. It is an established fact that laparoscopic surgery offers better results with shorter hospital stay and fewer complications. However, it involves more expenditure. We are sharing our results of laparoscopic pediatric surgery which we have started recently in our hospital, by a surgeon after completing specialized fellowship training in Pediatric Laparoscopic Surgery.

*Objectives:* To see the results of laparoscopic surgery in children MATERIAL AND

*Method:* It's a 1 year audit conducted in Aga Khan University hospital. This is the largest tertiary care private hospital in the cosmopolitan city of Karachi, Pakistan. A Performa was designed and filled after reviewing the medical records, interviewing patients in clinics. Data was entered in Microsoft Excel 2007

*Results:* A total of 30 laparoscopic procedures were performed including laparoscopic appendectomies, laparoscopic cholecystectomies, laparoscopic orchidopexies, laparoscopic diaphragmatic hernia and laparoscopic repositioning of ovaries. We have found significant difference between the numbers of surgeries done laparoscopically and open surgery. The wound complications are less and the hospital stay is shorter. However the total expenditure is more.

*Conclusion:* Laparoscopic pediatric surgery is at a steady rise but still there are some limitations

in accepting the role of laparoscopic pediatric surgery. There is a dire need to realize that minimal invasive surgery will be the future. Trainees must be oriented with the minimal invasive techniques.

*Keywords:* pediatric, Laparoscopy, minimal invasive

#### **14.29** VIRTUAL MICROSCOPY: PROVIDES HIGH RESOLUTION DIGITAL IMAGES USED FOR TRAINING, EDUCATION AND RESEARCH

*Shagufta Naz, Syed Zulfiqar Ali Naqvi, Anwar Ali Siddiqui, El-Nasir Lalani  
Department of Pathology & Microbiology, Aga Khan University, Karachi*

Virtual microscopy (VM) refers to an automated microscopy and digital imaging technology to scan, store, and view high-resolution image from a glass slides into a virtual slide. This virtual slide is saved in a compressed file format providing the same functionality as traditional light microscope slides. VM system allows the user to view a scanned image of the entire slide at multiple magnifications on a computer screen. To fully represent a standard pathology slide, thousands of images are acquired and individual microscopic fields are then stitched together to create a virtual slide. VM provides high-definition scanning with automatic specimen recognition capability which limits scanning to the specimen area with high-level color fidelity and image quality. Virtual-Z scanning function permits focusing a virtual slide up and down through the depth at any region of interest to assess thicker specimens such as cell clusters or cranial nerves. Via simple server, virtual slides are accessible for remote conferencing, collaboration and consultation. This advanced imaging technology is now available at AKU. VM is a promising new tool, which gives a user the feel and simulated experience of an actual microscopic examination and provides a useful alternative to a glass slide. Possible applications include: 1) second opinion consultation without

transporting the glass slide, 2) education, 3) VM proficiency tests / board exams, and 4) telepathology.

*Keywords:* Virtual microscopy (VM), Virtual slide, high-resolution Image.jj

#### **14.31** MODERN MANAGEMENT OF KERATOCONNUS

*Sharmeen Akram  
Department of Surgery, Aga Khan University, Karachi*

Keratoconus is a degenerative disease of the cornea., resulting in progressive decrease in vision. Treatment modalities included spectacles, hard contact lenses and keratoplasty for endstage disease . New treatment modalities include use of collagen crosslinkage for stopping progression of disease. This is combined with use of intrastromal ring segments to improve vision .The latest trend is use of femtosecond laser to create channels with high precision. This makes it easier to put intrastromal rings and also decreases the risk of intraoperative problems related to channel creation by mechanical means.In Pakistan few cases have been done using femtosecond laser to create channels for Intrastromal rings combined with collagen crosslinkage for the treatment of keratoconus. The reason being the availability , cost and few trained Ophthalmologist in this technique. Our case reports the first AKU patient in which this latest technique has been used . Our patient was diagnosed with progressive keratoconus bilaterally and femtosecond laser was used for channel creation for Intra stromal rings , combined with collagen cross linkage, with good post operative.

*Keywords:* Keratoconus, intrastromal rings, management

#### **14.32** EPIPHORA- ARE THE NASOLACRIMAL DUCT OBSTRUCTED? ASSESSMENT BY DACRYOCYSTOGRAPHY.

*Shehzada Karim, Mehrban Ali, Raza Sayani*  
*Department of Radiology, Aga Khan University,*  
*Karachi*

*Objective:* To evaluate the radiological findings on dacryocystogram examination in correlation with clinical presentation.

*Material and Methods:* A retrospective study has been carried out on 90 patients who have undergone dacryocystography (dcg) for epiphora, to assess the role of dcg in their management. 60 patients were requested for bilateral examination and 30 were referred for unilateral examination. All reports were reviewed for the observations and analysed

*Results:* It was found that 18/30 (60%) of patients who were referred for unilateral Dacrocystogram examination were abnormal however 17/60 (23%) patients referred for bilateral examination were abnormal. Most common abnormality detected is obstruction/ structuring at variable levels. Calculi were seen in 5 cases. Abscess was seen in 1 case. Diverticuli were appreciated in 3 cases.

*Impression:* Lacrimal dacrocystography is a valuable tool for diagnosis of obstruction. Unilateral examination appears more symptoms favored and thus yield more positive results.

*Keywords:* Dacrocystography, Epiphora,  
Nacrolacrima duct Obstruction

#### **14.33** USE OF DEXTROSE 25% AS A TRIGGER TOOL TO IDENTIFY HYPOGLYCEMIA RELATED ADVERSE DRUG REACTIONS FROM INSULIN

*Muhammad Zeeshan Khan, Abdul Latif Sheikh,*  
*Salwa Ahsan, Ale Zehra, M. Haris Mazhar*  
*Department of Pharmacy, Aga Khan University,*  
*Karachi*

*Background:* Diabetic patient admitted to hospitals are often managed with insulin for

their glycemic control especially in acute and critical circumstances. ADR trigger tools are clues, list of known adverse events and drugs used to identify adverse drug reactions. Insulins are high alert medication having potential to cause significant patient harm when used in error and several ADRs are reported in literature with its use.

*Objective:* To determine the incidence of hypoglycemia pertaining to insulin use through trigger tool and match this rate with voluntary ADR reportage

*Methodology:* Pharmacy started a retrospective review of patient profile using dextrose 25% for identification of hypoglycemia from May 2013. Data from the record of adverse drug reaction reports, which were reported to drug information, was retrieved. Five months pre and post data comparison was done and hypoglycemia ADR reports were checked and compared.

*Results:* Only 1 (0.8 % of total 121 ADRs) hypoglycemic episode was reported voluntarily prior the use of dextrose 25% as trigger tool from December 2012 to April 2013. In the post usage phase total 8 (6.6 % of total 121 ADRs) hypoglycemia cases were identified and reported which are 6 times more than the traditional reporting.

*Conclusion:* Using dextrose 25% as a trigger tool is an efficient way to identify overdose of insulins in hospitalized patients. There is necessity to monitor hospitalized diabetic patient more closely who are on insulins and doses must be titrated efficiently to control diabetes. Section heads of the specialty will be notified via emails of serious incidences for corrective action. Further using more triggers can help us too.

*Keywords:* Hypoglycemia, ADR, Dextrose 25%

#### **14.34** IMPACT OF MONTHLY FLOOR STOCK INSPECTION BY PHARMACIST TO ENSURE SAFE USE OF MEDICATION WITHIN EXPIRY RANGE IN CRITICAL CARE UNITS

*Muhammad Zeeshan Khan, Abdul Latif Sheikh,  
Salwa Ahsan, Sana Iqbal, Hafsa M. Ashfaq  
Department of Pharmacy, Aga Khan University,  
Karachi*

*Background:* Floor stock system consists of medications which are stored on nursing units that are frequently prescribed or urgently needed. Medications stocked on floor have number of advantages like readily availability of the required drug, eliminating return to the pharmacy and reduction in number of orders. Whereas increase medication error, increased risk of drug deterioration, lack of proper storage etc. are some concerns.

*Objective:* The objective of this review is to evaluate the impact of monthly inspection of medications by pharmacist on floor stocks in critical care units.

*Methodology:* A total number of 36 medications in ICU, 48 in CICU, 29 in NICU and 49 in CCU are stocked on floors and inspected monthly. Inspection data of these critical care units from January to September 2013 was retrieved from inspection record file and checked for observations pertaining to proper storage, stability and expiry dates.

*Results:* Out of the above stocked medications on floors in different critical care units, 29 medicines were having expiry within 1 to 3 months range which were replaced, 13 multidose vials did not have date of opening or first use on them, 3 medicines were present excess in stock, 2 medicines labels were damaged, 1 medicine had misprinted expiry, no expired medicine was present in stock of critical care units.

*Conclusion:* Floor stock inspection is an appropriate method to control inventory of medications on nursing units and ensures that medicines are secured by access to limited personnel only. It is the responsibility and best operates under the supervision of pharmacists,

who ensures the usage of properly stored and stable medications that are not expired.

*Keywords:* Floor Stock, Medication management, Near Expiry

#### **14.35** SALIVARY GLAND CYTOLOGY: DIAGNOSTIC CHALLENGES & HISTOLOGICAL CORRELATION

*Sumbul Waheed, Saira Fatima, Zubair Ahmed,  
Rashida Ahmed, Naila Kayani  
Department of Pathology & Microbiology, Aga  
Khan University, Karachi*

*Introduction:* Salivary gland tumors/swellings account for approximately 3-5% of Head & Neck tumors predominantly benign in nature. Fine needle aspiration cytology (FNAC) is an important diagnostic tool in these cases. A variety of diseases e.g. sialadenitis, acute inflammation and most of the neoplastic lesions can be accurately categorized. However, there are some overlapping cytomorphological features in benign & malignant tumors which can be differentiated on histological evaluation alone.

*Objective:* To evaluate accuracy, sensitivity, specificity of FNAC of salivary gland tumors & their histological correlation.

*Material & Methods:* The study was conducted in section of Histopathology, Aga Khan University Hospital from 2010-2013. All the 577 cases of FNACs reported in parotid & submandibular regions were included. The data included age, sex, site, cytological & histological diagnosis. Histological evaluation was available in 36 cases.

*Results:* There were 577 cases of salivary glands' FNAC. Patients' age ranged from 2- 83 years, females being predominant (53.2%) than males (46.7%). The most frequent pathology was Granulomatous inflammation 23% followed by Pleomorphic adenoma 14%. Malignant cases accounted for approx. 19.5%, included mucoepidermoid, acinic, adenoid cystic & large cell carcinomas. Lymphoproliferative disorders were also included in this group. Histological



correlation was available in 36 cases. Overall Accuracy was 86.1%, Sensitivity 78.5%, Specificity 90.9%, PPV 84.6%, NPV 86.9%. *Conclusion:* Salivary glands cytology is a challenging field of cytopathology, however, diagnostic accuracy, sensitivity & specificity are reliable in the hands of experi

*Keywords:* Salivary glands, cytology, histology

#### 14.36

### MAGNETIC RESONANCE SPECTROSCOPY (MRS) OF ENHANCING CEREBRAL LESIONS: ANALYSIS OF 78 CASES FROM KARACHI, PAKISTAN

*Muhammad Shahbaz Alam, Humera Ahsan, Zafar Sajjad, Umer Bhatti, Ather Enam, Muhammad Wasay*

*Department of Radiology, Neurosurgery\* and Neurology, Aga Khan University, Karachi*

*Objectives:* We investigated the efficacy of magnetic resonance spectroscopy in differentiating various types of neoplastic and non-neoplastic enhancing cerebral lesions.

*Methods:* Seventy eight patients were enrolled in the study that has histologically proven enhancing cerebral lesions. Magnetic resonance spectroscopy (MRS) was performed in all these cases. These lesions were categorized into neoplastic and non-neoplastic lesions on Magnetic Resonance spectroscopy findings and sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) and diagnostic accuracy of MRS was calculated. ROC curve and comparison of mean values of metabolites and their ratios was analyzed using simple "t" test to differentiate neoplastic and non-neoplastic lesions.

