



آغا خان یونیورسٹی  
THE AGA KHAN UNIVERSITY

# *7th Health Sciences Research Assembly*



## *Abstract Book*



*December 20 and 21, 2012*





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## **Message from the Dean Medical College**

Contribution to knowledge society is the hallmark of all leading academic institutions of the world. As AKU continues its journey to be a truly research-led University of the 21st century, it is important to keep fostering and underpinning our research culture and support and forge new multidisciplinary and interdisciplinary collaborations.

AKU's first Health Sciences Research Assembly, held in 2005, was one of the first steps in this direction. The objective was to provide a platform for sharing our ongoing and completed research work. Over the last several years, Health Sciences Research Assembly has become an integral part of AKU's annual academic calendar with abstract submission and participation surpassing expectations year after year.

Considering that the success of research initiatives and programmes relies heavily on exchange of ideas and dissemination of work in progress, I encourage all faculty, fellows, residents and students to actively participate in the two-day event in an effort to make meaningful contributions to the contemporary knowledge-based society and for leaving new footprints on the intellectual landscape for the world.

I wish you all especially the Organising Committee all the best and hope the event meets unprecedented success.

Dr Farhat Abbas  
Dean, Medical College  
Faculty of Health Sciences  
Aga Khan University

**Message from the 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 them. A good example is the collaboration of a physicist and a biologist, using the findings of a crystallographer and competing with a chemist, that led 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 comes from meetings like the 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 organisers of this celebration of the exciting research culture in AKU are to be congratulated on their work and their initiative in making this event happen.

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

## **Message from the Dean Research and Graduate Studies**

The Aga Khan University (AKU) is committed to innovative inter and multidisciplinary undergraduate and postgraduate education and research endeavours. This aim can only be achieved by offering AKU community a rich and fulfilling learning experience, one that connects individual curiosity, intellectual rigor and crosses interdisciplinary boundaries.

The Faculty of Health Sciences focuses its research on 'Social and Economic Determinants of Health,' which can be further divided into six sub-themes, namely (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 drive the intellectual inquisitiveness of faculty, undergraduates, graduates, PGME fellows, research associates, and technical staff who collaborate across other campuses spread over in 3 continents. Our collective aim is to develop new knowledge and innovative solutions to address localised challenges and develop policies and its practice.

The concept of an annual research assembly is an important and bold step that has become part of the University's calendar. The 7<sup>th</sup> Health Sciences Research Assembly provides a unique forum for AKU community to showcase their work, discuss ideas, and to share a wide array of activities and opportunities here. AKU's research is not just new knowledge, or application of the same; but also about developing a steady stream of highly skilled individuals.

It is no doubt a mammoth task to organise a two-day conference. The organisers have worked tirelessly over many months to put together this year's Assembly. I take this opportunity to recognise and thank the organisers for their effort, creativity and passion. Congratulations.

Professor El-Nasir Lalani  
Dean of Research and Graduate Studies  
Professor of Molecular and Cellular Pathology  
Aga Khan University

December 20, 2012.

## **Message from the Chairs Organizing Committee**

Welcome to the 7<sup>th</sup> Health Sciences Research Assembly 2012, which will be held on December 20 & 21, 2012. Following six successful HSRAs, the scope has been expanded from just poster presentations to include a wider range of topics. We extend a warm welcome to delegates from within the university to join us for two exciting days of new ideas dissemination and technical discussions.

The Organizing Committee has assembled an exciting program with over 500 abstracts highlighting the range and depth of research at AKU. The assembly will include keynote speeches by the Deans of Medical College and School of Nursing & Midwifery, Dr Farhat Abbas and Dr Keith Cash respectively. Besides this the founding chair of HSRA, Dr Mohammad Wasay will look at the impact of the seven HSRA in promoting research at AKU. The most important yardstick of research culture in a University is the presentation to publication index (PPI). We will also attempt to look at the PPI of the last six HSRAs.

We are hopeful the community at large will benefit from the wisdom of AKU researchers. The Assembly is open to all and you are invited to participate and benefit from the research experience over donut and coffee.

We also recognize the untiring efforts and uncountable voluntary hours put in by the Organizing Committee members and in particular our staff in the Conference Secretariat i.e. Mohammed Irshad, Dr. Jehangir Khan and our ever reliable Jack Fernandes. We hope this dedication will continue to strengthen and improve future events.

Best wishes

Hammad Ather  
Chair

Asho Ali  
Co-Chair

**Organising Committee**  
**7<sup>th</sup> Health Sciences Research Assembly**  
December 20 & 21, 2012

Dr Hammad Ather, Chair, Organising Committee

Dr Asho Ali (Co-Chair), Organising Committee

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Dr Aisha Yousafzai, Department of Paediatrics and Child Health

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Dr Aziz Jiwani, Department of Family Medicine

Ms Azmat Khan, School of Nursing and Midwifery

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Mr Akbar Lakhani, Department of Pathology and Microbiology

Mr Asad Yaqoob, Conference Secretariat

Mr Muhammad Ehtesham, Conference Secretariat

**7<sup>th</sup> Health Sciences Research Assembly**  
December 20 & 21, 2012

**INAUGURAL SESSION**

Thursday, December 20, 2012  
8:30 – 9:30 am

- Tilawat
- Introduction  
Dr Hammad Ather, Chair, Organising Committee
- Remarks by  
Dr Keith Cash, Dean, School of Nursing & Midwifery
- Remarks by  
Dr Farhat Abbas, Dean, Medical College
- Impact of HSRA on promoting research at AKU  
Dr Mohammad Wasay
- Vote of thanks  
Dr Asho Ali, Co-chair, Organising Committee
- Ribbon cutting: Opening of Scientific Exhibition



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# ABSTRACTS

### 1.1 BILATERAL TOTAL HIP REPLACEMENT DONE SIMULTANEOUSLY SAVES COSTS AND DOES NOT CARRY A HIGHER MORBIDITY

Islam Hussain, Masood Umer, Pervaiz Hashmi  
Department of Surgery, Aga Khan University, Karachi

**Objective:** To evaluate the short term results in patients undergoing one stage BTHA in our institution. Functional recovery, cost effectiveness and immediate peri-operative and post-operative complications were evaluated

**Method:** Retrospective case series of single stage bilateral THA done at a single institution between July 2007 and July 2012. Minimum follow-up was 12 months.

**Results:** Total 12 patients (10 male and 2 female), underwent single stage bilateral total hip arthroplasty between July 2007 and July 2012. Mean age was 41.5 years. Average duration of symptoms was 3.5 years. Mean follow up was 3.2 years (1 – 5.5 years). Average duration of surgery was 286 minutes. The average total length of stay was 11.8 days. The total cost compared with staged total hip was also significantly less. Mean drop in post-operative hemoglobin was 2.17 mg/dl and only 0.9 units per patient were required for post-op blood transfusion. Only one patient had major complication requiring acetabular component revision within the same admission, otherwise there were no major or minor complications.

**Conclusion:** Single stage bilateral THA is a viable option for motivated patients with few comorbid conditions. Complication rates are comparable or even less than the staged THA. The total hospital costs associated with single stage bilateral THA is much less than the staged procedure.

**Keywords:** Hip replacement, orthopedics, fractures

### 1.2 CLINICAL AND BIOCHEMICAL CHARACTERISTICS OF CHILDREN WITH JUVENILE IDIOPATHIC ARTHRITIS PRESENTING TO A TERTIARY CARE CENTRE IN KARACHI, PAKISTAN

Shakeel Ahmed, Syed Rehan Ali, Maqbool Qadir, Sidra Ishaque  
Department of Paediatrics & Child Health, Aga Khan University, Karachi

**Objective:** To determine the clinical and biochemical characteristics of children with Juvenile Idiopathic Arthritis (JIA) at the tertiary care centre in Karachi, Pakistan.  
**Method:** Retrospective cohort, hospital based study  
Setting: Paediatric rheumatology outpatient ambulatory clinic at The Aga Khan University Hospital (AKUH)  
Subjects: Patients referred to specialist Paediatric rheumatology clinic for four consecutive years (from January 2007-December 2010)

**Results:** Sixty eight patients satisfied the criteria of International League against Rheumatism (ILAR) for Juvenile Idiopathic Arthritis were enrolled during the study period of four consecutive years, age ranges between nine months to fifteen years. Mean age at onset was 6.45±4.03 years while mean age at diagnosis was 7.60±3.93 years. Polyarticular was the most predominant subtype with 37 (54%) patients out of these 9 (24%) were

rheumatoid factor positive. An almost equal gender predisposition was observed. Fever and arthritis were the most common presenting symptoms, with only two patients presenting with uveitis

**Conclusion:** The clinico-biochemical characteristics of JIA at our centre shows a pattern distinct from other parts of the world with respect to early onset of disease, increased frequency of polyarticular type and a higher prevalence of rheumatoid factor (QRA) and ANA positivity in girls

**Keywords:** Juvenile Idiopathic Arthritis, Rheumatoid, Autoimmune

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

Akbar Zubairi, Tashfeen Ahmad  
Departments of Surgery and Biological & Biomedical Sciences, Aga Khan University, Karachi

**Objective:** Preoperative planning and templating is an essential part of orthopedic surgery. It helps the surgeon ascertain that the correct prosthetic component sizes are available and hence reduces the burden on hospitals to maintain large stocks of all available implant sizes. The variation in magnification factor of the radiographs is a major challenge during preoperative planning of total hip and knee arthroplasties. Even though digital templating softwares have made templating easy, their accuracy is affected by this variation. The aim of our study was to determine the magnification factor of our pelvic radiographs and to determine the effect of various pelvic dimensions on its magnitude

**Method:** We conducted a retrospective chart and X-ray review of all patients who underwent Austin Moore hemiarthroplasty at our hospital between Jan 2006 and Dec 2007 with both preoperative and postoperative radiographs available in our digital archive. 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. The Pelvic width (distance between the anterior superior iliac spines) and the pelvic height (average distance between both iliac crests and ischial tuberosities) were determined from both preoperative and post-operative radiographs. These dimensions were also used to calculate the difference in magnification of preoperative and postoperative radiographs. Intraobserver and interobserver reliability of measurements was calculated. SPSS version 19 was used for data analysis

**Results:** A Total number of 63 patients were studied with 25 males (39.7%) and 38 females (60.3%). The mean age of the sample was 69.9 ± 12 years. The mean magnification factor was 113 ± 4 % (106-125 %). Mean implant size used was 46 ± 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:** Radiography, Hip fracture, Digital

#### 1.4 EARLY COMPLICATIONS AFTER PROXIMAL FEMUR REPLACEMENT

*Raza Askari, Masood Umer  
Department of Surgery, Aga Khan University, Karachi*

**Objective:** In patients with tumor around the hip most surgeons favor arthroplasty / proximal femur replacement which has a documented excellent success rate and offers the advantage of early weight bearing. The use of arthroplasty in this setting of deficient proximal femur poses its own unique challenges requiring specialized implants.

**Method:** We conducted an audit of our cases which had proximal femur replacement to determine their early complication rate. All cases undergoing calcar bearing hip replacement, proximal femur replacement and total femur replacement were included irrespective of their indications.