*Results:* Sensitivity, specificity, PPV and NPV and diagnostic accuracy of magnetic resonance spectroscopy in differentiating neoplastic and non-neoplastic lesions were 90.16%, 64.70%, 90.16%, 64.70% and 78.20% respectively. Mean values of choline, NAA along with Cho/Cr and Cho/NAA ratio were calculated with significant p value of less than 0.05. ROC curve showed that Cho/NAA ratio of 2.55 and above showed

sensitivity of 70% and 62% in differentiating neoplastic and non-neoplastic lesion. Similarly mean choline value of 1.44 and above demonstrated sensitivity and specificity of 69 and 65% respectively with significant p value of less than 0.05.

*Conclusion:* Magnetic resonance spectroscopy is highly sensitive technique in addition to conventional MR imaging in characterizing and differentiating neoplastic and non-neoplastic cerebral lesions. Mean values of choline, NAA along with Cho/Cr and Cho/NAA ratio shows statistical significance in differentiating neoplastic and non-neoplastic lesions.

#### 14.37

### HIGH THROUGHPUT IHC ANALYSIS USING TISSUE MICROARRAY

*Sadia Habib<sup>1</sup>, Shagufta Naz<sup>2</sup>, S. Zulfiqar Ali Naqvi<sup>2</sup>, Anwar Ali Siddiqui<sup>1,3</sup>, El-Nasir Lalani<sup>1,2</sup>*  
*<sup>1</sup>Research Office, <sup>2</sup>Department of Pathology & Microbiology, <sup>3</sup>Department of Biological & Biomedical Sciences, Aga Khan University Karachi, Pakistan.*

*Background:* Tissue Microarray (TMA) is a new and powerful technology to carry out high throughput analysis of biomarker expression in FFPE tissue samples. It facilitates rapid analysis of multiple markers on an array of samples on single slide.

*Objective:* To carry out high throughput expression analysis of biomarkers on array of tissue samples using automated TMA.

*Methods:* For construction of TMAs; Human (breast and prostate cancer) and animal tissue blocks were used. Using H & E stained slides from breast and prostate cancer blocks, cancerous and normal areas were marked by the pathologist. The marked areas on the slides were matched to the corresponding paraffin blocks and marked using oil pen. Tissue cores were punched from marked area on donor blocks and extracted tissues were inserted into the holes of recipient blocks using Automated TMA. Same strategy was used for construction of animal rat TMA. Recipient blocks were incubated at 60°C for 30 minutes to fix newly inserted tissue cores

followed by embedding. Serial sections of 5 µm were cut. H&E staining was performed after every 10 section and IHC was performed on selected sections by using epithelial membrane antigen (EMA), androgen receptor (AR) and CAM5.2 antibodies.

*Results:* H & E staining of human and rat TMAs revealed good quality of cores throughout the serial sections. Breast cancer TMA showed aberrant cytoplasmic and membranous expression of EMA as compared to normal. Prostate cancer TMA showed nuclear staining of AR whereas luminal cells expressed CAM 5.2.

*Conclusion:* We found specific expression of EMA, AR & CAM5.2 in breast and prostate cancer TMA sections which are comparable to conventional method. It provides economic efficiency in time with more diagnostic accuracy and least requirement of human resource increasing its cost effectiveness.

*Keywords:* Automated TMA, high throughput expression analysis, AR, EMA

#### 14.39

##### VERIFICATION OF PREEXISTING REFERENCE INTERVALS: A SUMMIT SCALED

*Lena Jafri, Imran Siddiqui, Farooq Ghani, Shabnum Khawaja, Aysha Habib Khan  
Department of Pathology & Microbiology, Aga Khan University, Karachi*

*Background:* Reference intervals (RI) by assay manufacturers may not always be appropriate for different locations and patient demographics. However, it is impractical for clinical laboratories to establish RI for every analyte due to financial constraints.

*Objective:* To determine if RI established elsewhere are valid for our population.

*Methods:* A questionnaire was designed to ascertain healthy individuals according to version C28-A3, of Clinical and Laboratory Standards Institute (CLSI) at the Section of Chemical Pathology. An apparently healthy reference population was identified using questionnaire in July 2013. After taking

informed consent; 5 ml blood was taken in gel separator tubes, serum was stored at -40° C until analysis.

Routine chemistries, inflammatory biomarkers, enzymes and lipoproteins in which partitioning of RI was not required were selected. Reeds 1/3 rule was applied to discard outliers. Reference verification test was applied using EP Evaluator version 10. The goal for verifying RI was that at least 90% of observations should be within the claimed RI.

*Results:* A total of 26 participants were included. One subject on multivitamins was excluded. Twenty samples were finally secured and analyzed in batch. Mean age of the reference population was 26.8±7.1 years 75% being males. Five percent results of serum albumin, creatine phosphokinase, phosphate, magnesium, triglyceride, uric acid, and folic acid were outside the RI and 10 % vitamin B12 values fell outside the RI. All the values of sodium, potassium, bicarbonate, chloride, calcium, blood urea nitrogen, direct bilirubin, total bilirubin, total protein, , amylase, lipase, gamma-glutamyl trans peptidase, NT-proBNP, procalcitonin, cholesterol, high and low density lipoproteins were within the defined RI.

*Conclusions:* Reference verification test passed for all the twenty five analytes and based on these findings we can accept manufacturers' recommended RI for our population

*Keywords:* reference interval, enzymes, lipoproteins, population.

#### 14.40

##### AN AUDIT OF UNNECESSARY REPEATED BIOCHEMICAL TESTING IN PATIENTS ADMITTED TO A TERTIARY CARE HOSPITAL

*Hafsa Majid, Lena Jafri, Imran Siddiqui  
Department of Pathology & Microbiology, Aga Khan University, Karachi*

*Background/Introduction:* Unnecessary repeat requesting of tests without proper patient evaluation can make up a large proportion of a laboratory's workload. The cost savings from

reducing unnecessary tests are well documented. Patient safety can be improved by reducing risk of iatrogenic anemia and discomfort due to repeated sampling of blood.

*Objective:* To analyze the cost and turnaround time (TAT) analysis of performing blood urea nitrogen (BUN) and creatinine (Cr) daily in in-patients.

*Methods:* An audit was conducted at section of Chemical Pathology, Department of Pathology & Microbiology AKUH. Aggregate data of inpatients from Internal Medicine ward with repeated samplings for BUN and Cr, in the month of August 2013 was collected. The two consecutive samples with difference of <0.2mg/dl and <0.3mg/dl for BUN and Cr respectively were considered unnecessary testing. Data was analyzed using SPSS 19.

*Results:* Repeated sampling for BUN was done in 195 patients (782 tests). The TAT of BUN analysis done in the lab was 1564 hrs. accounting for the total cost of Rs. 383180. While in 64 patients (166 tests) BUN was repeated unnecessarily with TAT and cost of 334 hrs and 81340 rupees respectively. The average unnecessary cost added to each patient being Rs. 1270.

For Cr repeated sampling was done in 323 patients (1298 tests) done in 2596 hrs for Rs. 713900. While unnecessary testing for Cr was done in 205 patients. Total 734 tests were considered unnecessary with TAT and cost of 1468 hrs and Rs. 403700 respectively. Average cost added to each patient was Rs.1969.

*Conclusions:* This audit shows that the waste of technologists' time and patients finances as a result of unnecessary repeat testing is excessive. We suggest that proper patient evaluation and reviewing the clinical indications before ordering a test can reduce unnecessary repetitive testing

*Keywords:* Testing, inpatients, turnaround time

# **Women & Child Health**

### 15.1 SEXUAL ASSAULT IN WOMEN AND ITS CONSEQUENCES ON WOMEN'S HEALTH

*Afshan Rani, Munira Rupani*  
*School of Nursing & Midwifery, Aga Khan*  
*University, Karachi*

*Objective:* To define sexual assault, its prevalence, impact and consequences on women's health. *Purpose:* To highlight the impact of sexual assault on women's physical, psychological, sexual and reproductive health. *Method:* A systematic review of literature from 6 research articles from 2007-2010

*Result:* It was found that victims can suffer from heavy genital injuries, urinary tract infections, unwanted pregnancy, HIV/AIDS, and other sexually transmitted infections. Survivors of sexual assault are usually be kept alone and rejected by the society, they avoid interactions socially, and also feel hesitate to share their feelings among their family and friends which results psychological complications such as fear, suppression, insomnia and lack of appetite, difficulty concentrating, depression, low feeling of self-worth, risk of suicide, alcohol and drug misuse. Due to gender women's right are mostly violated.

*Conclusion:* Sexual assault is a severe health issue that is disturbing millions of women's lives throughout the world and producing worst effects on the wellbeing in every aspects of health. In these kinds of issues NGO's plays a vital role in supporting such women's whose rights are violated. As a healthcare provider, it is our responsibility to support the survivors of sexual assault in all aspects of health. Nurse can play a dynamic role in educating women's about protecting themselves and to raise their voice against this issue. A counselor nurse can direct affected women's by providing them moral and psychological support.

*Keywords:* sexual assault, women's sexual health, Reproductive health

### 15.2 10 YEARS' EXPERIENCE OF DELAYED PRESENTED ESOPHAGEAL ATRESIA AND TRACHEOESOPHAGEAL FISTULA, MANAGEMENT AND OUTCOME IN A THIRD WORLD COUNTRY

*Ahmad Vaqas Faruque, Muhammad Arif Mateen*  
*Khan, Saqib Hamid Qazi, Sohail Asgar Dogar*  
*Department of Surgery, Aga Khan University,*  
*Karachi*

*Introduction:* Congenital esophageal atresia (EA) with and without tracheo-esophageal fistula is one of the challenging problems of newborn, with excellent outcome in developed countries. However situation is different in developing nations with limited resources. *Objectives:* The study aims to analyze results of congenital esophageal atresia repair with and without tracheo-esophageal fistula referred to Aga Khan University Hospital from other medical facility.

*Material and Methods:* A retrospective study of 10 years' duration was conducted at Aga Khan University Hospital. Our Inclusion criteria was all cases transferred to Aga Khan University Hospital from other medical facility after 24 hours of birth without primary diagnosis. We have excluded cases who were referred to us after primary surgery or cases born in Aga Khan University hospital. According to our inclusion criteria, 28 children were enrolled. Data has been analyzed on SPSS.

*Results:* There were 18 males and 10 females. No antenatal ultrasound were done before presentation. 17 were full term neonates. The median birth weight was 2.1 kg. Most common types of fistula was type C, 25 (88%) followed by type A, 2 (7%) and type E, 1 (4%). 05 neonates had long gap atresia, all of them had stage repair. There was only one case of mild anastomotic leak which was managed conservatively. 4 neonates had anastomotic narrowing on contrast study out of them 3 required dilatation. Our average length of NICU stay was 8 days. There were 2 mortalities secondary to severe sepsis due to bilateral pneumonia.

**Conclusions:** We, as third world nation, have serious limitations due to poor health care antenatal services.

In spite of all these limitations the outcome of our cases is not far from that mentioned in literature

**Keywords:** Delayed presentation, Esophageal atresia, Third world country

### 15.3

#### ABERRANT RIGHT SUBCLAVIAN ARTERY – A RARE CAUSE OF FEEDING AND RESPIRATORY DIFFICULTY.

*Ahmad Vaqas Faruque, Zafar Nazir  
Department of Surgery, Aga Khan University,  
Karachi*

Two cases of dysphagia and dyspnea due to compression by an aberrant right subclavian artery is presented. As the primary pathology is very diverse so usually for diagnosis CT scan with 3 – D reconstruction is a suitable alternative method of visualizing the vascular ring. Introduction An aberrant right subclavian artery (ARSA) is a rare anomaly with a reported incidence of 0.1% in non cardiac patients (1). Usually the aberrant artery follows a retro esophageal course and cause tracheal and esophageal compression. Majority of patients with an ARSA are asymptomatic; however, progressive dysphagia develops occasionally (2). Children can present with recurrent attacks of pneumonia or respiratory distress. It may be due to relative laxity of trachea which were passing near by (2). We are reporting two cases of ARSA who presented with difficulty in feeding and recurrent respiratory tract infections and highlight the difficulty in diagnosis and management. Conclusion Dysphagia lysoria is rare clinical diagnosis. It should be suspected in children presented with difficulty in feeding with history of recurrent respiratory tract infection. There should high index of suspicion for the timely diagnosis otherwise it can be missed. CT scan angiogram is the gold standard of choice for diagnosis of this rare anomaly.

Reference 1. Zapata H, Edwards JE, Titus JL. Aberrant right subclavian artery with left aortic arch: associated cardiac anomalies. *Pediatr Cardiol* 1993; 14: 159–161 2. Epstein DA, Debord JR., Abnormalities associated with aberrant right subclavian arteries-a case report. *Vasc Endovascular Surg.* 2002 Jul-Aug; 36(4):297-303.

**Keywords:** Dysphagia lysoria, aberrant right subclavian artery, Retro esophageal

### 15.4

#### KNOWLEDGE, ATTITUDE AND PRACTICES OF MOTHERS ABOUT FEVER IN CHILDREN BETWEEN 1 AND 8 YEARS OF AGE

*Ali Syed Muhammad Akhtarul Hassan, Wajiha Naz  
Department of Paediatrics & Child Health, Ag  
Khan University, Karachi and Dow University  
of Health Sciences*

**Introduction/Objective:** A large proportion of population has inadequate knowledge, unrealistic beliefs and fears about fever in children. This leads to undue stress amongst parents and unwarranted OPD/ER visits. Knowing the level of knowledge, attitude and practices in mothers regarding fever will help health-care providers plan interventions and tailor community education programmes to avoid unnecessary health-care encounters due to parental anxiety and fear.

**Methods:** The study was conducted in out-patient clinics being run by AKUH, Karachi. It enrolled mothers of children aged between 1 and 8 years visiting clinics with history of fever in past week. A pre-structured questionnaire was administered and data was recorded regarding maternal knowledge, attitude and practices regarding fever.

**Results:** Half of mothers defined fever correctly. Only 4% had adequate knowledge about the etiology of fever. Most mothers had inappropriate attitudes regarding fever. Forty-one percent of mothers had correct practices to measure and manage fever. There was no

correlation between maternal age or educational status with attitude and ironically towards knowledge about fever. However strong ( $p$ -value $<0.05$ ) association exists between maternal educational status and correct practices. *Conclusions:* There is dearth of knowledge amongst mothers about the definition of fever. Majority have inappropriate attitude towards fever and wrong practices to measure and manage fever. We recommend introduction of community education programmes to increase the awareness amongst the general public about the definition of fever and its management. Further studies on this subject with larger sample are needed.

*Keywords:* knowledge, fever phobia, children

### **15.6** DOMESTIC VIOLENCE AMONG FEMALE HEALTHCARE PROVIDERS: A LITERATURE REVIEW IN PAKISTANI CONTEXT

*Azmat Jehan Khan, Rozina Karmaliani, Tazeen Saeed Ali, Nargis Asad, Farhana Madhani  
School of Nursing & Midwifery and Department  
of Psychiatry, Aga Khan University, Karachi*

A systematic review has been done to estimate the prevalence of domestic violence among married female healthcare providers within the Pakistani context. Reviewed the international and national published literature on domestic violence during the years 1983 to 2011 was analyzed and scrutinized. The searched result based on 250 published articles in English language from which finally 54 articles were selected to review. The key words used were domestic violence and healthcare providers, married female and domestic violence, and types of domestic violence in Pakistan. Of the total 54 reached articles revealed that worldwide DV prevalence is ranged of 10%-69% however, in Pakistan it is 30% to 79%. Verbal violence is the most common type of DV which further leads to other form of DV such as emotional, physical, and sexual violence. Internationally, very limited researches were available on DV among women

healthcare providers but, not research was found in the Pakistani prospect. Our literature review reveals that globally women are significantly experiencing in a large proportion with domestic violence and verbal violence in more common. Further research is also needed in this regard especially on the ground of DV among healthcare providers.

*Keywords:* Domestic violence, married female healthcare providers, Pakistan

### **15.7** LIFETIME PREVALENCE OF EMOTIONAL/PSYCHOLOGICAL ABUSE AMONG QUALIFIED FEMALE HEALTHCARE PROVIDERS

*Azmat Jehan Khan, Rozina Karmaliani, Tazeen Saeed Ali, Nargis Asad, Farhana Madhani  
School of Nursing & Midwifery and Department  
of Psychiatry, Aga Khan University, Karachi*

The purpose was to determine the lifetime prevalence of emotional/psychological abuse among married female healthcare providers in tertiary care hospitals in Karachi, Pakistan. A descriptive cross-sectional study was conducted on in a sample of 350 married female nurses and doctors, from three tertiary healthcare hospitals (one public and two private). The self administered modified truncated WHO Multi-country questionnaire was used. Descriptive and univariate analysis was performed. Of the total sample of 350 female married healthcare providers, 97.7% ( $n=342$ ) were reported with one or more forms of domestic violence (DV) at some point in their married life, whereby 62.6% ( $n=214$ ) lifetime prevalence of emotional abuse was found due to any form of violence. The univariate analysis showed that those female who had done their diploma were more prone to emotional abuse 46.7% ( $n=100$ ) and, nurses experienced more emotional abuse 57.9% ( $n=124$ ) in their life than doctors. There was a significant difference of emotional abuse among those participants' husband who used alcohol ( $p=0.009$ ). The most common responses against emotional abuse were: 62% ( $n=212$ ), verbally

fighting back, 15.2% (n=52) keeping quiet, 27.2% (n=93) talking to husband, family/friends, and 5.8% (n=20) attempting suicide. DV leads to emotional scars and should be considered as an inhuman act. Its prevalence exists in every culture but more in underdeveloped, economically challenged cultures. It is frequent among nurses. Socio-demographic factors of women have been identified as risk factor. Future research should investigate emotional abuse patterns in not only for professional women but also for housewife

*Keywords:* Domestic violence, married female healthcare providers, emotional abuse,

### 15.9 UTERINE FIBROID EMBOLIZATION FOR SYMPTOMATIC FIBROIDS; CORRELATION OF MID-TERM CHANGES IN DISEASE-SPECIFIC SYMPTOMS AND MAGNETIC RESONANCE IMAGING RESULTS AT A TEACHING HOSPITAL IN KENYA.

*John K. Mutai*  
*Department of Radiology, Aga Khan University, Nairobi*

*Background:* Uterine fibroid embolization, though a widely available option in high income countries in managing symptomatic fibroids is relatively new in the East African region. It is currently offered at only one tertiary facility for the past three years. The symptom and radiological response in these patients, who literature suggests may have bigger fibroid burden and worse symptoms, is the subject of this study.

*Objective:* Characterization of MRI imaging features in women undergoing uterine fibroid embolization and identification of clinical correlates in an African population.

*Methods:* Patients with symptomatic fibroids who are selected to undergo UFE at the hospital formed the study population. The baseline MRI features, baseline symptom score, short term imaging outcome and mid-term symptom scores were analysed for interval changes. Assessment

of potential associations between short term imaging features and the mid-term symptom scores were also done.

*Results:* UFE resulted in statistically significant reductions ( $P < 0.001$ ) of dominant fibroid and uterine volumes and in symptom severity scores of 43.7%, 40.1% and 37.8% respectively. Strong enhancement at baseline was a strong predictor of response to UFE. 59% of respondents had more than ten fibroids. The predominant location of the dominant fibroid was intramural. No statistically significant association was found between clinical and radiological outcome.

*Discussion:* UFE is a new treatment option for treatment of uterine fibroids in Kenya. This study was aimed at assessing outcomes to this treatment option compared to other parts of the world. The response of uterine fibroids to embolization in the African population is good but not different from findings reported in other studies in the West. The presence of multiple and large fibroids seen here is consistent with the case mix described in studies of African-American populations. No significant association is seen between radiological and clinical outcomes to UFE.

*Conclusion:* UFE treatment for fibroids has good outcome. Further studies lasting beyond one year are indicated for further detailed outcome in the local African population.

*Recommendations:* Patient counselling should emphasise the independence of volume reduction and symptom improvement. Volume changes are of relevance for the Radiologist in aiding understanding of the evolution of the condition and identifying potential technical treatment failures but should not be the main basis of evaluation of treatment success.

*Keywords:* UFE, African population, imaging and clinical response



### 15.10

#### A CROSS-SECTIONAL SURVEY OF KNOWLEDGE, ATTITUDE & PRACTICE OF EMERGENCY CONTRACEPTION AMONG FEMALE UNIVERSITY STUDENTS OF DAR-ES-SALAAM, TANZANIA

*Malika Taufiq*

*Department of Family Medicine, Aga Khan University, East Africa*

**Background:** Unsafe abortions are higher among young women in Tanzania and use of emergency contraception (EC) would significantly reduce abortion rates. Most studies from neighboring African countries such as Uganda and Nigeria showed poor knowledge and practice of EC among young women.

**Objective:** To determine knowledge, attitude and practice of EC among female university students of Dar-es-Salaam and to determine socio-demographic factors associated with it

**Methods:** A cross-sectional survey was conducted between October-December 2011 among 427 female students over age 18 and above from two universities in Dar-es-Salaam by using convenient sampling technique. A twenty-eight item self-administered questionnaire consisting of close-ended questions were used for data collection. Questionnaire was translated in both English and Kiswahili languages

**Results:** Mean age of students were 22 years, majority were hostelite(62%), single(92%), without any children(91%), Christian(76.8%) and financially dependent(79.4%). Ninety-three percent participants had ever heard of EC but only 9.4% knew correct time frame of its use. Fifty-one percent of female students were sexually active but only 12.5% had ever used EC. The main source of information of EC was TV/Media(69.9%), friends(48.7%), family(19.4%) and family planning center(19.3%). Most sexually active female consider EC as a safe method ( $p<0.001$ ) and they would recommend EC to friends/family ( $p<0.001$ ). EC use was significantly associated with higher age ( $p=0.004$ ) and being married ( $p=0.004$ ).

**Conclusion:** We conclude that Knowledge, attitude and practice of EC among female university students of Dar-es-salaam is inadequate and there is a need to improve awareness of EC among them.

**Keywords:** Emergency contraception, knowledge, practice

### 15.12

#### ULTRASOUND IS THE MODE OF CHOICE TO DIAGNOSE THE CESAREAN SCAR ECTOPIC PREGNANCY IN FIRST TRI

*Mumtaz Malik, Sidrah Nousheen*

*Departments of Radiology and Obstetrics & Gynaecology, Aga Khan Hospital For Women & Children, Kharadar*

**Objective:** The role of First Trimester Ultrasonography in the early detection of cesarean scar ectopic pregnancy [CSEP].

**Introduction:** Incidence of ~ 1: 1800 - 2200 pregnancies [1,2], early diagnosis with an ultrasound scan can offer treatment options capable of avoiding uterine rupture and haemorrhage, and hence preserve the uterus. Sonography Criteria: 1. The sonographic examination by TAS, TVS & DS. 2. Views are obtained of the uterus, Ovaries, Endometrium & adnexal regions in the sagittal and transverse orientations. 3. An empty endometrial cavity. 4. Development of the GS in the Previous caesarian uterine scar in the myometrium & a thin rim of myometrium is presence at b/w UB & GS [Take measurement of myometrial thickness],while Perimetrium is seen intact. 5. If a CSEP is visualized, take measurement of Gestational sac, Yolk Sac & CRL & recording the fetal cardiac activity. 6. CDI shows Hyper-vascularity at around the Gestational Sac.

**Case Discussion:** A 22-years old gravida 3 Para 1[LSCS]+1[D&E] presented to our ultrasound clinic, AKHWCK, at 6weeks amenorrhea with lower abdominal pain . TVS revealed a gestational sac 15.9 mm with regular yolk sac and alive fetal pole, located in previous scar line in myometrium suggesting interstitial pregnancy with Serum beta-hcG was 12,040 mIU/mL.