**Results:** A total of 20 patients were operated upon in the last three years. Ten (50%) were of proximal femur replacement and 7 (35%) were of calcar bearing total hip arthroplasty 3(15%) had total femur replacement. The mean age was 53 years. There were 9 (45%) males and 11 (55%) females. Indications included tumor and failed hip surgery. Three (14 %) patients had early dislocations out of which 2 could not be reduced and remained dislocated. Two (10%) patients had recurrence of infection because they had infections in their primary surgery also. All other patients remained fine and attained early mobilization.

**Conclusion:** Proximal femur replacement is a good alternative in patients with tumors around the hip region and in patients with failed hip surgery. The absence of abductors after tumor resection makes the soft tissue tension lax during arthroplasty. This requires a very anatomical placement of the implants and any inappropriate placement can lead to early dislocation. Despite our slightly higher complication rate, all other patients remained pain free and achieved early mobilization.

**Keywords:** proximal femur replacement, complications, calcar bearing arthroplasty

#### 1.5 EWING'S SARCOMA IN A CHILD; AMPUTATION VS LIMB SALVAGE: 18-YEAR FOLLOW UP OF A SINGLE CASE

*Raza Askari, Masood Umer  
Department of Surgery, Aga Khan University, Karachi*

**Objective:** The past four decades have seen tremendous progress in the treatment of pediatric and adolescent musculoskeletal sarcomas. As a consequence, there are increasing numbers of adult childhood cancer survivors. This has prompted investigation into the long-term consequences of cancer treatments. One group that merits special study is the survivors of lower-extremity

bone tumors. Their function and quality of life may depend in part on both the surgery and the age at which it was performed. Here we present 18 year follow up of a case of Ewings sarcoma operated for limb salvage.

**Method:** A child presented to us with a swelling at the proximal thigh. Biopsy showed Ewings Sarcoma. Metastatic workup was negative and the Enneking stage was II B. Neo-adjuvant chemo and radiotherapy was given and was operated for wide margin excision and reconstruction with free vascularized fibula was done

**Results:** Patient remained fine but subsequently he underwent multiple procedures for different problems which include subtrochanteric valgifying osteotomy twice for varus angulation at neck shaft angle, change of hip spica twice under GA, removal of DCP and debridement. Ilizarov application for <R> femoral shortening, ORIF, bone grafting and quadricepsplasty for fracture and stiff knee and distal femur valgifying osteotomy. Presently he is walking full weight bearing with a single stick. Knee range of motion is 0 to 30 degrees. Hip flexion is 0 to 50 degrees. MSTS Score is 21/30

**Conclusion:** Patient underwent 8 surgeries over the past 18 years. He still has Coxa Valga predisposing to hip arthritis. Limb length discrepancy is of 2 cm with a stiff knee. This may require more and more procedures. Keeping this in mind the question arises that would amputation have been a better solution here or limb salvage is still an acceptable choice? For answer to this question prospective long-term follow-up of pediatric patients with lower limb tumors is needed to determine in a uniform manner the long-term complications, quality of life, and functionality of this population.

**Keywords:** Ewings sarcoma, limb salvage, long term followup

#### 1.6 EXTRASKELETAL MYXOID CHONDROSARCOMA: CLINICOPATHOLOGIC STUDY OF 12 CASES

*Nasir Ud Din, Aisha Memon, Arsalan Ahmed, Romana Idrees, Saira Fatima, Rashida Ahmed, Naila Kayani  
Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Objective:** To describe clinic pathologic features of EMC on a cohort of cases

**Method:** Twelve cases of EMC were identified from the surgical pathology files of AKUH pathology department reported during 2005-2012. The tumors were analyzed for histological and clinical features, treatments and outcomes.

**Results:** The age ranged from 13 to 65 years (mean 41 years: male to female ratio 1:1). The most common location was lower extremity (8 cases) followed by arm (3 cases) and falx cerebri and saggital sinus of brain (1 case). The tumor size ranged from 4 to 18 cm (mean 9 cm). Histologically, all tumors were composed of multiple myxoid lobules exhibiting cords, strands and clusters of spindle to epitheloid cells with hyperchromatic nuclei and eosinophilic cytoplasm separated by fibrous septa. Mitosis was scarce. The positive immunohistochemical stains were S100 (11/11), vimentin (4/4) and CKAE1/AE3 (1/6, focal). Eight patients were treated with wide excision, one with chemotherapy alone and one with surgery plus radiotherapy. Follow up was

available in 9 patients and ranged from 2 to 56 months (mean 27 months). Two patients presented with lung metastases at diagnosis; one of them died of disease after 2 months. Remaining seven patients were alive and free of disease.

*Conclusion:* EMC is rare STS with a relatively good prognosis despite the presence of metastasis. Primary EMC of brain originating from the falx cerebri and sagittal sinus and occurrence in children is a very rare event, seen in our series.

*Keywords:* Extraskelatal myxoid chondrosarcoma, soft tissue sarcoma, falx cerebri

### 1.7

#### HIP FRACTURE SURGERY: DOES TYPE OF ANESTHESIA MATTER?

*Rizwan Haroon Rashid*

*Department of Surgery, Aga Khan University, Karachi*

*Objective:* Hip fracture Surgery is often undertaken in elderly patients with multiple comorbidities. The impact of anesthesia choice on postoperative morbidity and mortality after this surgery continues to be debated.

*Results:* During this period 194 patients underwent DHS fixation. One hundred and seven (107) patients received general anesthesia whereas eighty seven (87) patients received regional anesthesia. The mean operative time was 1.54 hrs and 1.24 hrs in groups A and B respectively ( $p < 0.05$ ). The mean tip apex distance was 20.54mm and 18.45mm in groups A and B respectively. There was no difference in the rates of wound infection, length of hospital stay, post operative ambulation status, intra op blood loss, post operative complications and mortality between the two groups.

*Keywords:* Hip fracture, Anaesthesia

### 1.8

#### INTERTROCHANTERIC HIP FRACTURES IN ELDERLY PATIENTS: DO WE NEED TO RETHINK FIXATION STRATEGY?

*Muhammad Idrees Shah, Shahryar Noordin, Shah Bano*

*Department of Surgery, Aga Khan University, Karachi*

*Objective:* Intertrochanteric fractures in elderly patients are associated with high rate of complications especially in octogenarian population. In this retrospective study we compared one year results of DHS in octogenarians and relatively younger population.

*Method:* 150 patients who underwent DHS surgery during 2006-2008 were divided in two groups based on their age. Group A comprised of patients 85 years and older ( $n=36$ ) while group B comprised of patients younger than 85 years ( $n=114$ ). All patients were followed at one year for complications, mortality rate, postop ambulatory status and return of baseline functional status.

*Results:* Out of 150 patients 36 patients (24%) belonged to group A while 114 patients (76%) belonged to group B. there was female predominance in group A (67% Vs 50%). Mean age of group A was 88 years while group B had mean age 68 years. Preinjury ambulatory status of the two groups did not differ

significantly. Most common mechanism of injury was level ground fall among both groups. All patients sustained intertrochanteric fracture and underwent surgical fixation after medical optimization when required. Overall 33 % of the patients had at least one comorbid, hypertension being most common (57%) followed by diabetes (31%). At three months follow up only 11 patients (37%) from group A were able to maintain their preinjury ambulatory ability as compared to 54 patients (47%) from group B. At one year follow-up higher proportion of group A were dead than group B (22% Vs 8%). Among patients who had no or minimal decrease in function, about 9% died, while among those who had greater decrease in function, about 45% died

*Conclusion:* Elderly patients sustaining intertrochanteric fracture requiring internal fixation with DHS have higher frequency of complications and death. These complications can be attributed to decreased ambulatory ability after internal fixation in these patients. These complications may be decreased if their ambulatory level is restored to pre injury status with some other kind of fixation such as bipolar or total hip arthroplasty

*Keywords:* intertrochanteric fracture, dynamic hip screw, elderly

### 1.9

#### IS LIMB SALVAGE SURGERY POSSIBLE IN MALIGNANT TUMORS OF FOOT AND ANKLE?

*Sher Baz Khan, Masood Umer*

*Department of Surgery, Aga Khan University, Karachi*

*Objective:* The objective of this paper is to analyze the outcome of surgical therapy for neoplastic disease of the foot and ankle at our institution with special regard to limb preservation in malignant tumors. Advances in imaging, chemotherapy and surgical technique have made limb salvage surgery a treatment of choice in majority of patients with bone and soft tissue malignant tumors. Therapy consisted of curettage, marginal excision, and wide margin excision with flap coverage and/or amputation

*Method:* We had an audit of our tumor registry and both benign and malignant soft and bony tumors of foot and ankle were selected. All other tumors were excluded. A total of 16 patients were identified from 2004 to 2011. Among the variables analyzed in this study were survivals, local recurrence, and pain, swelling and limited walking ability

*Results:* Thirteen patients had malignant and 3 had benign tumors around foot and ankle. The most frequently encountered diagnosis was Ewing's sarcoma. The age range was from 2.5 to 64 years and mean age was 29.6 years. Seven tumors were of soft tissues while 9 were of bony origin. One patient had a forefoot amputation and three had below knee amputation. Twelve patients underwent limb salvage surgery among which wide margin excision with flap coverage was done in 8 patients. Local recurrence was seen in 2 patients and 4 developed distant metastasis.

*Conclusion:* Most patients with malignant tumors around foot and ankle may benefit from limb salvage surgery plus soft tissue coverage. Amputation may still be required in certain difficult situations.

*Keywords:* Tumors, limb salvage, amputation

### 1.10 MAGNETIC RESONANCE IMAGING IN CERVICAL FACET DISLOCATION: A THIRD WORLD PERSPECTIVE

*Manzar Hussain, Sadaf Nasir, Ghulam Murtaza  
Dow University of Health Sciences, Liaquat National Hospital  
and Department of Surgery, Aga Khan University, Karachi*

**Objective:** The object of our study was to determine the change in management brought about by magnetic resonance imaging (MRI) of the cervical spine in alert and awake patients with facet dislocation and spinal cord injury presenting within 4 hours after injury.

**Method:** Retrospective data from 2002-2010 was evaluated. All of the alert and awake patients with spinal cord injury, based on clinical examination with facet dislocation diagnosed on lateral cervical spine X-rays, were included. A questionnaire was also conducted, the data of which consisted of demographic details including age and sex, the mechanism of injury, clinical examination, X-ray findings, MRI findings, whether or not surgery was performed and the time elapsed since injury. Data was analyzed using SPSS ver. 17.0. Continuous variables such as age were expressed in terms of mean  $\pm$  standard deviation. Categorical variables such as change in management, X-ray/MRI findings and neurological motor level were assessed in terms of percentage.

**Results:** Fifty patients participated in our study. All these patients had spinal cord injury with defined motor levels. The mean age was  $35.5 \pm 8.95$  years (range, 20 to 52 years). Fifty percent showed a motor level at C6 level. None of the patients required any change in management based on the MRI.

**Conclusion:** MRI of the spine in awake patients within 4 hours after injury does not change the management of patients. However, we can hypothesize that such patients can proceed to traction without waiting for the MRI.