There was no adnexal mass or fluid in the Pouch of Douglas. This particular patient was managed by injection methotrexate. After 03 doses of MTX, Repeat TVS shows gestational sac of 9 weeks with decidual reaction and entering into endometrial cavity .After 05 doses of MTX, Patient was admitted for surgical intervention and ultrasound guided evacuation of uterus was succ

*Keywords:* csep :cesarean scar ectopic pregnancy, gs: gestational sac:, ris: radiology information system.

### 15.13 SONOGRAPHIC DIAGNOSIS OF HEMATO-COLPOS DUE TO IMPERFORATE HYMEN

*Mumtaz Malik, Sidrah Nousheen, Maria, Samina, Sunita, Nusrat, Rashid Mughal*  
*Departments of Radiology and Obstetrics & Gynaecology, Aga Khan Hospital For Women & Children, Kharadar*

*Objective:* A Case Report of a “14 years girl with imperforate hymen”diagnosed by Trans abdominal Sonography in Radiology Department at Aga Khan Hospital for Women & children, Kharadar.

*Introduction:* Imperforate hymen is likely the most frequent obstructive anomaly of the female genital tract, but estimates of its frequency vary from 1 case per 1000 population to 1 case per 10,000 population.

*Description:* A girl of 14 years with complains of primary Amenorrhea associated with lower abdominal [perineal region] pain since last few months [off & on i.e. cyclical pain]. She was stable vitally & well oriented with time and Space. On Examination: secondary sex characteristics are noticed ,Membrane in front of vagina & thick hymen .P/R: Swelling felt on anterior vaginal wall. Ultrasound reveal the an oblonged shaped cystic area with fine echoes are floating in it ,resembling the Blood collection in Vagina ,measures 101.4 x 42.9 x 50.7 mms with 196.2 mls of volume, all above finding suggestive of Hemato-colpos. Normal size uterus with midline Endometrium. Normal

Ovaries. Cervix appears normal and therefore plays a crucial role in the diagnosis of hemato-colpos. Other relative investigation were done includes IVP, Which was normal. Planned “Cruciate incision on hymen” [Repaired of Hymen] was done. She was discharged in stable condition. Post-operative follow up was done after First cycle for 04 days and second follow up after 04 regular cycles.

*Recommendation:* Routine examination of the female genitalia by primary care clinicians during childhood is strongly recommended so that genital abnormalities can be diagnosed early.

*Keywords:* Sonography for Imperforate hymen, Primary Amenorrhea, Cyclical Lower abdominal Pain.

### 15.14 MISSED DIAGNOSED / UN-DIAGNOSED ECTOPIC PREGNANCY” IS A “SILENT KILLER OF A MOTHER

Mumtaz Malik, Maria

*Department of Radiology, Aga Khan Hospital for Women & Children, Kharadar*

*Objective:* To assess the “accuracy of First trimester Ultrasonography” in the early detection of ectopic pregnancy & also confirmed the diagnosis made by ultrasonography on Laparotomy, Histopathology reports & SBHCG Value. The basic theme behind this study was to calculate the total number of Missed Diagnosed cases of ectopic pregnancy and its outcome [measure] in term of Maternal Mortality Rate [MMR] & our proposed Target was 00.00%, therefore it is our basic purpose to diagnose 100% cases of ectopic pregnancy with the help of ultrasound [accompanied with SBHCG Level], so inversely proportionally will achieve 00.00% of Missed diagnosed cases of ectopic.

*Introduction:* Incidence of ectopic 1.3 /100 reported pregnancy at Hospital based during 1997 to 1999 in Pakistan [3].

*Methodology:* Retrospective analytic study was conducted at Radiology Department, Aga Khan Hospital for Women and Children, Kharadar

during 1st July, 2012 to 30th June, 2013. □The sonographic examination by TAS, TVS & DS. Views are obtained of the uterus, Ovaries & adnexal regions in the sagittal and transverse orientations. If an EP is visualized, it should be measured in two or three dimensions. Endometrial stripe thickness measures A/p diameter. CDI shows more prominent “ring of fire” to the corpus luteum than to the ectopic pregnancy. To visualize Haemoperitonium in patient with ruptured ectopic pregnancy.

*Results:* 5631 cases of patients underwent FTS. The incidence of EP was 0.372% & 0% Maternal Mortality Rate was recorded in this study.

*Conclusion:* Efficacy of Ultrasonography was >90% in early detection of ectopic pregnancy in this study.

*Keywords:* Ectopic Pregnancy, Mode of Choice: Sonography, Missed Diagnosed Cases Of Ectopic Pregnancy.

### 15.15

#### THE ROLE OF BREAST ULTRASONOGRAPHY [BUS] IN BREAST CANCER SCREENING

*Mumtaz, Malik, Maria, Jahangir Malik  
Department of Radiology, Aga Khan Hospital  
for Women & Children, Kharadar*

*Objective:* Ultrasound is an effective screening tool in the early detection of Lesion in breast and primarily useful for differentiating Solid, Cystic and Complex mass with or without Microcalcifications.

*Introduction:* Breast cancer is the second leading cause of death for women worldwide [1]. BUS images can discriminate benign and malignant masses with a high accuracy [2,3].

*Methodology:* Retrospective- analytic study was conducted at Radiology Department AKHWC, Kharadar during July 2012 to June 2013. Data were collected from PRR, RIS, MR files & ODS. Sonography Criteria: BUS should be performed systematically using a combination of longitudinal, transverse, radial, anti-radial and

coronal scans planes in order to detect pathological findings should involve assessment of: Size, Shape, Outline, echotexture, Posterior and edge through-transmission. Mobility and compressibility, adjacent tissues. Examination should be extended to axilla.

*Results:* 137 [100%] patients underwent BUS. The incidence of breast pathology was observed in 36 [26.27%] patients in this study. In which three cases [2.2%] were diagnosed as a cancer, result was confirmed by mammography & biopsy & patient took chemotherapy, while Thirty-three [24%] cases of benign pathology were detected; including seven were diagnosed as an abscess. Nine were fibroadenoma. one was simple cyst, one was Lipoma, two were sebaceous gland abscess. Seven cases of engorged breast of lactating mothers. Nine patients had Enlarged LN in axilla.

*Conclusion:* Early detection of lesion in breast by ultrasound to save the women's live & to reduce the 40% death rate of women [4].

*Recommendation:* It is essential to establish the basic breast screening unit in Women Colleges, Universities & Women Hospital

*Keywords:* breast ultra-sonography [bus], breast cancer, In: lymph node

### 15.17

#### MATERNAL AND FETAL OUTCOME IN PREGNANT WOMAN WITH HEPATITIS E

*Tahira Naru, Farheen Yousuf, Sumaira Naz  
Department of Obstetrics & Gynaecology, Aga Khan University, Karachi*

*Abstract:* Hepatitis E virus (HEV) is the most frequent cause of acute hepatitis but it is usually a self-limiting disease with low rate of fulminating hepatic failure (FHF). However, in pregnancy, it can cause severe FHF and death in significant proportion of the patients in 2nd and 3rd trimester. In contrast, reports from developed countries have shown that the course and severity of viral hepatitis during pregnancy is not different from that in non-pregnant women.

**Objective:** To estimate maternal and fetal outcome in patients with hepatitis E in relation to trimesters of pregnancy

**Methods:** This study was conducted at the Aga Khan University hospital in Karachi, Pakistan from December 2004 and November 2011. All pregnant patients at any gestational age with clinical and biochemical evidence of hepatitis E (positive HEV IgG/IgM or both) was included in the study group. The medical records of 67 patients were reviewed. Maternal and perinatal outcome of these women were analyzed.

**Results:** Out of 67, 30 (45%) were HEV IgM, 29 (43%) HEV IgG/IgM and 8 (12%) HEV IgG positive. The mean age was 26.88±4.6 yrs. Fulminating hepatic failure occurred in 6(9%), hepatic encephalopathy in two (3%), coagulation failure in six (9%) and maternal mortality occurred in 4(6%) and 63 (94%) were discharged. There were 7(10.4%) intrauterine deaths. Maternal mortality occurred exclusively in those cases with fulminating hepatic failure.

**Conclusion:** It has been observed in this study that Hepatitis E virus infection is a major cause of acute hepatitis in pregnant women and associated with adverse maternal and fetal outcome.

**Keywords:** Hepatitis E, pregnancy, hepatitis serology

### 15.19

#### MATERNAL AND NEONATAL OUTCOME IN OBSTETRIC CHOLESTASIS: A COMPARISON OF EARLY VERSUS LATE TERM DELIVERY

*Naureen Anjum, Neelofur Babar, Sana Sheikh  
Department of Obstetrics & Gynaecology, Aga Khan Hospital for Women, Karimabad*

**Objective:** To evaluate maternal and neonatal outcome in Obstetric Cholestasis (OC) in early versus late term delivery.

**Patient and Method:** This was a retrospective cohort study conducted in Aga Khan hospital for women (AKHW) Karimabad, Karachi, from 1st Jan, 2011 to 31st Oct, 2012. All patients of OC with singleton pregnancy, admitted for labor

induction between Jan 2011 to Oct 2012 were included. Patients were divided in two groups as in early term delivery (Group A : patient from 37 to 37+6 weeks) and late term delivery (Group B : patient with more than 38 weeks gestation). The demographic, laboratory and clinical data of these patients were collected from their medical record. Maternal and neonatal outcome were analyzed using SPSS version 19.

**Results:** The study found that in Obstetric Cholestasis patients admitted for labor induction, the risk of caesarean delivery was higher in Group A as compared to Group B. There was no difference in postpartum complication (p-value 1.00) in both groups. Late induction in OC patients was not associated with neonatal jaundice (p-value 0.4) and no difference in mean birth weight of baby (p-value 0.85). There was no intrauterine death (IUD) in any group.

**Conclusion:** OC patients who deliver after 38 weeks of gestation have a higher chance of vaginal delivery without increasing the risk of stillbirth. With close monitoring of OC patients, pregnancy can be followed till 38-38+6 completed weeks and then induced in order to reduce induction delivery interval and caesarean section.

**Keywords:** Obstetric cholestasis, labour induction, Caesarean section

### 15.20

#### FACTORS ASSOCIATED WITH FAILED INDUCTION OF LABOUR IN A SECONDARY CARE HOSPITAL.

*Neelofur Babar, Iffat Ahmed, Ayesha Malik,  
Luman Sheikh  
Department of Obstetrics & Gynaecology, Aga Khan Hospital for Women, Karimabad*

**Objective:** To assess the factors associated with failed induction of labour (IOL) in a secondary care hospital.

**Method:** This is a retrospective cross sectional study on women admitted for labour induction in Aga Khan Hospital for women Karimabad from 1st Jan, 2009 to 31st Dec, 2009. Induction was

considered successful if the patient delivered vaginally and failed if it ended up in Caesarean Section.

*Result:* Eighteen percent of our pregnant population who underwent induction of labour failed to deliver vaginally. About 25% of 328 nulliparous women had failed induction. With a Bishop score of <5 in 84.3%. In 28.2% with prolonged latent phase of more than 20 hours in Caesarean section had to be performed. *Conclusion:* Nulliparity, poor Bishop score and prolonged latent phase had strongest association with failed Induction of Labour. Macrosomia, gestation age, bad obstetric history and pre labour rupture of membranes were other significant risk factors for emergency caesarean sections in IOL.

*Keywords:* labor induction, caesarean section, failed induction

### 15.22 POSTPARTUM DEPRESSION DUE TO THE FEMALE GENDER OF AN INFANT

*Farah Noor Ali Wasaya, Saniya Noor Ali  
Wasaya  
Nursing Services, Aga Khan University, Karachi*

*Introduction:* Becoming a mother turns into an unpleasant experience of life when baby's gender is not as per expectations thus, heading towards postpartum depression.

*Findings from literature synthesis:* Postpartum depression can lead to infanticide as well as maternal death, often by suicide (Almond, 2009). It also prevents a mother from building up a positive bond with her baby and family members.

*Discussion:* Female newborns are strongly considered as the prime risk factor of having postpartum depression. Being vital member for the society, responsible for the continuation of a family lineage, bread earner, source of power and security and preferable gender in funeral rites in multiple religions makes men as desirable gender.

*Recommendations:* Strict laws prohibiting dowry, self-selecting abortions, and most

importantly promoting girl's education can change the mentality of society regarding gender discrimination.

*Conclusion:* Postpartum depression needs to be resolved in order to effectively perform a motherly role.

*Keywords:* postpartum, depression, female

### 15.23 COMPARING IMPACT OF BODY MASS INDEX ON OUTCOME OF LABOUR INDUCTION: A RETROSPECTIVE COHORT STUDY IN A TERTIARY CARE HOSPITAL IN KARACHI, PAKISTAN

*Farheen Yousuf, Tahira Naru, Sana Sheikh  
Department of Obstetrics & Gynaecology, Aga  
Khan University, Karachi*

*Objectives:* To compare maternal and neonatal complications associated with labour induction among pregnant women with normal body mass index and high body mass index.

*Background:* In Pakistan 37% of women of reproductive age are obese. Obesity increases the rate of Induction of labour with higher chance of cesarean section (38.7% versus 23.8% respectively). This substantially increases labour complication blood loss and macrocosmic babies. This study addresses the association of obesity and failed induction in Pakistani population.

*Materials and Methods:* It was a retrospective record review of 304 pregnant women (152 in each group). Women grouped into two BMI categories: normal weight (<24.9 kg/ m<sup>2</sup>) as controls and high BMI (>25kg/m<sup>2</sup>) as exposed group. Booked before 14 weeks of gestation admitted for induction of labour in a tertiary care hospital in Karachi, Pakistan. Data was collected from medical records regarding mode of delivery, intrapartum and postpartum complications and pregnancy outcome. SPSS 19 was used for analysis

*Results:* There were 4301 deliveries in a year and 880 (20%) pregnant women were induced. Induction was failed and C-section was done in 49 (32%) versus 40 (26%) among normal weight

versus overweight and obese women but difference was not statistically significant (p-value 0.24). Duration of C-section and blood loss was also not significant. However High BMI was found to be significant predictor of perineal tear (p-value 0.001), excessive blood loss during vaginal delivery (p-value 0.02) and increased birth weight of baby (p-value 0.02). *Conclusion:* Induction of labour is safe and recommended for obese women

*Keywords:* BMI, Induction of labour, rate of LSCS

#### **15.24** FACTORS LEADING TO OBESITY AMONG FEMALE ADOLESCENTS IN KARACHI, PAKISTAN

*Fatima Ali Jawad, Nasreen Sulaiman*  
*School of Nursing & Midwifery, Aga Khan*  
*University, Karachi*

*Introduction:* Adolescence is a fundamental period of development because it represents the transition between life as a child, and life as an adult. Obesity is now considered a disease of epidemic proportions with increasing prevalence worldwide. The World Health Organization (2006) defines obesity as a 'global epidemic' existing in both developed and developing countries. The incidence of overweight and obesity are continually rising among females who are between the age group of 11–16 years. *Objective:* The objectives of the study was to identify the factors associated with obesity among female adolescence, to create an awareness regarding the risk factors associated with obesity and finally to suggest certain appropriate measures for preventing obesity and promoting healthy lifestyle among female adolescence.

*Methods & Results:* The study got the ethical approval from the Aga Khan University Ethical Review Committee. An exploratory descriptive study design was used. A total of 32 female adolescents were selected and data was collected through focus group discussions. A total of four Focus group discussions (FGDs) and 28

individual interviews were conducted. The age of the study participants ranged between the ages of 14 to 15 years with the (mean age of 14.54 years, SD=3.53). The weight of the participants ranged between 69 kg to 72kg (mean=70.2 kg, SD=3.28) and height ranged from 1.52 meter -1.62m (mean= 1.58 m, SD=0.04). BMI ranged between 30.01Kg/m<sup>2</sup> to 31.2Kg/m<sup>2</sup> (mean=30.26, SD=0.12). Data revealed mean BMI (30.26), prevalence of obesity calculated was 33%.

*Conclusions:* Major factors leading to obesity were: unhealthy dietary patterns, sedentary life style, lack of physical exercise and cultural factors. Behavior modification programs, positive reinforcement, counseling sessions for enhancing physical activity and balanced nutrition is recommended.

*Keywords:* Obesity, female adolescence, sedentary lifestyle

#### **15.27** REFERRAL PATTERN OF HIGH RISK OBSTETRICS AND GYNECOLOGY FROM SECONDARY CARE HOSPITALS TO TERTIARY CARE HOSPITALS IN KARACHI.

*Fozia Asif*  
*Department of Obstetrics & Gynaecology, Aga*  
*Khan University, Karachi*

*Introduction:* Referrals are an important consideration in any health system. Health system of Pakistan comprise of public and private sector. The Aga Khan University Hospital is a philanthropic, not-for-profit. A broad range of secondary and tertiary care is available in the 577-bed University Hospital to all patients in need .A formal referral chain to secondary and tertiary facilities are nonexistent. The majority of patients in tertiary care institutions (located in the major cities) are self-referred, which results in overcrowding and poor quality of care.

*Objective:* To identify reasons of referral of high risk obstetrics and Gynecology from secondary care hospital to tertiary care hospital in Karachi.

**Methodology:** All the medical records at each site were reviewed between the periods of 2011 to 2012 by obstetricians independently to ascertain the reason for referrals. Relevant information includes reason of referral, site of referral, day of referral, time of referral and outcome of mother.

**Result:** Selected variable of total 100 referred patients were analyzed. Diagnosis of referred patients segregated for referral site and referred site. Eclampsia is a major cause, infection, sepsis were second and third cause of infection at referred site. Eclampsia is a leading cause, second is foetal associated conditions like IUGR, less foetal movement and polyhydramnios and infection is third at referral site. Only 01 death occurs among all referred patients. 44% patients were referred in day time and 56% of patients were referred in nighttime.

**Keywords:** referral patterns, causes, health system

## 15.28

### TRENDS IN MATERNAL MORTALITY REVIEWED AT TERTIARY LEVEL PRIVATE HOSPITAL IN KARACHI, PAKISTAN

*Qureshi RN, Riaz F, Asad R, Kashif W, Chishty U*

*Department of Obstetrics & Gynaecology, Aga Khan University, Karachi*

**Background:** With all the advancement in modern health practices, maternal mortality remains the important challenge for the global health system. It is the death of the women during pregnancy, childbirth or within 42 days after delivery. About 800 women die from pregnancy- or childbirth-related complications around the world every day. Almost all of these deaths occurred in low-resource settings, and most could have been prevented.

**Objective:** This paper reviews the trends of maternal deaths that occurred over a period of twelve years at the different departments of a tertiary level private teaching hospital at Karachi.

**Methodology:** Retrospectively medical records of 79 maternal deaths which occurred (Medicine, Surgery and OBGYN departments) at AKUH from 2000-2011 were analyzed. Medical record data was retrieved through codes 630-677 used in WHO ICD 9 CM Coding. **Result:** A total of 79 maternal deaths were identified with maternal mortality rate of 28 per 100,000 live births. 85% patients were self-referred or referred from other hospitals. Age group is 17-45 years with mean hemoglobin 9.7 g/dl. Fifty percent deaths were due to direct causes. Sepsis was the commonest cause that is 24%, hemorrhage, eclampsia were 18%, 5% respectively. Indirect causes were 47.8%. In comparison of Pakistan Demographic and Health Survey 2006-07 and period of 1988-1999 hemorrhage found to be much higher and sepsis is much lesser.

**Key words :** Maternal mortality, causes of maternal death, Tertiary care hospital.

## 15.29

### THE KNOWLEDGE, ATTITUDES AND PRACTICES REGARDING SEXUALLY TRANSMITTED INFECTIONS, HUMAN PAPILOMA VIRUS AND SEXUAL BEHAVIOURS OF CONTRACEPTIVE PRACTICES AMONG WOMEN IN KARACHI, PAKISTAN

*Humera Muhammad Ismail, Kashif Shafique, Department of Obstetrics and Gynaecology, Aga Khan University, Karachi and Department of Medicine, Dow University of Health Sciences*

**Introduction:** Sexually transmitted Infections (STIs) a significant cause of morbidity and mortality among women. Human papilloma virus is the verified cause of cervical cancer. The burden of STIs in Pakistan much larger than reported. Various research studies indicate that the knowledge level of STIs and HPV in the women is low.

**Objective:** The objective of this study to assess the knowledge, attitudes and practices regarding sexually transmitted infections, Human

Papilloma Virus (HPV) and sexual behaviors of contraceptive practices among women in Karachi, Pakistan. Study Design: cross-sectional survey.

*Methodology:* This was a cross sectional study. A total 600 women age group 19-50 years was selected for interview from out-patient waiting area of a private tertiary care hospital Karachi from Aug 2011- Aug 2012. Convenience sampling was applied. A self-administered questionnaire was used to obtain the information on Knowledge, attitudes and practices (KAP) regarding sexually transmitted infections, and Human Papilloma Virus (HPV).

*Results:* The mean age of participants was 39 ± 10.7 years. 529(88.2%) female were married and 50(8.3%) were unmarried and other 3.5% female were divorced, separated and widowed. The knowledge about STIs was 43.2%. Only 16.8% female know about HPV. 9 % women had practiced to annual genecology examination. 20% females had knowledge about pap smear and 13.7% done a pap smear. Among the 600 participants, 258 (43%) women suggested that government should provide free of cost HPV's vaccination.

*Recommendation/Conclusion:* Undergraduate studies and non-medical studies level should include educate regarding sexual health. Doctors and medical registered nurses should provide sexual health education to patients and the general population

*Keywords:* Knowledge, Attitudes and Practices(KAP), Human Papilloma Virus, Human Papilloma Virus ,Contraceptives

### 15.30

#### FACTORS OF MATERNAL MORTALITY IN PAKISTAN: A REVIEW OF THE LITERATURE

*Mehtab Qutbuddin Jaffer*  
*School of Nursing & Midwifery, Aga Khan University, Karachi*

*Introduction:* Maternal mortality rate is significant indicator for maternal health globally. MMR indicates achievement of

Millennium developmental goals (MDGs) 5, which is to improve maternal health by three quarters. In Pakistan, unfortunately there are certain rigid factors which causes maternal mortality and it remains as thorn on the women's health. Despite of several initiatives on maternal health, there are countries like Pakistan have highest burden and have not been reduced at a desired level.

*Objectives:* The objective of this paper is to highlight the factors that contribute maternal mortality in Pakistan, which is a major global concern.

*Methods:* The literature review was done for the years 2000 to 2013 from various electronic databases such as PUBMED, CINAHL, Science Direct, and Cochrane Review. The literature included published articles and reports. Boolean words (AND, OR) were used to limit the search engine. In the first step, the titles of the articles were screened; in the second step abstracts were reviewed; and, finally, the entire article was reviewed on the basis of its relevance. The final reference list consists of 33 relevant articles including electronic and hand searching.

*Results:* This review finding revealed several factors affecting the maternal mortality in Pakistan. It includes socio-economic, cultural, physical, human and medical factors. *Conclusions:* Maternal mortality is still very challenging public health issue in Pakistan, which constitute women and their entire family too. We need to work very aggressively in-order to meet the challenging task of MDGs. It requires active participation of community, governmental, non-governmental agencies including doctors, registered nurses, and midwives to look for various innovative strategies addressing this huge burden at all the levels.

*Keywords:* Maternal mortality, determinants AND causes of maternal mortality, Maternal complications



### 15.31 COMPARISON BETWEEN GREULICH- PYLE AND GOLDEN-GIRDANY METHODS FOR ESTIMATING SKELETAL AGE IN CHILDREN

*Muhammad Awais, Naila Nadeem, Yousuf  
Husen, Abdul Rehman, Madiha Beg, Yasir Jamil  
Khattak  
Departments of Radiology and Surgery, Aga  
Khan University, Karachi*

*Objectives:* To compare the Greulich-Pyle (GP) and Golden-Girdany (GG) methods in the estimation of skeletal age (SA) in children in Pakistan.

*Methods:* All children up till 18 years of age who underwent X-rays for evaluation of trauma from 1st July, 2010 to 31st June, 2012 at Radiology Department, Aga Khan University Hospital were included. X-ray were interpreted for SA estimation by two consultant paediatric radiologists having more than 10 years of experience and who were blinded to the actual chronological age (CA) of children.