**Keywords:** MRI, Facet dislocation, Closed Reduction

### 1.11 MRI LUMBOSACRAL SPINE: ARE THE INCIDENTAL FINDINGS SIGNIFICANT?

*Humera Ghulam Nabi, Sumera Akhter, Raza Sayani,  
Anwar Saeed  
Department of Radiology, Aga Khan University, Karachi*

**Objective:** To evaluate the frequency and types of incidental findings of the lumbosacral spine during MR evaluation for back ache.

**Method:** A total of 200 patients (male-to-female ratio, 95:105; Age range, 1-93 years) with clinically suspected herniated intervertebral disk disease underwent MRI of the lumbar spine. Reports were retrospectively reviewed for incidental finding not related to lumbosacral spine problem. Schmorl's nodes, Tarlov cyst, lesion on different area, uterine fibroid renal cyst etc were included.

**Results:** Overall, 45 patients had incidental findings. 22 had abnormalities in Dorsal spine with Schmorl's nodes being dominant, Abnormal signal probably due to metastasis were seen in three. 5 patients had fibroids, 1 had cervical thickening, 3 had hydronephrosis and hydroureters, 4 had Tarlov cysts, 4

had renal cysts, 2 had ascites, One had pleural effusion, one had rectal thickening, one had lymphadenopathy and one had a mass in pelvis extending into the thigh probably an abscess.

**Conclusion:** Incidental findings at MRI of the lumbar spine were common. An awareness of the prevalence of the incidental findings detected at MRI of the lumbar spine is helpful for diagnosing lesions not related to symptoms

**Keywords:** MRI, Incidental finding, Lumbar spine

### 1.12 OPERATIVE MANAGEMENT OF PATIENTS WITH PATHOLOGICAL FRACTURES IN METASTATIC BONE DISEASE-DOES IT HELP?

*Yasir Mohib  
Department of Surgery, Aga Khan University, Karachi*

**Objective:** Bone is the third common site of metastasis after lung and liver.

**Method:** Most distressing feature is pathologic fracture that can cause severe pain and lead to problems of recumbence. The majority of metastatic bone lesions are treated effectively with non-surgical modalities such as radiation therapy, chemotherapy, hormonal therapy and bisphosphonates. Operative treatment may be required for patients with an existing or impending pathological fracture or with intractable pain that does not respond to any non-operative procedures.

**Results:** This retrospective study included a total of 107 patients coming to a single institution during 2002-2009. There were 71 males and 36 females. All patients were managed by experienced orthopaedic oncologists and multidisciplinary teams. Patients managed by non-oncologic orthopaedic surgeons were excluded. The prognostic influence of clinical, pathological and treatment variables on musculo-skeletal tumour society score, range of motion, local recurrence rate and death rate were measured. Minimum follow-up was three years.

**Conclusion:** Surgery for metastatic disease is done primarily to improve quality of life and ambulation status and alleviate pain. Our results confirm this principle. Mirels criteria was very useful in deciding when to operate. Adjuvant modalities of radiation and/or chemotherapy must be taken along with surgery.

**Keywords:** Operative management, metastasis, chemotherapy

### 1.13 OUR EXPERIENCE WITH VAN NES ROTATIONPLASTY FOR LOCALLY ADVANCED LOWER EXTREMITY TUMOR

*Raza Askari, Masood Umer, Mohsin-e-Azam, Haroon Rashid  
Department of Surgery, Aga Khan University, Karachi*

**Objective:** Limb salvage surgery may not be possible in locally advanced tumors of the distal femur or proximal tibia. A high above knee amputation or hip disarticulation may not be socially and culturally acceptable to the patient. A middle grade solution saving the distal limb is Van Ness Rotationplasty. We will be presenting our early experience with this time tested technique of tumor reconstruction.

**Method:** Out of a total of 351 cases of bone and soft tissue sarcoma, nine cases underwent Van Ness Rotationplasty in the last five years. We collected demographic data, family history, past history, co morbid, date since diagnosis, duration of symptoms, type of tumor, metastasis, pre op and post op functional status, recurrence and survival.

**Results:** Mean duration of symptoms was 7 months with an age range of 8 - 41 years. All except 1 were osteogenic sarcomas. All except one involved distal femur. All seven had localized Enneking stage IIB disease. Two patients expired due to metastatic disease but none had local recurrence. Complete excision of tumor was achieved in all patients. Longest follow up is of 34 months while shortest is of 6 months No local recurrences were noted. Functional recovery has been good. Two patients had simultaneous sciatic nerve repair as part of the primary procedure. Both of them had good motor function at the time of final follow-up. Mean MSTS score was 23.88.

**Conclusion:** Van Nes Rotationplasty is a successful alternate to amputation in cases of locally advanced tumors of distal femur or proximal tibia.

**Keywords:** Van nes rotationplasty, lowerlimbs, limb salvage

#### 1.14

#### PRIMARY AMPUTATION IN MUSCULOSKELETAL SARCOMAS

*Sher Baz Khan, Masood Umer*

*Department of Surgery, Aga Khan University, Karachi*

**Objective:** Advances in imaging, chemotherapy and surgical technique have made limb salvage surgery a treatment of choice in majority of patients with bone and soft tissue sarcomas. In our society, many patients arrive late and are frequently misguided. Such patients then present to us with a huge mass with locally advanced disease encasing neurovascular bundle and hence pose a significant treatment challenge. Getting a safe proximal margin may be quite difficult in such cases of the pelvis or shoulder. We will be presenting our indications and experience of doing primary amputations in patients with bone and soft tissue sarcomas.

**Method:** We had an audit of our tumor registry and amputations were selected of soft as well as bony tumors. All other amputations were excluded. We then applied musculoskeletal tumor society score to assess the functional outcomes

**Results:** Twenty primary amputations were done from a total of 308 patients (6.4%). The age range from 14 to 60.8 years were of soft tissues while 12 were of bony origin. Fourteen were of lower limb while 6 were of upper limb amputation. Recurrence was seen in 2 patients, 5 patients developed distant lung metastasis and 4 expired. All margins were cleared of all specimens. Complications were of pleural effusion in patients who developed metastasis.

**Conclusion:** Amputation is not a failure but a mode of treatment in patients who have locally advanced tumors and where limb salvage is not possible.

**Keywords:** Amputation, sarcoma, radical excision

#### 1.15

#### R990G POLYMORPHISM OF CALCIUM SENSING RECEPTOR (CASR) GENE IS ASSOCIATED WITH PTH AND CALCIUM LEVELS IN SUBJECTS WITH VITAMIN D DEFICIENCY

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**Objective:** Our previous study has revealed widespread Vitamin D deficiency (VDD) in Pakistani females, along with blunted parathyroid hormone (PTH) response. Two single nucleotide polymorphisms (SNPs), R990G and A986S of the CaSR gene have been shown to influence response of PTH. The aim of this study was to establish an association between CaSR polymorphisms, PTH and calcium levels in females with VDD

**Method:** In our cross-sectional study, 125 females having VDD and known iPTH and calcium levels were recruited. CaSR polymorphisms were analyzed by RFLP-PCR, using genomic DNA extracted from peripheral blood lymphocytes. R990G polymorphism was defined as substitution of Arginine (genotype A/A) with Glycine (G/G), while A986S polymorphism was defined as substitution of Alanine (G/G) with Serine (G/T and T/T). Data was analyzed by SPSS version 19. Quantitative variables were reported as mean±SD. Differences among means were computed by Mann-Whitney rank sum test. P value < 0.05 was considered statistically significant. Binary logistic regression analysis was performed using A986S and R990G SNPs as dependent variable and PTH and calcium as covariates

**Results:** The mean age of volunteers was 30.3±8.3 years. Mean blood levels of iPTH, 25OHD and calcium were 101.04±84.3 pg/ml, 8.2±7.6 ng/ml and 9.02±0.6 mg/dl respectively. Out of 125 females 45 % had secondary hyperparathyroidism (sHPTH) with mean iPTH levels of 151.05±104.1. The GG genotype frequency for R990G polymorphism was 18% (n=23), whereas for A986S, genotype GT was 27% (n=34) and TT 6% (n=8). In subjects with R990G polymorphism, iPTH levels were higher (mean 135.7±134 vs. 90.8±60 pg/ml with p<0.05) and calcium was lower (8.7±1.1 vs. 9±0.4 mg/dl with p 0.07) in the GG genotype group compared to the genotype AA. According to the results of binary logistic regression sHPTH individuals are 4 times more likely to have GG genotype of R990G polymorphism than participants with normal PTH levels. On the contrary, association of A986S polymorphism with serum PTH, or calcium levels was not observed in the present study

**Conclusion:** The GG genotype of R990G polymorphism of CaSR gene is found associated with higher iPTH and decreased calcium levels

**Keywords:** Vitamin D deficiency, Secondary Hyperparathyroidism, Calcium sensing Receptor

**1.16****RELATIONSHIP OF FIBROBLAST GROWTH FACTOR 23 LEVELS WITH DIETARY PHOSPHATE INTAKE AND FRACTIONAL EXCRETION OF PHOSPHATE (FePO4) IN HEALTHY VOLUNTEERS**

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Karachi*

*Objective:* The aim of this study is to assess the relationship between FGF-23 levels, dietary phosphate intake and fractional excretion of phosphate (FePO4) in healthy individuals.

*Method:* 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 is collected by food frequency questionnaire (FFQ) using recall method of food consumed over the period of past one year. FePO4 was also assessed using plasma and urinary specimens of phosphate and creatinine. Plasma samples from 80 healthy adults (mean [±SD] age, 28.87±4.9 years) were studied.

*Results:* Eighty healthy adults of mean age of 29 (± 5) years with 39 males were included in the study. Mean BMI of the study participants was 23 (±4). Normal serum PO4 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 (+ 426.4). 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). Mean FePO4 was 8.9 (± 4.6 %) Positive correlation was found between FGF-23 and Dietary phosphate (r=0.22, p < 0.05) but negative correlation was between FePO4 and FGF-23 (r=-0.26, p < 0.05) both were statistically significant.

*Conclusion:* We conclude that in healthy individuals, changes in dietary phosphate within the physiological range of intakes regulate serum FGF-23 concentrations and suggests that dietary phosphorus have major impact on circulating FGF-23 levels but have minor effects on serum phosphate as it is tightly maintained within limits. This in turn can mediate 1, 25 (OH) 2D productions, at least in part, by changes in FGF-23 levels should be further explore in upcoming studies.

*Keywords:* Fibroblast, Vitamin D, dietary phosphate

**1.17****SINGLE INSTITUTION AND SINGLE SURGEON EXPERIENCE OF LIMB SALVAGE SURGERY IN PEDIATRIC MUSCULOSKELETAL SARCOMA PATIENTS**

*Raza Askari, Masood Umer  
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*Objective:* Advances in imaging, chemotherapy and surgical technique have made limb salvage surgery a treatment of choice in majority of patients with bone and soft tissue sarcomas. This

becomes especially challenging when the patient is young, with open physis, delicately small vessels, limited implant options and absence of a bone bank. We will be presenting our indications and experience of treating pediatric patients with bone and soft tissue sarcomas.