*Results:* 283 children were included. No significant difference was noted in the mean SA estimated by GP method and the mean CA for female children ( $p=0.434$ ). However, significant difference was noted between mean CA and mean SA by GG method for females ( $p=0.005$ ). For males, there was significant difference between mean CA and mean SA estimated by both GP ( $p<0.001$ ) and GG ( $p<0.001$ ) methods. A stronger correlation was found between CA and SA estimated by GP method ( $r=0.938$  for girls,  $r=0.916$  for boys) as compared to GG method ( $r=0.907$  for girls,  $r=0.867$  for boys) respectively. Bland Altman analysis also revealed that the two methods cannot reliably be used interchangeably. Excellent correlation was seen between the two readers for both GP and GG method.

*Conclusion:* Our study showed that there is no additional benefit of using GP and GG method simultaneously over using GP method alone. Moreover, although GP was reliable in estimating SA in girls, it too was unable to accurately assess the SA in boys. Therefore, best would be to develop our own indigenous

standards of SA estimation based on a representative sample of healthy native children.

*Keywords:* Skeletal Age Measurement, Greulich Pyle, Golden Girdani

### 15.32 ELEVATED TH1 IMMUNE RESPONSE IS ASSOCIATED WITH STUNTING IN PAKISTANI CHILDREN

*NajeehaTalat Iqbal, Fatima Aziz, Javeria  
Samad, Aneeta Hotwani, Shahida Qureshi,  
Tauseef Akhund, Syed Asad Ali  
Departments of Paediatrics & Child Health,  
Aga Khan University, Karachi*

*Background:* Childhood stunting is common in developing countries, which cause significant morbidity and developmental delay. In this study we aim to identify the role of circulating cytokines/chemokines in growth retardation in a cohort ( $n=300$ ) of children being followed for growth monitoring since birth in a rural area of Matiari district.

*Methods:* Human 25 plex cytokines were assessed in serum samples collected from children ( $n=128$ ) at 6 month. The children were stratified in to two major groups on the basis of positive and negative Z score at 6 month. Cytokines were estimated on Luminex platform using microbeads conjugated with capture antibodies for particular analyte. Both beads and serum samples were incubated for 2 hrs followed by analyte specific biotinylated antibodies, the bound secondary antibody was finally revealed by streptavidin conjugated to fluorescent protein, R-phycoerythrin (PE). The intensity of fluorescence is directly proportional to the amount of bound analyte.

*Results:* Based on positive ( $n=45$ ) and negative ( $n=83$ ) Z score at 6 month, a higher circulating level of Eotaxin (MWU;  $p=0.03$ ), IL12 ( $p=0.04$ ), MIG ( $p=0.04$ ) and RANTES ( $p=0.04$ ) was associated with negative Z score. When Z score were further categorized in to  $<-2$  and  $> +1$  growth score, the same association was observed with above mentioned analytes in addition to IL2 (MWU;  $p=0.02$ ) with  $<-2$  growth score.

**Conclusion:** In an interim analysis of this cohort, the children with negative Z score showed a mark increase in Th1 cytokines and chemotactic protein which represents an underlying inflammatory process.

**Keywords:** Inflammation, cytokines, Growth Score

### 15.34

#### A REVIEW OF COMPARISON OF COMPLICATIONS OF VAGINAL HYSTERECTOMY WITH AND WITHOUT CONCOMITANT SURGERY FOR SUI: A 5 YEARS' EXPERIENCE AT A TERTIARY CARES HOSPITAL OF

*Raheela, Nadeem Zuberi, Munazza Akhtar  
Department of Obstetrics & Gynaecology, Aga Khan University, Karachi*

**Objective:** The study was performed to review the complications of surgery for POP with or without surgery for SUI. This included the need for second procedure two years after the primary surgery.

**Study Design:** We conducted a retrospective cross-sectional comparative study at the Aga Khan University Karachi, Pakistan. International Classification of Diseases, 9th revision, Clinical Modification (ICD-9-CM) was used to identify women who underwent vaginal hysterectomy with anterior/posterior repair alone and those with concomitant tension free vaginal tape surgery for Urodynamic stress Incontinence.

**Results:** The 28 cases of VH/repair combined with TVT were compared for complications with 430 cases of VH with repair alone. The basic characteristics like age, BMI and degree of prolapse showed no statistical difference among two groups. The main comorbidities in both groups were Hypertension, Diabetes and Bronchial asthma. We observed no significant differences in intraoperative and post-operative complications except for cuff abscess need for medical intervention and readmission following discharge from hospital which were higher in cases with vaginal hysterectomy with concomitant TVT.

**Conclusions:** Vaginal hysterectomy is an efficient treatment for uterovaginal prolapse with a swift recovery, short length of hospital stay and rare serious complications. The addition of surgery for USI does not appear to increase the morbidity.

**Keywords:** vaginal hysterectomy complications, surgery for stress urinary incontinence, pakistan

### 15.35

#### QUALITY IMPROVEMENT INDICATORS – SIGNIFICANT TOOL TO IMPROVE PERINATAL HEALTH

*Saba Akbar Dossani  
Aga Khan Hospital for Women & Children,  
Kharadar*

**Introduction:** Worldwide, pregnancy and childbirth turns out to be the worst nightmare for approximately 0.5 million women every year. Thus, improving perinatal healthcare quality is an area of concern. To do so, the industry needs to keep an eye on the Perinatal Quality Indicators. This study aimed at describing the process of selecting, measuring and identifying ways to use indicators to improve the quality of perinatal health.

**Methods:** Literature review was done using scientific database such as ScienceDirect, Springer Link, SAGA and CINAHL. Recent literature (2006 onwards) was preferred. A total of 45 studies were considered.

**Results:** The study suggested that selection of the indicators shall be based on the epidemiology, geography and health economy of the state. Any indicator selected shall be tested for its relevance, reliability and validity. The indicator type shall also be decided before the final decision. Healthcare managers and industry leaders should take future scopes in account while selecting indicators. Measurement of the indicators shall be the responsibility of the department personnel who takes the ownership of the actions because measuring indicator has no point unless they are used efficiently. Decision makers should consider indicators for

planning and allocating resources, designing policies and procedures and implementing various healthcare quality projects.

*Conclusion:* Every stakeholder of the health system is responsible to improve the quality of health. The review showed that effective measurement, monitoring and utilization of quality indicators can have tremendous improvement in improving the quality of perinatal health, ultimately reducing the global healthcare burden.

*Keywords:* Quality Improvement, Perinatal Health, Quality Indicators

### 15.36

#### ROLE OF ULTRASOUND IN CHARACTERIZATION OF OVARIAN MASSES

*Saira Naz Sufian, Saima.Hafeez, Imrana Masroor, Madiha Beg*

*Department of Radiology, Aga Khan University, Karachi*

*Background:* Ovarian cancer is the second most common malignancy in Pakistani women, accounting for 4% of all cancers in the female population. The aim of this study was to determine sensitivity, specificity, positive and negative predictive values and 95% confidence intervals for ultrasound in characterization of ovarian masses in patients presenting at public and private tertiary care hospitals in Karachi, Pakistan.

*Materials and Methods:* We adopted a cross-sectional analytical study design to retrospectively collect data from January 2009-11 from medical records of two tertiary care hospitals. Using a non-probability purposive sampling technique, we recruited a sample of 86 women aged between 15 and 85 years fulfilling inclusion criteria with histopathologically proven ovarian masses presenting for an ultrasound examination in our radiology departments.

*Results:* Our retrospective data depicted sensitivity and specificity of ultrasound to be 90.7%, 95%CI (0.77, 0.97) and 91.4%, 95%CI

(0.76, 0.98) respectively. Positive predictive value was 93%, 95%CI (0.79, 0.98) and negative predictive value was 89%, 95%CI (0.73, 0.96). A total of 78 ovarian masses were detected, out of which 42 were malignant and 36 were benign. *Conclusions:* Results of our study further reinforce the conclusion that ultrasound should be used as an initial modality of choice in the workup of every woman suspected of having an ovarian mass. It not only results in decreasing the mortality but also avoids unnecessary surgical interventions.

*Keywords:* Ovarian masses, ultrasound characterization, Pakistani females

### 15.37

#### FACTORS INFLUENCING THE CHOICE OF FAMILY PLANNING (FP) METHODS AMONG MARRIED WOMEN IN SWAT DISTRICT, KHYBER PAKHTUNKHWA, PAKISTAN

*Sana Tanzil, Syed Farid-ul-hasnain, Sarah Saleem, Narjis Rizvi*

*Department of Community Health Sciences, Aga Khan University, Karachi*

*Introduction:* Women's preference for contraceptive methods is influenced by various factors including; age, gender, contraceptive intention (spacing versus limiting) and lactation status. Khyber Pukhtoon Khwa (KPK) is one of the provinces in Pakistan that currently has the second highest Total Fertility Rate (TFR) and the lowest Contraceptive Prevalence Rate (CPR) with significant preference for traditional methods. Swat is a district in KPK known for its distinct socio-cultural background. This study was conducted to identify factors, views and perceptions influencing contraceptive use and the choice of contraceptive method among married women in Swat.

*Method:* The study was conducted using mixed method approach. A cross sectional survey was carried out at 19 health facilities to collect information on knowledge and practice of married women regarding family planning and family planning methods they are using. Focus

group discussions (FGDs) were conducted in rural and urban communities to understand the context of contraceptive use and the method preferred.

**Results:** Quantitative data showed that advancing age and increasing parity increases the use of modern contraceptive methods. This data also revealed that lack or inadequate knowledge about family planning and fear of side effects and infertility hinders contraceptive use; this finding was validated through FGDs as well. FGDs further identified that lack of women empowerment, resistance from husband and in-laws and misinterpretation of religion that family planning prohibited in Islam are other barriers for using contraceptives.

**Conclusion:** Limited knowledge about family planning methods, lack of women's empowerment and misinterpretations of religion still significantly hinder family planning use and influence choice of contraceptive method.

**Keywords:** Contraceptive methods, Married women, Swat

### **15.39** STOP CHILD LABOR: SPARE FUTURE GENERATION

*Shazia Sardar Khan*  
*School of Nursing & Midwifery, Aga Khan*  
*University, Karachi*

**Abstract:** Child labor is viewed as unavoidable consequence of poverty which is defined the work carried out to detriment of child in violation of international and national law.

**Background:** The root cause of child labor is related to poverty, uncontrolled growth rate, lack of facilities for education, and low governmental investment on education. UNICEF 2011, estimated that around 150 million children aged 5-14 in developing world are involved in child labor.

**Purpose:** The purpose of this paper is to address the impact of child labor on developmental stages of child and underpinning the relationship of child labor with domestic needs as well as country development.

**Literature Review:** For the achievement of purpose a number of articles were recruited on the basis of authenticity in recent time by using PubMed, Sage and Springer link searches. Literature review revealed that child labor has significant negative impact on wellbeing as it put a child at risk to serious physical and psychological health issues. However, opponents argue that stopping child labor could be more harmful as it put entire family at risk for poverty and immoral act as prostitution, terrorism and robbery to overcome poverty.

**Conclusions:** There is a close link between poverty so increased rate of child labor worldwide needs intervention at nation and international level to protect child exploitation.

**Keywords:** Child labor, poverty, domestic need

### **15.40** USE OF PLAY THERAPY IN EDUCATING ASTHMATIC AND DIABETIC PEDIATRIC PATIENTS: A PILOT CLINICAL PROJECT

*Shela Akbar Ali Hirani*  
*School of Nursing & Midwifery, Aga Khan*  
*University, Karachi*

**Introduction:** Play therapy is one of the strategies to address behavioural issues among sick and hospitalized children diagnosed with chronic diseases. In the Pakistani Pediatric settings, where pediatric hospitalized patients diagnosed with chronic disease are not commonly told about their treatment regimen, non-compliant behaviour and adjustment issues are common.

**Aim:** Considering this gap, a pilot play therapy project was initiated at inpatient and outpatient pediatric setting of a private tertiary care hospital at Karachi, Pakistan. This project aimed at introducing play therapy as an educational strategy for Diabetic and Asthmatic children to aware them about their disease process, management plans, and life style modifications.

**Methodology:** Multidisciplinary team of pediatric health care professionals was involved in planning the play therapy kit, and implementation of the project. Altogether 40

pediatric health care professionals were trained through face to face workshop, and then they were evaluated and certified based on the observation of their play therapy sessions with Asthmatic and Diabetic children.

*Findings:* After the play therapy sessions, it was noticed that these children who were previously fearful, anxious, and had no knowledge about their disease process, were able to verbalize about their disease and to demonstrate the correct technique of inhaler use and insulin administration on dolls and then on self.

*Keywords:* Play therapy, Pediatric patients, Educate

#### **15.41** DIFFERENCE IN TRANS CEREBELLAR DIAMETER BETWEEN GROWTH RESTRICTED AND NORMAL SINGLETON FETUSES .

*Sumera, Azrah Khuwaja*  
*Department of Community Health Sciences, Aga Khan University, Karachi and Abassi Shaeed Hospital*

The objective was to measure and compare the transcerebellar diameter between growths restricted and normal singleton fetuses among pregnant women presenting to tertiary care Hospital of Karachi. This was a case control study. Singleton fetuses with intrauterine growth retardation were identified as cases and all the singleton fetuses with normal growth were identified as controls. Place & duration of study: This study was conducted on pregnant women attending the outpatient department at obstetrics and gynecology unit of Abassi Shaeed Hospital Karachi. Study was conducted from April 1, 2010 to October 1, 2010 Pregnant women with alive singleton fetuses having gestational age of 28- 40 weeks were included in the study. Women who gave the informed consent were given appointment for obstetrical ultrasound. Information regarding maternal age, parity, gestational age, ultrasound findings (IUGR normal or growth) and transcerebellar diameter were documented. Logistic regression was used

to analyze the data. Mean transcerebellar diameter of normal fetuses group was  $34.02 \pm 3.56$  mm, while mean transcerebellar diameter of growth restricted fetuses group was  $35.29 \pm 3.37$  mm. No significant difference was found in transcerebellar diameter between normal and IUGR fetuses while adjusting for maternal age and parity, OR: 0.92, 95% CI: 0.813, 1.041. Transcerebellar diameter was found to be same between normal and growth restricted fetuses. Therefore this parameter can be used as an important tool in assessing the gestational age in normal and growth restricted fetuses. This can be helpful for obstetricians in appropriate management of various complications during pregnancy.

*Keywords:* Transcerebellar, Growth restricted fetuses, Gestational Age

#### **15.43** WOMEN'S PERSPECTIVES REGARDING ANTENATAL CARE AND NUTRITION FROM BALUCHISTAN, PAKISTAN

*Syeda Amber Syed, Ayesha Zahid Khan, Aneeta Khoso, Zia Sultana, Ghazala Rafique*  
*Human Development Programme and Department of Community Health Sciences, Aga Khan University, Karachi*

*Background:* Importance of quality antenatal care is beyond question, yet in low and middle income countries only 65% women receive antenatal care as compared to 97% in developed countries. Maternal health is a key issue in Pakistan. The exceedingly high maternal mortality ratio (690 women die per 100 000 live births) has caused great concern on the quality of maternal health services. Desired pregnancy outcome and health of the neonate is closely intertwined with maternal nutrition which in turn is influenced by cultural practices. Objectives: This paper provides insight regarding practices perceptions and challenges experienced in utilizing Antenatal Care. It also explores maternal nutritional practices in order to appraise the level of knowledge and to assess

cultural dimensions of dietary intake during pregnancy.

**Methods:** Purposive sampling design was implemented for qualitative data collection. 14 focus group discussions were conducted with women aged 15-49 years residing in 3 districts of Baluchistan. The data was transcribed as verbatim and analysed through Nvivo version 2. **Results:** Demand side barriers such as transport and cost of maternal health services were a major challenge affecting service utilization. In contrast traditional birth attendants (Daiis) were more accessible. Majority of the mothers seek care in last trimester and that too from daiis. Home deliveries were a common practice. Although most participants had an understanding of importance of nutrition but in practice are not able to increase dietary intake to meet the nutritional needs of pregnancy. However milk and fruit intake was reported with emphasis by the mothers for the growth of their child. **Conclusion:** The antenatal period presents opportunities to reach out to pregnant women with vital interventions. A better understanding of women's experiences, including their perceptions, preferences and satisfaction levels, can substantially improve the degree to which women accept such intervention and use the services provided. Efforts concentrated to understand perceptions of women regarding antenatal care will influence the percentage of pregnant women to make antenatal visits consequently improving the state of mother and child health in Pakistan.

**Keywords:** Antenatal Care, Nutrition Practices, Pakistan

#### 15.44

##### RETINOPATHY OF PREMATURITY: AN EVALUATION OF EXISTING SCREENING CRITERIA IN PAKISTAN

*Tanveer Anjum Chaudhry, Farzeen Khalid Hashmi, Sohail Salat, Qazi Assad Khan, Abdul Ahad, Ather M Taqui, Reema Syed, Khabir Ahmad*  
*Departments of Surgery and Paediatrics & Child Health, Aga Khan University, Karachi*

**Aim:** To evaluate if broadening the criteria for ROP screening to include babies with gestational age  $\geq 32$  weeks and/or birth weight  $\geq 1500$ g, would have an impact on the number of babies diagnosed with ROP

**Methods:** A prospective cohort study was carried out at the Aga Khan University Hospital, Karachi, Pakistan. Infants with gestational age  $< 35$  weeks or birth weight  $< 2000$  grams born in this hospital from May 2010 to December 2012 were screened for the presence of ROP 4-6 weeks after birth. Subsequent examinations were performed at intervals based on the findings of initial eye examination. Infants diagnosed with ROP were treated with argon laser therapy. Neonatal risk factors were also assessed. Cumulative incidence of ROP was calculated for babies falling within and outside current screening criteria. Multivariate logistic regression analysis was performed to examine the predictors of ROP.

**Results:** A total of 301 infants were screened. Twenty seven (9%) babies developed ROP, of which 18 had plus (severe) disease. None of the babies falling outside the current screening criteria developed ROP. The incidence of ROP in the infants meeting the current screening criteria, was 11.5%. Multivariate logistic regression analysis showed that surfactant therapy (adjusted odds ratio 4.59, 95% CI 1.67, 12.58) and blood transfusion (adjusted odds ratio 5.74, 95% CI 1.82, 18.15) were independently associated with the development of ROP. **Conclusion:** In our population ROP was not seen to occur in infants older than 32 weeks gestational age and/or weighing more than 1500 grams. **Keywords:** Retinopathy of prematurity, preterm, neonates, low birth weight, screening, developing countries

**Keywords:** Retinopathy of prematurity, incidence, screening

### 15.45

#### ADAPTATION OF WECHSLER PRESCHOOL AND PRIMARY SCALES OF INTELLIGENCE (WPPSI-III) FOR 4 YEAR OLD CHILDREN IN RURAL SINDH: PROCESS AND LESSONS LEARNED

*Uzma K. Memon, Muneera A. Rasheed, Aisha K. Yousafzai  
Department of Paediatrics & Child Health, Aga Khan University, Karachi*

*Background:* Wechsler Preschool and Primary scales of Intelligence III (WPPSI-III) has been widely used to measure Intelligence Quotient of young preschool children. The purpose of this paper is to describe the cultural adaptation process of WPPSI-III for 4 years old children for use in rural Sindh.

*Methods:* The process started with eight subscales (7 core, and 1 optional) of the WPPSI-III being reviewed by child development experts and community members for cultural appropriateness. The items were changed and a translated version of the form was produced in local language (Sindhi). The WPPSI III was tested on a sample of 5 kids. The feedback from community and testing was reviewed by experts and relevant changes were incorporated. The sub-test Coding was replaced by Symbol Search. Two trained assessors conducted the pilot test on 23 children from the local community. Data was collected on inter-rater reliability on 5 children.

*Results:* The mean age of the sample children was 4 years 21 days with 12 girls and 11 boys. Analysis showed that mean scale scores on the different subscales are between 9.4 -6.9 s while the original mean is 10 (3). Test-retest reliability showed high inter-rater agreement on all the subscales with Intra class correlation value of 1.

*Conclusion:* The adapted instrument is a reliable measure of intelligence for 4 year old children in rural Sindh. Analysis of constructs of validity are being tested on a larger sample.

*Keywords:* Intelligence, WPPSI-III, Adaptation

### 15.46

#### FREQUENCY AND CAUSES OF COAGULOPATHY IN CHILDREN, 1MONTH TO 16 YEARS OF AGE IN PICU OF A TERTIARY CARE HOSPITAL IN KARACHI

*Vikram Kumar Kessani, Anwar Ul Haq, Qalab Abbas, Zehra Fadoo  
Department of Paediatrics & Child Health, Aga Khan University, Karachi*

*Background:* Coagulation abnormalities are frequently found in critically ill patients and may have major impact on clinical outcome. These critically ill patients with coagulation defects have a four to five fold higher risk for bleeding compared to patients with normal coagulation status

*Objectives:* To determine the frequency and causes of coagulopathy in children admitted in Pediatric Intensive care unit (PICU)

*Methodology:* Retrospective chart review of records of children admitted in PICU from 1st January 2011 to 31st December 2012. Frequency and percentages of coagulopathy (INR >1.5), common disease categories and outcome were calculated. Association of different disease categories and outcome with deranged coagulation is reported

*Results:* Of 588 patients admitted in PICU, males were 61%. Neurological disease comprised 18% Of these patients, followed by respiratory (14%), oncology (8%) trauma (7%), and sepsis (6%). 17.2% patients had coagulopathic while INR was not done in 31% of the patients. Over all 15.8% patients expired and 40.6% of those who had deranged INR expired. Main causes of deranged coagulation were neurological disease, sepsis and hepatic disease and these were associated with high mortality.

*Conclusions:* Coagulopathy is very common in PICU patients associated with high mortality. Main causes of coagulopathy are neurological diseases, sepsis and liver failure.

*Keywords:* Coagulopathy, Critically ill child, Pediatric ICU

**15.47**  
FOREIGN BODY ASPIRATION, A  
PREVENTABLE PEDIATRIC PROBLEM

*Zafar Nazir, Maryam Aftab*  
*Department of Surgery, Aga Khan University,*  
*Karachi*

*Introduction:* Foreign body aspiration (FBA) is one of the common domestic injuries in Children. In third world country like Pakistan, we are facing this as a preventable challenge, which can be avoided by having a proper family education regarding a risk factors and preventable strategies.

*Objective:* The study aims to review the presentation of FBA at AKUH and to see the comparison between betel nut aspiration and other FBA. We have also looked at predictive diagnostic value of history, clinical signs and symptoms, and radiological finding and rate of negative bronchoscopy.

*Material & Methods:* A retrospective study of 27 years was conducted at AKUH. Our inclusion criterion was children who had rigid bronchoscopy for foreign body aspiration. We have excluded children who had bronchoscopy done for other reasons. Total numbers of patients were 600 and data analyzed on SPSS.

*Results:* FBA is common in 1 – 3 years of age with male predominance (72%). History of Choking was present in 60% cases. Cough was the commonest symptoms (86%). In 50% cases Betel nut was the most common foreign body. Almost 74% of our patients were diagnosed as having FBA 24 hours after onset of symptoms. Our rate of – ve bronchoscopy was 15%. There was one mortality due to delay in hospital arrival.

*Conclusion:* Our study has shown that the first 3 years of life are associated with an increased risk of FBA. Our rate of early preemption for diagnosis of foreign body is increasing due to staff and parents education.