*Method:* We conducted an audit of our tumor registry established since 2008. All tumor cases occurring in paediatric patients (less than 15 years) were included irrespective of their primary tumor and surgery done.

*Conclusion:* Performing limb salvage in young children is a challenging task especially when options are quite limited. Our results show encouraging results with our limited resources.

*Keywords:* Paediatric patients, limb salvage, tumor

**1.18****SINGLE INSTITUTION EXPERIENCE OF COMBINED MODALITY MANAGEMENT OF EWING'S SARCOMA**

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Khan University, Karachi*

*Introduction:* Advances in systemic and local therapies have improved outcomes in Ewing's sarcoma patients. Nevertheless, up to 30-40% of patients with non-metastatic disease at presentation still relapse after treatment and ultimately die of disease progression. We will be presenting our experience in this context.

*Objectives:* To identify the pretreatment and treatment factors that may influence the outcome of Ewing's sarcoma  
*Method:* Retrospective audit of all Ewing's sarcoma patients operated at a single institution between November 2001 and November 2011. Minimum follow up was 12 months.  
*Results:* Total 27 patients (18 males, 9 females) were surgically treated at our institution between November 2001 and November 2011. Mean age at presentation was 14.8 years (5-35 years). Pelvis was the most common site for malignancy 29.6% (8/27 patients) followed by femur 22.2% (6/27), humerus 14.8% (4/27) and calcaneus 14.8% (4/27 patients). Limb salvage surgery was done in 96.7% (26/27 patients), only one patient had below knee amputation. Mean follow up is 2.54 years (1-10 years). Disease recurrence was observed in 6 out of 27 (22.2%) patients; 3 had local recurrence and the other 3 had metastatic disease. Two patients had iatrogenic dura leak in the lumbar spine requiring lumbar drain placement. 25.9% (7/27 patients) patients had deep wound infection and required wound debridement. Two patients had flap failure, and 2 patients developed late osteomyelitis. The overall disease free survival at 2 years was 81.5%. Four patients (14.8%) died of the primary disease.

*Conclusion:* Despite all advances in multimodal management, the challenge to treat Ewing's sarcoma successfully is still open. Although follow-up is short, our results are still encouraging.

*Keywords:* Ewing's sarcoma, retrospective audit



### 1.19 SPINAL CHANGES IN PATIENTS WITH ANKYLOSING SPONDYLITIS ON MRI: A CASE SERIES

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**Objective:** Magnetic Resonance Imaging appearances are described in three cases of Ankylosing Spondylitis (AS). The different appearances of AS on magnetic resonance imaging are described and their significance in relation to the pathology of this condition is discussed. MRI is increasingly used to detect changes in the spine of patients with AS.

**Method:** Standard sequences were, T1-weighted Sagittal, T2-weighted Sagittal images in all patients, with contrast-enhanced T1-weighted imaging. The regions involved were recorded on the basis of these sequences. All MRI scans were performed on a Siemens Avanto (1.5 Tesla) MRI scanner.

**Results:** Spinal changes associated with spondyloarthritis are florid anterior spondylitis (Romanus lesion), florid discitis (Andersson lesion), ankylosis, insufficiency fractures of the ankylosed spine, syndesmophytes, arthritis of the apophyseal and costovertebral joints and enthesitis of the interspinal ligaments.

**Conclusion:** MRI shows different imaging features of AS depending upon the location and extent of the disease process. Familiarity with these features helps in diagnosing Ankylosing Spondylitis helps in reaching up to the correct diagnosis as seen in our case series.

**Keywords:** Magnetic Resonance Imaging, Ankylosing Spondylitis, Andersson Lesion

### 1.20 TEN YEAR EXPERIENCE OF OSSEOUS HYDATIDOSIS

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Dow International Medical College and Dow University of  
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**Objective:** To determine the clinicopathologic characteristics of bone hydatid disease over a period of ten years..

**Method:** All bone hydatid cyst cases diagnosed during 2002 to 2012 at Section of Histopathology, Department of Pathology & Microbiology, Aga Khan University Hospital, Karachi were included.

**Results:** A total of 27 cases of osseous hydatidosis were reviewed. Mean age + SD was 33.88 + 11.44 years. Average lesion size was 5.5 cms. Thirteen (13) were males and 14 were females. The most common clinical diagnoses at the time of presentation were hydatid cyst as suggested by serology, bone cyst, mass and inflammatory process. Most common sites in order of frequency comprised of vertebral column (44.4%), pelvic bones (25.9%), long bones (femur) (22.2%) and mastoid bone (7.4%). Fig.1. Histologically Scoleces were present in 8 cases (29.6%) but calcification was not seen. Follow up was available in 18 cases with mean duration of follow-up of 39.9 months and 6/18 (33%) cases had recurrence.

**Conclusion:** Bone Hydatid disease is uncommon with a predilection for adults, larger size at the time of presentation, affecting unusual locations such as spine, pelvic bones & mastoid. Recurrence is a common phenomenon largely due to difficult and incomplete resection at these difficult locations with restricted options of wide excisions

**Keywords:** Osseous hydatidosis, cyst, histology

### 1.21 TRANSFUSION PRACTICE IN ORTHOPEDIC PATIENTS: DO WE REALLY NEED IT?

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Department of Surgery, Aga Khan University, Karachi*

**Objective:** To determine the proportion of inappropriate transfusions in patients undergoing orthopedic surgery at a tertiary care university hospital and factors associated with inappropriate transfusions.

**Method:** This is a prospective audit from December 2008 to September 2009. We included all patients who were admitted in our orthopedic service and received transfusion, of at least one packed cell. Variables recorded are, pre transfusion hemoglobin level, comorbids, symptoms of hypovolemia, pre transfusion volume replacement with fluids, transfusion reactions, and hemoglobin after 48 hours. Indications of transfusion were assessed in accordance with available data.

**Results:** We have a total of 126 patients with 65 male and 61 female.. Patients were grouped into

'A' those with Hb < 7, 'B' Hb between 7.1 – 10 without IHD, 'C' Hb between 7.1 – 10 with IHD, 'D' Hb > 10. Eighteen (14 %) patients were in group A, 88 (70 %) patients falls in group B, 12 (10 %) patients belongs to group C, and group D had 08 (6 %) patients. Among 126 patients studied, 78 (62%) were transfused appropriately according to the criteria and 48 (38% ) were inappropriate.

**Conclusion:** The numbers of inappropriate transfusion is quiet high and demands revision of institutional policy of packed cell transfusion in accordance with available guidelines.

**Keywords:** Blood transfusion, Orthopaedic surgery

### 1.22 VALIDITY AND AUDIT OF ORTHOPAEDIC POSSUM SCORE IN PATIENTS PRESENTING WITH NECK OF FEMUR FRACTURES.

*Irfan Ashraf, Masood Umer  
Department of Surgery, Aga Khan University, Karachi*

**Objective:** To determine the validity of possum score used for femur neck fracture patients. Possum score as an audit for femur neck fracture patients.

**Method:** Retrospective chart review of operated patients with femur neck fracture during last 2 years was done (i.e. from 1-1-2010 to 31-12-2011). Possum score applied to all these patients. Observed and expected morbidity and mortality were compared using chi square. Data was collected on proforma and analyzed on SPSS-17.

**Results:** A total of 100 patients were operated in last 2 years. 63 were females and 37 were males. The observed 30 days morbidity were 28 while possum predicted morbidity were 42. The p-value came out to be insignificant. After assessing its validity, we used it as an audit and compare the morbidity and mortality with data from other country's hospitals.

**Conclusion:** Possum accurately predicts the outcome and can be used as a tool for comparison of morbidity between different hospitals/units. We cannot comment on possum validity regarding mortality. Only a single mortality was observed in our study, making it difficult to draw any conclusions.

**Keywords:** neck of femur fracture, possum score, audit

### 1.23

#### VARIATIONS IN PRACTICE PATTERNS AMONG NEUROSURGEONS AND ORTHOPAEDIC SURGEONS IN THE MANAGEMENT OF SPINAL DISORDERS

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**Objective:** We wanted to identify variations in the practice patterns among neurosurgeons and orthopedic surgeons for the management of spinal disorders.

**Method:** A questionnaire was distributed, either directly or via e-mail, to the both the neurosurgeons and orthopedic surgeons who worked at 5 tertiary care centers within a single region of Korea. The surgeons were working either in private practice or in academic institutions. The details of the questionnaire included demographic details and the specialty (orthopedic/neurosurgeon). The surgeons were classified according to the level of experience as up to 5 years, 6-10 years and > 10 years. Questions were asked about the approach to lumbar discectomy (fragmentectomy or aggressive disc removal), using steroids for treating discitis, the fusion preference for spondylolisthesis, the role of an orthosis after fusion, the preferred surgical approach for spinal stenosis, the operative approach for spinal trauma (early within 72 hours or late > 72 hours) and the role of surgery in complete spinal cord injury. The data was analyzed using SPSS ver 16. p-values < 0.05 were considered to be significant.

**Results:** Of the 30 surgeons who completed the questionnaire, 20 were neurosurgeons and 10 were orthopedic surgeons. Statistically significant differences were observed for the management of spinal stenosis, spondylolisthesis, using an orthosis after fusion, the type of lumbar discectomy and the value of surgical intervention after complete spinal cord injury. **Conclusion:** ur results suggest that there continues to exist a statistically significant lack of consensus among neurosurgeons and orthopedic spine surgeons when considering using an orthosis after fusion, the type of discectomy and the value of intervention after complete spinal injury.

**Keywords:** neurosurgeon, orthopaedic surgeon, Spinal Cord

### 1.24

#### VITAMIN D DEFICIENCY IN RHEUMATOID ARTHRITIS IN PAKISTAN: DATA FROM A VITAMIN D DEFICIENCY ENDEMIC REGION

*Muhammad Ahraz Hussain, Lena Jafri, Saliha Ishaq, Aysha Habib Khan*

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**Objective:** To evaluate vitamin D status in patients suffering from rheumatoid arthritis (RA) and its association with severity.

**Method:** This was a cross-sectional retrospective study in which medical records of patients from Jan 2010 to May 2010 whose vitamin D levels were tested at the Clinical Laboratory at AKUH were reviewed. Subjects were selected if they had presented with joint or muscular pain and their RA scores were calculated according to the 2010 RA Classification Criteria by American College of Rheumatology (ACR) and compared with their serum 25-hydroxy vitamin D (25OHD). ACR score = 6 was used to classify the patients as RA.

**Results:** The mean age of the patients was 46.5 ( $\pm 15$ ) years; 82.7 % being females. Mean 25OHD in RA and non-RA patients were  $21 \pm 14$  and  $21.6 \pm 14$  ng/ml respectively. ( $p = 0.67$ ). 57.3% of subjects with D deficiency were found to have RA. Among the RA patients, those individuals that had >10 joints affected had a mean 25OHD level of  $18.8 \pm 15$  ng/ml whereas the patients who had =10 joints involved had a mean value of  $25.6 \pm 15.1$  ng/ml ( $p = 0.0016$ ). The mean 25OHD in the patient group with high anti-ccp levels ( $> 40$  U/ml) was 19.4 and in those who had low anti-ccp levels the mean 25OHD level was  $22.7 \pm 15.1$  ( $p = 0.11$ ).

**Conclusion:** Vitamin D deficiency is common in patients suffering from RA with implications in the possible severity of the disease. Replacing vitamin D may be considered while designing a management strategy for RA patients, although this finding is hypothesis generating.

**Keywords:** vitamin D, rheumatoid arthritis, autoimmune

### 1.25

#### DETERMINATION OF BONE HEALTH STATUS WITH VITAMIN D DEFICIENCY (VDD) IN COMMUNITY DWELLING FEMALES IN KARACHI, PAKISTAN

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*Departments of Pathology & Microbiology, Medicine and Community Health Sciences, Aga Khan University, Karachi*

**Objective:** To determine bone health status of premenopausal women residing in selected communities in Karachi, Pakistan on the basis of vitamin D (VD), iPTH and NTx levels and to find out prevalence and correlates of vitamin D deficiency (VDD).

**Methods:** A cross-sectional study was conducted in randomly selected communities (Saddar, Gulshan and Malir Town) in Karachi, Pakistan. Information related to socio-economic and

demographic characteristics (age, education, employment and household income), housing structure, sunlight exposure and skin pigmentation as well as dietary intake (using a food frequency questionnaire) was collected. Serum Vitamin D3, NTx and plasma iPTH were measured. Mean, SD and frequencies were computed for all observed parameters and data was further analyzed by ANOVA and Chi-square test. Multiple linear regression analysis was done to find out correlates of VDD. *Results:* Total 305 premenopausal females were recruited. Mean  $\pm$  SD of age, BMI and waist circumference were  $31.97 \pm 8.0$  years,  $25.06 \pm 5.6$  kg/m<sup>2</sup> and  $88.42 \pm 13.3$  (cm), respectively. Most of the females were VD deficient (91.50 %) with mean VD levels of  $8.99 \pm 10.85$  ng/dl. iPTH and NTx level were high in 39% and 16% females respectively. Results of multivariate regression analysis showed town of residence, age and type of housing structure were significant determinants of VD levels in community females.

*Conclusions:* VDD is highly prevalent in community dwelling females of Karachi, Pakistan. Age, town of residence and type of housing structure are the significant determinants of VD levels.

*Keywords:* Bone health, vitamin D deficiency, community, correlates of VDD

#### 1.26

DIAGNOSTIC UTILITY OF ANTI-CITRULLINATED PROTEIN ANTIBODY IN RHEUMATOID ARTHRITIS AND ITS COMPARISON WITH RHEUMATOID FACTOR IN PATIENTS FROM A TERTIARY CARE HOSPITAL OF PAKISTAN.

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*Objective:* The diagnostic utility of antibodies to cyclin citrullinated antigen (anti-CCP) was evaluated and compared with rheumatoid factor (RF) in the diagnosis of rheumatoid arthritis (RA).

*Methods:* Medical charts of patients who were tested for RF and anti-CCP from January 2010 to May 2010 were reviewed. Scoring and classification of RA was done using the 2010 RA Classification Criteria by American College of Rheumatology (ACR). To classify a patient as having definite RA, history of symptom duration, thorough joint evaluation, and at least 1 serologic test (RF/anti-CCP) and 1 acute-phase response measure (ESR/CRP) were evaluated. The study was given exemption by the institution's ethical review committee

*Results:* Out of the 98 charts reviewed ACR criteria showed 54 cases with RA. Mean age of the group was  $46 \pm 15$  years, 82.7% being females. High titers of anti-CCP corresponded with the ACR scores. Median anti-CCP levels showed a rising trend with increasing ACR scores. The levels of anti-CCP were positively correlated with their ACR scores ( $r = 0.46$ ,  $p < 0.01$ ). Mann Whitney U test showed that patients with RA (ACR score = 6) had significantly higher anti-CCP levels as compared to those without RA (ACR score <6) ( $p$  value <0.001). The sensitivity

and specificity of anti-CCP and RF reactivity for the diagnosis of RA were 54.7 % and 95.5 % versus 59.3% and 88.4 % respectively.

*Conclusions:* Anti-CCP is useful for the diagnosis of RA due to its higher specificity as compared to RF and can predict disease severity.

*Keywords:* Rheumatoid arthritis, rheumatoid factor, anti-CCP

#### 1.27

HIGH PREVALENCE OF OSTEOPENIA AND OSTEOPOROSIS IN AN APPARENTLY HEALTHY, ADULT PAKISTANI POPULATION RESIDING IN A RURAL COMMUNITY

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*Objective:* To find out the prevalence of osteopenia and osteoporosis in apparently healthy males and females residing in rural areas of Pakistan

*Methods:* This study was carried out in a rural community at a distance of 50 KM from Karachi. All individuals between the ages of 35 – 70 years who were permanent residents of the rural community were invited to participate in the study ( $n = 238$ ). Bone mineral density was measured by heel ultrasound and T-scores were calculated.

*Results:* Out of total of 238 participants, 46.2% were males and 53.8% were females. The mean age of the study participants was  $50.27 \pm 9.8$ . Mean T-score was -1.24. We observed a high prevalence (45.8%) of osteopenia and osteoporosis (16.4%) in our study participants. Females (51.6 %) were significantly ( $p$  value = 0.003) more osteopenic (51.6%) and osteoporotic (20.3%) than male participants (39.1% and 11.8% respectively). We had presumed that the prevalence of osteopenia and osteoporosis would be negligible in our rural community owing to their healthier life style such as better dietary habits i.e. intake of milk and milk products and more physically demanding work and increased walking for transportation. Our findings suggest that rural Pakistani population may have drastically changed their lifestyle which is no longer protective against osteoporosis. *Conclusion:* The high prevalence of osteopenia and osteoporosis in apparently healthy individuals residing in a rural community in Pakistan is alarming. Further, large community based studies need to be conducted to assess the magnitude of the problem in Pakistan.

*Keywords:* Osteopenia, osteoporosis, rural community, Pakistan

**2.2****RE-ADMISSIONS IN CORONARY INTENSIVE CARE UNIT AFTER CARDIOTHORACIC SURGERY IN A TERTIARY HEALTH CARE SETTING***Saira Amirali**Nursing Services, Aga Khan University, Karachi*

**Objective:** The aim of this study was to; assess the rate of readmission in Coronary Intensive Care Unit (CICU) after cardiothoracic surgery, to determine the consequences of these readmissions, to compare our data with literature and to identify the factors responsible for readmissions.

**Method:** We had retrospectively reviewed the data of all the post op cardiothoracic surgery patients transferred to CICU from January to December 2011.

**Results:** Out of 504 patients admitted to CICU after cardiothoracic surgery 18 (3.6%) were readmitted to the CICU during the same hospitalization for different reasons. Out of these 18 patients, 8 (44%) had a prolonged CICU stay and 1 (5.6%) expired after the readmission.

**Conclusion:** The result of our study is comparable with international literature. Thoracic and cardiac cases contributed equally for the re admissions. Cardiovascular and respiratory deterioration were the most common reasons for readmissions. Other likely causes include premature shifting, renal failure and sepsis. Vigilant nursing assessment and participation in discharge planning of the high-risk patients may help to reduce the rate of CICU readmission, with a possible decrease in mortality, length of stay, and cost.

**Keywords:** Re-admission, CICU, cardiothoracic

**2.3****AN AUDIT OF ACUTE CORONARY SYNDROME LOCALLY DEVELOPED PROTOCOL OF ASSESSMENT, TREATMENT AND OUTCOME: EXPERIENCE FROM EMERGENCY DEPARTMENT OF TERTIARY CARE HOSPITAL KARACHI, PAKISTAN.***Mumawar Khurshheed, Jabeen Fayyaz, Asher Feroze, Nishi Shakeel**Department of Emergency Medicine, Aga Khan University, Karachi*

**Objective:** To audit the acute coronary syndrome pathway for the patients with acute chest pain in the ED of tertiary care hospital.

**Method:** This was a cross sectional audit of case files of patients with Acute Coronary Syndrome (ACS) visiting AKUH- ED from October 2011-December 2011. The case records of all patients older than 16 years, with the complaints of chest pain or symptoms suggestive of Acute Coronary Syndrome (ACS) were reviewed. Data regarding patient's demographic information, time between triage and physician seen, between physician seen and ECG done, drugs for standard ACS was ordered or not and if ordered than time of administration, time of cardiology consult and time patient was seen by consult service, PCI done or not, time of door to balloon, ED LOS, Hospital LOS, admitting and discharge diagnosis and patient outcome. Data was analyzed using SPSS version 19.0

**Results:** Total 230 patients was included in the study, 144 (62.6%) patients were male and 86 (37.4%) were female with mean age of 58.9±13.7 (range 27-88 years). ED physicians saw most of patients within 30 minutes of their arrival. Chest pain and vomiting were the top most presenting symptoms accounting for 62.2% (n=143) and 62.6% (n=144) respectively. ECG done in 93 patients (47.7%) within 10 minutes after seen by ED physician, while 51 (26.2%) had it between 11-30 minutes and 51 (26.2%) after 30 minutes. Two hundred and seven (90%) patients received Aspirin after their arrival to ED, out of which 80 patients (41.9%) received it within 10 minutes. Anticoagulation (heparin OR enoxaparin) was given to 155 patients (67.4%) out of which 46 patients (32.9%) received it within 10 minutes. Beta-blocker was received by 38 patients (16.5%) out of which 13 patients (40.6%) received it within 10 minutes. Cardiology consult was generated for 212 patients (92.2%) out of which 75 consults (37.7%) were generated within 10 minutes. One hundred and fifteen patients (50%) were admitted to the hospital while equal numbers of patients were disposed from ED. out of 115 patients who admitted in the hospital the most common admitting diagnosis was ACS in 44 patients (38.3%)

**Conclusion:** implementing ACS pathway with audits at regular interval can result into improve care for patients coming with the complain of chest pain in the emergency department .

**Keywords:** Acute coronary syndrome, ER, Pakistan

**2.5****ARE BP READINGS AFTER A PHYSICIAN'S ENCOUNTER MORE REPRESENTATIVE? A CROSS-SECTIONAL STUDY IN AN OUTPATIENT SETTING IN KARACHI, PAKISTAN***Hunaina Shahab, Hamza Sohail Khan, Aysha Almas, Sohail Abrar Khan, Aamir Hameed Khan**Aga Khan University, Ziauddin Medical University and Tabba Heart Institute, Karachi*

**Objective:** Anxiety associated with the patient-physician encounter is implied as the cause of white-coat effect. Once this anxiety is over, the blood pressure (BP) values should also decrease, intuitively representing the true mean BP. The objective of this study was to determine the difference in BP readings taken before, during and 15 minutes after the clinic encounter.