*Keywords:* Domestic injury, Betel nut, Foreign body aspiration

**15.48**  
MIDWIFERY LED CARE: EXPLORING  
EXPERIENCE OF MIDWIVES PRACTICING  
IN TWO PRIVATE MATERNITY CARE  
HOSPITAL

*Zulekha Saleem, Rafat Jan, Helen McLytre,*  
*Salma Rattani, Rozina Sikandar*  
*School of Nursing & Midwifery, Department of*  
*Obstetrics & Gynaecology, Aga Khan*  
*University, Karachi and University of*  
*Nottingham, United Kingdom*

*Introduction:* Globally, through Midwifery Led Care (MLC) model, midwives play an autonomous role by providing continuity of maternity care to women during their childbirth processes in any setting (facility, home or community based). However, in many hospitals in Pakistan, midwives have not provided full scope of their services because of the influence of Medical Model of Care. Therefore, one of the private hospital took initiative to strengthen the role of midwives by implemented the MLC model of their maternity care hospitals. Thus, it is highly important to study the perspective of the midwives providing care to women in the MLC model during their antenatal, intranatal, and postnatal period at these hospitals.

*Method:* The descriptive qualitative data was collected through semi-structured interviews from 10 midwives.

*Findings:* The findings of the study revealed one theme and five related categories emerged. The theme of the study emerged as ‘struggling to be a professional midwife’ and the related five categories were (i) asking to perform within the full scope of practice (ii) pleading to provide full intrapartum care (iii) persuading to trust in midwives expertise (iv) raising concern for expensive midwives’ services and (v) encountering barriers to practice midwifery as independent practitioners.

*Conclusion:* The study highlights that Midwives are struggling for their professional identity while practicing the MLC model because their professional roles undermined due to the dominancy of the medical led care model. Moreover, lack of higher education was also



highlighted by the midwives, as they have no opportunities for their career growth.

*Keywords:* midwifery led care (MLC), roles of midwives, barriers and facilitators of MLC

#### 15.49

##### LOW UPTAKE OF MODERN CONTRACEPTIVES: PERSPECTIVES OF SERVICE PROVIDERS AND END USERS OF LADY HEALTH WORKER PROGRAM IN KARACHI, PAKISTAN: A QUALITATIVE RESEARCH

*Nasim Zahid Shah, Tazeen Saeed Ali, Imtiaz Jehan, Agha Xaher Gul*  
*Department of Community Health Sciences and School of Nursing & Midwifery, Aga Khan University, Karachi*

*Objective:* Pakistan is the sixth most populous country in the world and among one of the leading countries in South Asia where the initiative of Family Planning (FP) was started in late 1950s. The National Program for Family Planning and Primary Health Care (LHWP), initiated in 1994 is one of the largest community based intervention for the provision of primary health care including family planning in Pakistan. Despite the efforts Pakistan still has one of the highest population growth rates in the world (2.07 in 2011) particularly among the South East Asian and Muslim countries. The CPR has been stagnant for more than a decade now. The current study attempts to help identify areas that require strengthening in service delivery to increase the low uptake of modern contraceptives.

*Method:* A descriptive qualitative exploratory approach was carried out during July 2013 to September 2013 whereby; focus group discussions and in-depth interviews were conducted with the key service providers (LHWs & LHSs) and end-users (registered married women) of the LHWP using a purposive sampling technique with explicitly predefined inclusion and exclusion criteria. The Qualitative Content Analysis was used to analyze the data.

*Findings:* Life experience of a community woman for using FP” has emerged as the main theme from the analysis of FGDs with end-users with three main categories. The analysis of FGDs with LHWs revealed two main categories “Positive and negative aspects of LHWP, way forward for program improvement” and nine sub categories. The analysis of the in-depth interviews with LHSs revealed five main categories; “Hindrances for use of FP Impetus for practicing FP Impact of LHWs on society Strengthening of accountability system for LHWs and “next step towards improvement” and twenty sub categories.

*Conclusion:* Besides the impact of LHWP, current study has however identified certain key areas that require strengthening in service delivery to increase the low uptake of modern contraceptives both at end-user and service provider level.

*Keywords:* Family Planning, Reproductive Health, LHWP Pakistan

#### 15.50

##### WOMEN WITH PREGNANCY INDUCED HYPERTENSION HAVE HIGHER RISK OF DEVELOPING ESSENTIAL HYPERTENSION

*Aysha Almas, Amna Qasim, Ahmad Bashir, Sara Sajid, Mehmood Riaz*  
*Section of internal Medicine, Department of Medicine, Aga Khan University, Karachi*

*Background:* Hypertension is a significant health burden that leads to increased morbidity and mortality. There is limited data in literature on the association of pregnancy induced hypertension with the development of essential hypertension in future from this south Asian population of women who are at a higher risk of developing cardiovascular diseases as compared to men.

*Objectives:* To determine the association of essential hypertension with Pregnancy induced hypertension in women presenting to medicine clinics.

**Methods:** This was a case-control study conducted over 12 months in the out-patient medicine clinics of the Aga Khan University Hospital. Women patients aged >18 years and < 65 years were enrolled from the out-patient clinics. Cases were women who were diagnosed as hypertensive based on JNC VII criteria or who have pre hypertension and who had history of pregnancy in the past. Controls were women who were not hypertensive and who had history of pregnancy in the past. Women with secondary hypertension and those with primary infertility were excluded from the study. Primary outcome was hypertension and the main exposure was pregnancy induced hypertension. Data was analyzed using SPSS version 19. Mean (SD) and % (N) were used for descriptive and Logistic regression was used for calculating OR (95 % CI).

**Results:** A total of 258 patients were enrolled: 51.6 % (133) cases and 48.4 % (125) controls. Of those enrolled, overall: Mean (SD) age was 44.6 (13.3), SBP was 131(24.0), DBP was 78.8(12.9), Number of pregnancy was 4.69 (2.87) {with 3.92 (2.68) live births and 0.717 (1.11) abortions}, 99.6% (257) were married, 36.0% (93) had family history of hypertension, 9.3% (24) performed 30 min physical activity >4 days/week, 20.9% (54) had PIH [5% (13) developed hypertension in the 1<sup>st</sup> trimester of pregnancy, 4.3% (11) in the 2<sup>nd</sup> trimester, 10.9% (28) in the 3<sup>rd</sup> trimester].

On univariate regression analysis with hypertension as outcome; Odds Ratio (95 % CI) was 1.6 (95% CI, 0.88 to 3.0) p value 0.11 for pregnancy induced hypertension (PIH), 1.14(1.11,1.18) p value <0.001 for age, 1.31(1.17,1.45) p value <0.001 for number of pregnancy, 1.13(0.880,1.45) p value 0.34 for trimester, 1.12(.483, 2.61) p value 0.79 for physical activity and 1.11(1.06, 1.16) p value <0.001 for BMI.

On multivariable regression for outcome of hypertension with PIH OR (95 % CI) was 2.73(1.2, 6.2) p value 0.01 after adjustment for age and family history of hypertension.

**Conclusions:** Women who develop hypertension in pregnancy are at higher risk of developing essential hypertension later on in life compared to women who do not have PIH

## 15.51

### YOUNG FEMALE PRESENTING WITH HYPONATREMIA AND HYPERTENSION

*Muhammad Junaid Patel, Anoosh Moin, Sara Ahmed, Naseer Ahmad, Mohammad Tariq*  
Section of internal Medicine, Department of Medicine, Aga Khan University, Karachi

**Background:** Porphyrrias are a group of metabolic disorders that can be divided into two main categories according to symptomatology: acute and cutaneous porphyria. Acute intermittent porphyria has a defect in porphobilinogen deaminase enzyme that causes an accumulation of porphobilinogen and aminolevulinic acid causing peripheral neuropathies and dysautonomia.

Global incidence is calculated mostly in the western countries. It is estimated to be around 0.01/1000, with figures ranging from 0.3-2/1000 in Europe, with a male preponderance. To date, literature review has unearthed only one case study of a family with acute intermittent porphyria in Pakistan, which necessitates further study on this disease group.

**Case Study:** An 18 year old female presented to the AKU ER with an acute episode of seizure, abdominal pain and sudden onset hypertension. For the past week she had disturbed sleep and anorexia, later developed nausea, vomiting and constipation. For these complaints she presented to a general practitioner and was prescribed Alprazolam for anxiety, Lisinopril and Aspirin for hypertension. Subsequently patient had one episode of generalized tonic clonic seizure and was brought to the AKUH emergency department.

On physical exam she was found to be tachycardiac, hypertensive with an upgoing left planter, rest of the examination was unremarkable. Her initial laboratory investigations showed hyponatremia (Na = 114mmol/L) with spot urinary sodium, urine and serum osmolality suggestive of Syndrome of Inappropriate Antidiuretic Hormone secretion. Her free water was restricted and she was treated with hypertonic saline, started on amlodipine for hypertension. She had persistent abdominal pain for which her X-ray abdomen was also done to

rule out any obstruction which showed only large bowel faecal loading. She later developed another seizure with ensuing mild disinhibition during hospital stay and was started on phenytoin. MRI Brain was done which showed abnormal signal intensity areas in bilateral posterior parietal cortex with meningeal enhancement suggestive of vasogenic edema which is consistent with Posterior Reversible Encephalopathy Syndrome (PRES). EEG showed theta delta slowing.

Clinical findings and presentation were out of proportion so rarer causes of this patient's singular presentation namely porphyria was considered. Her urine for porphobilinogen was sent which came out to be positive, urinary coproporphyrins were also positive after which we sent 24 hour urine for quantitative analysis of porphobilinogen and aminolevulinic acid levels which were found to be elevated and the diagnosis of Acute Porphyria was established. Her medications were adjusted like phenytoin was changed to levetiracetam and she was started on IV dextrose as her hyponatremia improved and patient was sent home in a clinically stable condition.

Upon discharge she was counseled appropriately for prevention of further attacks with respect to diet and medications. Appropriate follow-up was given. Provocation factor in this case could have been premenstrual syndrome.

*Conclusion:* There is a need to understand the significance of acute abdominal pain with autonomic instability and neurologic dysfunction as a presentation of AIP that might be missed due to rarity of its occurrence.

## 15.52

### SOUTH ASIAN CONSENSUS STATEMENT ON WOMEN'S HEALTH AND RAMADAN

*Sarita Bajaj<sup>1</sup>, Afreen Khan<sup>1</sup>, Farah Naaz Fathima<sup>2</sup>, Mohammed Abdul Jaleel<sup>3</sup>, Aisha Sheikh<sup>4</sup>, Kishwar Azad<sup>5</sup>, Jalees Fatima<sup>6</sup>, Fauzia Mohsin<sup>5</sup>*

*<sup>1</sup>Department of Medicine, MLN Medical College, Allahabad, India, <sup>2</sup> Department of Community Health, St. John's Medical College, Bangalore, India, <sup>3</sup> Department of Medicine, Bangalore Diabetes Hospital, Vasanthanagar, and AJ Diabetes Care and Polyclinic, BTM Layout, Bangalore, India, <sup>4</sup> Section of Endocrinology, Department of Medicine, The Aga Khan University Hospital, Karachi, Pakistan, <sup>5</sup> Department of Paediatrics, Bangladesh Institute of Research and Rehabilitation for Diabetes, Endocrine and Metabolic Disorders (BIRDEM), Dhaka, Bangladesh, <sup>6</sup> Department of Medicine, Era's Lucknow Medical College, Lucknow, India*

Fasting during *Ramadan*, is mandatory for all healthy adult Muslims. It is estimated that there are 1.1-1.5 billion Muslims worldwide, comprising 18-25% of the world population. About 62% of the world's Muslim population resides in Asia. Women comprise approximately 50% of this population. There is great religious enthusiasm in the majority of Muslims the world over for observing the religious fasting. Many of the Muslim women perhaps due to the family and societal pressures or lack of proper information hesitate and fail to avail themselves of the generous provisions of temporary or permanent exemptions from fasting available in Islam. It is therefore important that medical professionals as well as the general population be aware of potential risks that may be associated with fasting during *Ramadan*. This familiarity and knowledge is as important in South Asia and the Middle East as it is in Europe, North America, New Zealand, and Australia. There has not yet been any statement of consensus regarding women's health issues during *Ramadan*, namely menstruation, sexual obligations of married life, pregnancy, and lactation. This document aims to put forward general guidelines for these issues especially for the South Asian Muslim women.

*Keywords:* Lactation, menstruation, pregnancy, *Ramadan*