**Method:** A cross sectional study was carried out amongst 180 participants, aged 18 years and above, attending the cardiology outpatient clinic. Pre-clinic BP was measured by a nurse during the initial assessment. The in-clinic BP reading was taken inside the clinic room by the physician. Subsequently, participants were asked to wait for 15 minutes and two further post-clinic BP readings were taken at an interval of 1 minute. All BP readings were taken using the automated and validated BP apparatus Omron HEM7221-E.

**Results:** There were 180 participants. Males were 57%. Of these, 130(71%) were hypertensive and 50(29%) were normotensives. The mean (SD) SBP taken pre-clinic, in-clinic and post-clinic (after 15 minutes) were: 123.87±20.06mmHg, 130.92±22.80mmHg, 125.52±20.01mmHg and 120.92±21.457mmHg, respectively {p value 0.004}. The mean (SD) DBP taken pre-clinic, in-clinic and post-clinic (after 15 minutes) were: 74.48±11.80mmHg, 80.98±12.70mmHg, 78.86±11.84mmHg and 78.78±11.181mmHg, respectively

{ $p < 0.001$ }. The mean difference between post-clinic SBP and in-clinic SBP was  $10.00 \pm 2.2$  mmHg { $p$ -value 0.0001}.  
*Conclusion:* The study shows that the BP readings taken in the post-clinic period are the lowest of the visit. This significantly lowered post-clinic BP reading makes the in-clinic BP reading unreliable to diagnose or manage hypertension.

*Keywords:* Post-clinic BP, In-clinic BP, Pre-clinic BP

## 2.7

### ASCENDING AORTIC ANEURYSM ASSOCIATED WITH POSTDUCTAL COARCTATION OF AORTA

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*Case Report:* The incidence of aortic aneurysm is 10.4 cases per 100,000 persons per year. Approximately 20% of thoracic aortic aneurysm are attributed to some form of genetic syndrome. Connective tissue disorders, mutations in growth factor receptors, or congenital anomalies are other predisposing conditions leading to aneurysm. Yet, as in our case, the pathogenesis of aneurysm may also be idiopathic. We report a case of a 22-yr female with cardiovascular symptoms diagnosed primarily as hypertensive and later diagnosed as having an ascending thoracic aneurysm along with a postductal coarctation of the aorta. Total correction with simultaneous repair of both pathologies was successfully carried out via a single staged procedure because of the higher risk morbidity and mortality rates associated with staged techniques. We have concluded that coarctation of the aorta with concomitant cardiac lesions can be repaired simultaneously minimizing morbidity and mortality

*Keywords:* Ascending aortic aneurysm, Coarctation of aorta, Median sternotomy

## 2.8

### ATRIAL MYXOMA ARISING FROM MITRAL VALVE ANNULUS- A RARITY

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*Case:* 50 year old lady presented with chest heaviness and shortness of breath. She had an angiography which showed tight LAD stenosis for which an angioplasty was performed. Following angioplasty she had a near syncopal episode. An echocardiogram was performed which showed a large left atrial myxoma with half of it protruding through the mitral valve into the left ventricle causing severe mitral regurgitation. Urgent Open heart surgery was planned. Under Cardiopulmonary Bypass, via Superior Septal approach the left atrium was opened. Very friable atrial myxoma was identified arising from the antero lateral portion of the annulus of the mitral valve. The base of the myxoma was identified and excised completely. The entire myxoma was then delivered out of the heart. The annulus was then repaired with

interrupted 4 0 Prolene sutures. Mitral regurgitation resolved completely. There were no postoperative complications and patient was discharged home in a perfect health.  
*Conclusion:* Atrial Myxomas are the most common cardiac tumors and they usually arise in the left atrium from the inter-atrial septum. Tumors arising from the annulus of the mitral valve are rare. We present successful treatment of large atrial myxoma which was arising from this rare location.

*Keywords:* Myxoma, cardiac, mitral

## 2.9

### BILATERAL TENSION PNEUMOTHORAX SECONDARY TO HISTIOCYTOSIS X AND ITS TREATMENT VIA VIDEO-ASSISTED THORACOSCOPIC SURGERY (VATS)

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*Case Report:* Langerhans cell histiocytosis (LCH) is a rare disorder and treatment of its complications including spontaneous pneumothorax is also an evolving field. In the past only one attempt at employing Video-assisted thoracoscopic surgery (VATS) for treating bilateral spontaneous pneumothorax (SP) secondary to histiocytosis has been cited in literature. We present to you a case of a 17 year old male who presented with the clinical and radiological features suggestive of Langerhans cell histiocytosis. The patient on initial evaluation had developed right sided spontaneous pneumothorax followed a day later by spontaneous pneumothorax on the opposite side. The role of VATS in the treatment of primary spontaneous pneumothorax is undisputed, however thoracic surgeons are reluctant to use VATS as a surgical approach in treating secondary spontaneous pneumothorax. Our experience, of the treatment of bilateral spontaneous pneumothorax secondary to histiocytosis with bilateral VATS, could lay the grounds for the use of this surgical approach to treat this complication of Langerhans cell histiocytosis

*Keywords:* Histiocytosis X, VATS, Tension Pneumothorax

**2.10****B-TYPE NATRIURETIC PEPTIDE VERSUS AMINO TERMINAL PRO-B TYPE NATRIURETIC PEPTIDE: CHOOSING THE OPTIMAL HEART FAILURE MARKER IN PATIENTS WITH IMPAIRED KIDNEY FUNCTION.**

*Lena Jafri, Waqar Kashif, Javed Tai, Imran Siddiqui, Iqbal Azam, Hira Shahzad, Farooq Ghani*  
*Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Objective:** The effect of impaired kidney function on B-type natriuretic peptide (BNP) and N-terminal proBNP (NT-proBNP) is not clear. This study was performed to examine the influence of kidney dysfunction on these markers and determine appropriate cutoffs for heart failure.

**Method:** Adults with estimated glomerular filtration rate (eGFR) <60ml/min for =3 months were identified in consulting clinics from June 2009 to March 2010. Heart failure was defined as documented by a cardiologist with ejection fraction < 40% and assessed by New York Heart Association classification (NYHA). Plasma was assayed for creatinine (Cr), BNP and NT-proBNP.  
**Results:** The mean age of patients was 58 ( $\pm 15$ ) years, 67.4% being males (n=190). BNP (r= -0.3) and NT-proBNP (r = -0.5) showed an inverse relationship with eGFR. Mean BNP levels in patients with chronic kidney disease (CKD) stage 3 to stage 5 showed a 2.5 fold and 1.5 fold increase in patients with and without heart failure respectively. NT-proBNP levels in non-heart failure group were 3 fold higher in CKD stage 5 compared to stage 3. Mean NT-proBNP levels were 4 fold higher in CKD stage 5 compared to stage 3 in patients with heart failure. The overall area under the curve for BNP and NT-proBNP was 0.70 and 0.86 respectively.

**Conclusion:** BNP and NT-proBNP were elevated in kidney dysfunction even in the absence of heart failure; however the magnitude of increase in NT-proBNP was greater than that of BNP. Both can be useful in diagnosing heart failure, nonetheless by using higher cutoffs stratified according to kidney dysfunction, NT-proBNP appears to predict heart failure better than BNP

**Keywords:** B-Type Natriuretic Peptide, Heart Failure, NT-proBNP

**2.11****CARDIOPULMONARY RESUSCITATION IN CHILDREN PRESENTING TO EMERGENCY DEPARTMENT WITH CARDIAC ARREST**

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**Objective:** Introduction Cardiac arrest in children is an emergency which is characterized by the cessation of normal circulation of the blood due to failure of the heart to contract effectively. United States data showed that every year more than 160000

patients died of sudden cardiac death. Limited data available on CPR in pediatric population especially in the low and middle income countries. objective 1) To study the outcome of cardiac arrest in all pediatric patients presenting to Emergency Department of the tertiary care center

**Method:** This study is a retrospective review of CPR sheets and medical records of all paediatric patients (less than 16 years ) who either arrived to ED with cardiac arrest or had cardiac arrest during their ED stay, CPR was performed on them as per PALS guidelines. The study was a retrospective chart review from Jan 2011 – Dec 2012. Data was collected on a structured Utstein style template. Variables included in the study were date and time of arrest, arrest occur outside the hospital or in ED, if it occurs in ED the location inside the ED, time code was announced and attended, age and gender of the patient, initial cardiac rhythm, time to definite treatment, treatment received during CPR, time form code to defibrillation and return of spontaneous circulation . Data was analyzed using SPSS version 19.0  
**Results:** Total number of CPR conducted in the ED was of 1057 patients among them pediatric patients were 98 (9.3%). Nineteen percent of patients had pulmonary complains, 15 (15.3%) had infectious diseases, 13 (13.3%) had cardiac issues, 6 (6.1%). Thirty percent patient came to ED in a state of unresponsiveness not attributed to any organ/ system and 4 (4.1%) were DOA. Majority of the patient had asystole (36.7%), brady arrest (31.6%) and PEA/EMD (24.5%) as the initial rhythm at the time of CPR. Return of spontaneous circulation was observed in 49% (n=48) of patients

**Conclusion:** Cardiac arrest is an important cause of visiting ED in children with less than half of the patient having initial return of spontaneous circulation after resuscitation

**Keywords:** cardiac arrest, emergency department, children

**2.12****CARDIOVASCULAR BENEFITS OF PAKISTANI ALMONDS**

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**Objective:** Despite its ranking in the top 20 in almond growing countries of the world, Pakistan over-relies on imported almond. Reasons might be lack of scientific literature on the medicinal values of Pakistani almond varieties. We investigated Pakistani almond - Talwar for action on serum lipid, glucose and some additional mechanisms underlying cardiovascular diseases (CVDs).

**Method:** Talwar at three doses (1, 2 and 4g/kg) were tested in high-fat diet (HFD) induced hyperlipidemia rat model. 35 SD rats were divided in 5 groups. All groups except group 1 (normal diet: ND) were given HFD. Group T1, T2 and T4 were given weighed pieces of Talwar with 2 hour fasting. After four weeks, blood was collected and serum triglyceride (TG), total cholesterol (TC), LDL, HDL, Glucose, uric acid (UA), phosphorus (Phosp), Alanine aminotransferase (ALT), Aspartate aminotransferase (AST) and alkaline Phosphatase (ALP) were estimated. TC/HDL,

LDL/HDL, atherogenic index (AI) and AST/ALT ratios were calculated.

*Results:* HFD lead to highly significant increase in TC, LDL, AI, TC/HDL, LDL/HDL, TG, Gluc, UA, Phosp, ALP, AST, and ALT. This increase was significantly inhibited by Talwar and the effects were not dose-dependent. The levels of HDL and AST/ALT were not significantly different ( $p$ -value > 0.05) in HFD compared to ND, and therefore effect of Talwar on these parameters remains inconclusive.

*Conclusion:* Although the lipid modifying effect of almond is known, but this is the first study highlighting the medicinal value of Pakistani almond – Talwar. Some additional mechanisms, not previously reported were effects of almonds on serum UA, Phosp, ALP, AST, ALT and AST/ALT ratio.

*Keywords:* Almonds Pakistani, Liver enzymes, CVD risk markers

### 2.13

#### CHOLESTEROL-CHOLATE INDUCED-CARDIOVASCULAR DYSFUNCTIONS IN RATS

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*Objective:* High fat diets (HFDs) have been routinely used to induce hyperlipidemias in rats. This study highlights its effects on serum uric acid, phosphorus and liver enzymes' levels. Effects of two hour fasting, on the extent of hyperlipidemia was also studied.

*Method:* 28 adult SD rats were divided into 4 groups. Group 1 and 2 were fed normal diet (ND) and group 3 and 4 were fed high fat diet (HFD) containing 2% cholesterol, 0.5% cholic acid and 5% butterfat for 4 weeks. Only group 2 (ND-F) and Group 4 (HFD-F) were fasted daily for 2 hours. Blood was drawn through tail vein puncture and serum levels of triglyceride (TG), total cholesterol (TC), LDL, HDL, glucose (gluc), uric acid (UA), phosphorus (Phosp), Alkaline Phosphatase, (ALP), Aspartate aminotransferase (AST) and Alanine aminotransferase (ALT) were estimated. Atherogenic index, TC/HDL, LDL/HDL and AST/ALT ratios were calculated.

*Results:* HFD led to significant increase not only in TG, TC, LDL and glucose but also UA, Phosp, ALP, AST and ALT. Effects of fasting in both ND-F and HFD-F groups were non-significant ( $p$ -value > 0.05) for almost all parameters. But HFD-F had greater increase in lipids compared to HFD. However, the effects of fasting in improvement of model were non-significant for serum glucose, UA, Phosp, ALP, AST and ALT levels.

*Conclusion:* This model of hyperlipidemia can be employed for mechanistic studies of non-traditional CVD risk markers and liver function impairments. Just by withdrawing the rats' food daily for two hours, the extent of hyperlipidemia induced by HFD can be enhanced.

*Keywords:* High fat diet, fasting, CVD risk markers

### 2.14

#### DATA COLLECTION FROM ACUTE CORONARY SYNDROME PATIENTS: VALIDATING THE URDU TRANSLATED MODIFIED RESPONSE TO SYMPTOMS QUESTIONNAIRE

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*Objective:* Based on a thorough literature review and an analysis of the current situation of cardiovascular diseases in the country, it was deemed imperative to measure the factors associated with prehospital delay among Pakistani Acute Coronary Syndrome (ACS) patient population. None of the tools was available in Urdu language to serve this purpose. Therefore, the "Response to symptoms questionnaire" (RSQ) was translated into Urdu. In order to ensure its contextual relevance and clarity after translation, its validity and reliability testing was done as part of a larger study, measuring the factors associated with prehospital delay among ACS patients in Karachi, Pakistan. *Method:* After making certain modifications, the original tool in English, was translated into Urdu. Next, five cardiology experts evaluated the tool for its content and face validity. Test retest and inter rater reliabilities were computed for the RSQ using 5% of the total sample size ( $n=249$ ) of the parent study. *Results:* Sufficient conceptual and semantic equivalence was found between the Urdu and English versions of the modified RSQ. Content validity index was calculated to be 1 for both relevance and linguistic clarity. Test retest and inter rater reliabilities were calculated to be 95.9% and  $K=0.97$ , respectively. *Conclusion:* The Urdu translated modified RSQ has sufficiently acceptable content validity, test retest and inter rater reliability; hence it should be used by the researchers for the evaluation of factors associated with prehospital delay among Urdu speaking ACS patient populations.

*Keywords:* Validity index, questionnaire, coronary, Urdu translation

**2.15****DELIVERING ENHANCED CVD-HYPERTENSION CARE THROUGH PRIVATE HEALTH FACILITIES IN PAKISTAN**

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**Objective:** Non Communicable Diseases (NCDs) cardiovascular diseases (CVDs) are the leading causes of death and disability in the world. Over 80% of CVD deaths take place in low- and middle-income countries. One-third of the population aged above 40 years suffers from Hypertension (HTN) and this is largely unreported as there is no registry for NCDs. No guidelines are available for use in health care facilities, especially private health facilities where practice among GPs varies considerably. We aim to conduct a Cluster Randomized Controlled trial delivering a quality HTN-CVD care package at strengthened private health facilities as compared to current practice at private health facilities.

**Method:** A pragmatic cluster randomized trial, with qualitative and economic studies, will be conducted in Sargodha district of Punjab, Pakistan, from January 2012 to December 2016. At least 912 hypertensives will be registered in the two arms, six clusters per arm. The proposed cluster randomized controlled trial will evaluate the effects of delivering quality HTN-CVD care, through enabled private health care facilities, to achieve better case registration, adherence and hypertension control (also blood glucose and serum cholesterol control). The trial will be conducted through the doctors and paramedics at private health facilities. Main outcomes are mean difference in Systolic blood pressure among the two arms. Secondary outcomes are mean change in total serum cholesterol levels and mean change in glycaemic control achieved in the adult hypertensive patients. Individual and Cluster level analysis will be done according to intention-to-treat. Trial registration: Current Controlled Trials ISRCTN34381594

**Keywords:** Cardiovascular disease, Public Private Mix, Urban health

**2.16****DEMOGRAPHIC AND CLINICAL CHARACTERISTICS OF MEN AND WOMEN PRESENTING WITH ACUTE CORONARY SYNDROME AT TWO TERTIARY CARE HOSPITALS IN KARACHI, PAKISTAN**

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*School of Nursing & Midwifery, Departments of Medicine and Nursing Services, Aga Khan University, Karachi, University of Kentucky, USA, College of Nursing and Al-Noor Hospital Al-Ain, Dubai*

**Objective:** To study the demographic and clinical characteristics of patients with acute coronary syndrome (ACS). To identify patients at risk of developing ACS. To identify the differences between male and female ACS patients.

**Method:** As part of a larger cross-sectional study was approved by the AKU's ethics committee, data was collected about the demographic and clinical characteristics of ACS patients. Data was collected using investigator designed demographic and clinical data forms. The study settings were the two tertiary care hospitals in Karachi, that provide cardiology related services. A total of 249 participants, recruited through purposive sampling from a private and a government hospital.

**Results:** 249 patients diagnosed with ACS of which males comprised 53.4%, while 46.6% were females. The mean age of male study participants was  $56.46 \pm 11.67$  years and the mean age of females was  $55.77 \pm 11.77$  years (P-Value: 0.647). Most men (89.5%, n= 119) were married, whereas a substantial percentage (39.7%, n= 46) were widows. A statistically significant difference was also found between the occupations of the two genders; around three fourth men (72.2%, n= 96) were working in different capacities, whereas the majority of women (92.2%, n=107) were housewives. The household monthly income of men were significantly better than women. Previous coronary intervention was found to be more in men than in women, though the difference was statistically not significant; data revealed that around 16% (n=21) of men compared to 9.5% (n=11) of women had previously undergone angioplasty or coronary artery bypass graft (CABG). As far as the modifiable risk factors, such as smoking, only 0.9% women versus 50 % men smokers. No significant difference was found between the two genders in terms of a family history of heart disease (P-Value: 0.195). **Conclusion:** The predominant demographic and clinical characteristics of male and female ACS patients, highlighted through the above results, will be helpful in identifying those characteristics that put Pakistani men and women at risk of ACS.

**Keywords:** Demographic characteristics, clinical characteristics, acute coronary syndrome



## 2.17

### DOES DOWN SYNDROME IN PEDIATRIC AGE GROUP INCREASE THE RISK OF COMPLICATIONS RELATED TO CORRECTIVE OPEN HEART SURGERY

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**Objective:** Down syndrome more commonly referred to as Trisomy 21 is one of the most common congenital anomalies in children occurring in 5400 out of the 14 million live births in the US alone. Patients of Down syndrome have a high incidence of congenital heart defects and are more predisposed to respiratory infections, bowel obstruction and leukemia. Our objectives were to investigate the outcomes of pediatric patients with down syndrome undergoing open heart surgery for congenital heart defects and documenting the in-hospital complications at a tertiary care teaching hospital in Karachi.

**Method:** Patients undergoing congenital heart surgery with down syndrome over a period of five years (June 2006 – December 2011) were reviewed by structured questionnaire.

**Results:** There were 25 patients with down syndrome. 4 patients had incomplete medical records and were excluded from the study cohort. The median age was 4 years 2 months. The most common primary diagnosis was ventricular septal defect occurring in 28.6% of the patients. Pulmonary artery hypertension was present in 52.4% of the patients. The median cardiopulmonary bypass time was 135 minutes; the median cross clamp time was 80 minutes. The median CICU stay was 48 hours. Postoperatively, approximately 50% of the patients developed complications. Among postoperative complications the most common were lung related complications occurring in 43.6% of the patients. There were no mortalities in the sample

**Conclusion:** Down's syndrome is associated with CHD. These patients tolerate corrective cardiac surgery with use of cardiopulmonary bypass similar to non-downs patients though they are prone to more lung related complications. Surgery should be offered to down patients with proper parent counseling related to morbidity.

**Keywords:** Downs, Pediatrics, cardiac surgical procedures

## 2.18

### DOSE-INDEPENDENT EFFECTS OF ALMONDS ON CVD LIPID-RISK BIOMARKERS OF IN TWO RAT MODELS OF INDUCED HYPERLIPIDEMIA

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**Objective:** Previously reported almond trials report dose-dependent reductions in serum lipids, but have used relatively high doses. Confounding factors influencing the outcomes include the effect of temperature and food materials accompanying almonds. We

therefore, hypothesized that traditionally used very low doses can be as efficacious as higher doses if given in a uniform manner in empty stomach.

**Method:** Study-I assessed the effects of almonds at 1, 3 and 10g/kg added to food for 4 weeks. Tyloxapol (500 mg/kg i.p.) was used to induce hyperlipidemia, and blood was collected after 18 hours. In study-II rats consumed high fat diet (HFD) for 4 weeks along with 1, 2 and 4g/kg almonds, which were given after 2 hour fasting. Blood was drawn by tail vein puncture. Serum triglyceride (TG), total cholesterol (TC), LDL and HDL were estimated and ratios (TC/HDL, LDL/HDL and Non-HDL/HDL) were calculated.

**Results:** Almond pretreatment prevented increase in TG, TC and LDL, AI, TC/HDL and LDL/HDL in rat model of Tyloxapol-induced hyperlipidemia and effect was not dose-dependent at 1, 3 and 10g/kg. Pretreatment with almond also significantly inhibited the HFD-induced increase in serum lipids at 1, 2 and 4g/kg doses, but the effects were not dose-dependent. Both models HDL, so effect of almonds on HDL remained inconclusive.

**Conclusion:** Low dose of almonds (1g/kg rat equal to 10gm/human) can be equally efficacious as high doses like 10g/kg rat (equal to 100gm/human), which indicate that almonds at low dose is cost effective if taken in empty stomach. Further studies on human are required for validation.

**Keywords:** Almonds, Tyloxapol, High fat diet

## 2.19

### FREQUENCY OF DEVELOPMENT OF POSTOPERATIVE RENAL DYSFUNCTION AND ITS EFFECTS ON OUTCOMES AFTER OPEN HEART SURGERY.

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**Case Report:** A case series study was conducted on patients who underwent open heart surgery at the Cardiothoracic section of the Aga Khan University Hospital from Nov 2011 to Jul 2012. To measure the renal dysfunction, laboratory readings of serum creatinine (SCr) was noted and the glomerular filtration rate (GFR) was calculated by the Cockcroft-Gault equation. The patients' hospital course was charted for demographic and clinical characteristics and after discharge they were followed up for 30-days after surgery. Presence of any of the outcomes of morbidities or mortality was noted. Data was analyzed on SPSS 19. Continuous variables were expressed as mean±SD while discrete variables were reported as frequency (percentages).

**Results:** We studied 145 patients having mean age of 58.9±11.9 years. Out of all, 11.7% were female; 62.1% were hypertensive and almost half (54.9%) had dyslipidemia and 3.4% had a history of preoperative renal dysfunction. Clinically, majority belonged to moderate ejection fraction group (41.4%). Outcome analysis showed 37.2% had postoperative renal dysfunction on 30-days after open heart surgery with mean creatinine and GFR as 1.6 ± 0.7 and 56.9 ± 24.5 respectively. Prolonged inotropic

requirement was reported in 42.8%, dialysis / renal replacement therapy requirement was found in 6.2% and the mortality was 5.5%.

*Conclusion:* The study shows that development of postoperative renal dysfunction after open heart surgery leads to adverse outcomes. The preoperative health of the kidneys is of prime importance and optimisation is required preoperatively as well as perioperatively as it may lead to development of adverse outcomes of morbidities and mortality.

*Keywords:* Renal Dysfunction, Open Heart Surgery, Cardiopulmonary bypass

## 2.20

### GIANT RIGHT ATRIAL MYXOMA PRESENTING WITH HICCUPS AND FACTOR VII DEFICIENCY

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*Case Report:* 64-year-old man with a history of hypertension and ischemic heart disease who presented with progressively increasing hiccups and weight loss for the last 6 months. Two months prior to his presentation he had episodes of epistaxis, and during this evaluation he was diagnosed with severe FVII deficiency. The FVII levels were 12% of normal. The patient did not give any previous history of bruising or bleeding, and this was a new finding. A CT scan of his chest demonstrated a giant 10-cm intracardiac radiolucent filling defect in the right atrium that protruded into the right ventricle, suggestive of right atrial myxoma. Subsequent transesophageal echocardiography established a right atrial mass with grade I left ventricular diastolic dysfunction. Preoperative coronary artery angiography showed 80% stenosis of the posterior descending and first obtuse marginal arteries. Patient was taken to the OR and under cardiopulmonary bypass, right atriotomy was performed. Giant right atrial myxoma was identified, which was protruding into the right ventricle and the inferior vena cava. Stalk of the myxoma was located on the lateral wall of the right atrium. The pedicle was carefully resected, and the entire mass (10.0 by 4.0 by 6.0 cm) was retrieved in one piece. The atriotomy was closed, and two reverse saphenous vein grafts were then placed to bypass the posterior descending artery and obtuse marginal vessels. The rest of the intraoperative course was unremarkable and patient had a complete recovery. Two months later the Factor VII levels were normal and patient has done very well. In conclusion, although the origin of myxoma from the right atrial lateral wall and the resolution of chronic hiccups after the tumor removal are rare clinical findings, even more unusual in our patient is its concomitant presence with severe acquired Factor VII deficiency

*Keywords:* Atrial myxoma, factor VII deficiency

## 2.21

### HEALTH CARE PROFESSIONALS' LEVEL OF KNOWLEDGE REGARDING SEXUAL COUNSELING OF POST MI PATIENTS: A SYSTEMATIC LITERATURE REVIEW.

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*Objective:* Health care professionals (HCP) role in provision of sexual counseling is essential in many chronic diseases; it is especially important in myocardial Infarction (MI). Among patients with MI, sexual problems are highly prevalent, and have been shown to adversely affect patients' quality of life. It is increasingly recognized that sexual counseling is an essential component for HCPs to address in order to provide holistic care to the patients. Despite the widely acknowledged significance of their role in sexual counseling of post MI patients, this sensitive area has often remained neglected in practice and research. Therefore, an attempt was made to review the published literature regarding HCPs' level of knowledge about sexual counseling of post MI patients. The objective of this literature review was to gauge the level of knowledge of the health care professionals in relation to the sexual counseling of post MI patients.

*Method:* A comprehensive literature search was conducted to explore the relevant literature. Various databases i.e. PubMed, CINAHL Plus and Science Direct were used. The key terms used were "Sexuality AND role of nurses", "Sexuality AND myocardial infarction", "Cardiac diseases AND sexual counseling." In addition, manual search was also done by accessing available articles in periodical library. *Results:* It has been reported that 99.4% HCPs do not provide sexual counseling to their patients due to lack of appropriate knowledge to counsel patients. 76.9% nurses were unaware about the specific side effects that cardiac drugs can cause on sexuality of patients. Lack of knowledge was striking in this study as only 1% nurses answered 9 out of 15 questions and 23.1% nurses were unable to answer any of the questions, correctly. Moreover, HCPs revealed that lack of appropriate knowledge is the main hindrance in providing sexual counseling. *Conclusion:* Knowledge about sexual counseling among health care professionals needs to improve in order to provide holistic care to the patients.

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

## 2.22

### IS ADULT CONGENITAL HEART SURGERY A SPECIALTY?

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**Objective:** Diagnosis and treatment of adult individuals with congenital heart has steadily improved over the last fifty years. There are many Individuals with congenital heart disease who were previously considered incurable and can now be treated. There is a growing debate whether a Pediatric or congenital cardiothoracic Surgeon should be performing the surgeries or adult Cardiac surgeon on individuals with Adult Congenital Heart

**Method:** We retrospectively reviewed the database of Cardiothoracic Surgery Department; AKUH from 2006 to 2012. The objective of our study was to determine the surgical outcomes of adult with congenital heart treated at AKUH. We also compared our study with the database of Netherlands. **Results:** Our study revealed that there were 200 patients with adult congenital heart treated surgically at AKUH. The most common congenital heart anomaly was atrial septal defect. The Most common co morbid in these individuals was Diabetes mellitus. The most common complications were prolong ventilation and reopen for bleeding. Morbidity was observed to be around 14.21 %. Mortality was 1.5 %.

**Conclusion:** We conclude that development of separate specialty of congenital heart surgery may improve the final outcome. In addition to this adequate training of residents and fellows in the field of Adult Congenital heart surgery is required. Above all a multidisciplinary team approach is required.

**Keywords:** Adult congenital, surgical outcomes, mortality

## 2.23

### LACK OF ASSOCIATION OF METHYLENETETRAHYDROFOLATE REDUCTASE GENE WITH ACUTE MYOCARDIAL INFARCTION IN A PAKISTANI POPULATION.

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**Objective:** The study was to test the association of two polymorphisms of methylenetetrahydrofolate reductase gene, MTHFR C677T; MTHFR A1298C with acute myocardial infarction (AMI).

**Method:** A case-control study involving 308 AMI patients (age 30-74 years; 230 males and 78 females) and 319 age and gender matched normal healthy controls (235 males and 84 females) was carried out on a Pakistani population. Genotyping of the two polymorphisms was done using PCR-RFLP based assays. Fasting levels of plasma homocysteine and other biochemical parameters were determined using kit methods. **Results:** Plasma homocysteine concentrations were found to be

elevated in both cases and controls ( $18.1 \pm 7.7 \mu\text{mol/l}$  vs  $18.1 \pm 8.1 \mu\text{mol/l}$ , respectively). Compared to Caucasian populations, homozygous variant genotype MTHFR 1298CC was found to be highly prevalent (27%) in Pakistani population. Neither MTHFR C677T nor MTHFR A1298C polymorphism was found to be associated with myocardial infarction (MI). Age-at-onset of MI was significantly affected by MTHFR C677T (TT=39 years vs CT/CC= 49 years;  $P=0.006$ ).

**Conclusion:** MTHFR polymorphisms appear to have no role in AMI in Pakistani population.

**Keywords:** Acute myocardial infarction, homocysteine, MTHFR polymorphism

## 2.24

### LATE PRESENTATION OF NEAR TOTAL ATRESIA OF THE DESCENDING AORTA AT THE ISTHMUS PRESENTING IN A 25 YEAR OLD AND ITS SUCCESSFUL TREATMENT WITH A BYPASS GRAFT

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**Case Report:** Congenital aortic atresia is a common malformation accounting for 71 to 86 percent of all left ventricular outflow tract obstructive lesions in children. Chronic obstruction leads to left ventricular hypertrophy, which at one hand, preserves ejection fraction, but simultaneously, leads to impaired coronary blood flow. Left ventricular outflow obstruction due to atresia is most commonly present at the aortic valve but rarely has atresia been identified in the descending aorta. The presentation of patients with aortic atresia is a wide spectrum ranging from being asymptomatic to having severe hemodynamic implications. Many patients can be diagnosed before the onset of any symptom with an electrocardiogram, done on the basis of finding a systolic murmur on physical examination. The disease may initially be in the latent phase, in which the severity remains mild to moderate and the prognosis remains good. However with the progression of the disease, symptoms may develop and survival rates decline. Reports have been published reporting cases of sudden death in a small time span following the onset of symptoms. We report the case of a 25 year old girl who was evaluated for headaches and uncontrolled hypertension. CT scan chest showed a short atretic segment in the descending aorta at the level of the isthmus. She underwent surgery; a jump graft was placed between the arch of the aorta and the descending aorta using partial occlusion clamps via left posterolateral thoracotomy. The patient tolerated the procedure well and recovery was uneventful.

**Keywords:** Atresia, aorta, bypassgraft

**2.26****LIBMAN-SACKS ENDOCARDITIS IN A PATIENT WITH SYSTEMIC LUPUS ERYTHEMATOSUS AND ANTIPHOSPHOLIPID ANTIBODIES AND ITS SUCCESSFUL TREATMENT WITH MITRAL VALVE REPLACEMENT**

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**Objective:** Libman-Sacks endocarditis was first discovered by Emanuel Libman and Benjamin Sacks in 1924. Although it is not the most common cardiac manifestation of Systemic Lupus Erythematosus (SLE), it is the most characteristic one. Among the four valves, mitral valve is the most commonly affected. Some studies have shown the relationship between Libman Sacks endocarditis and antiphospholipid antibodies. Valvular involvement has been shown to be greater in people with SLE and antiphospholipid antibodies.

**Method:** Here we report a case of a 34 year old woman with antiphospholipid antibody syndrome and SLE who presented with mitral valve regurgitation.

**Keywords:** Mitral valve replacement, Libman-Sacks endocarditis, Systemic Lupus Erythematosus

**2.27****OUTCOME OF CARDIOPULMONARY RESUSCITATION IN THE EMERGENCY DEPARTMENT: DATA FROM TERTIARY CARE HOSPITAL OF THE DEVELOPING WORLD**

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**Objective:** To find out the outcome of cardiac arrest in all patients presenting to Emergency Department of the tertiary care center  
**Method:** This study is a retrospective review of CPR sheets and medical records of all adult patients (more than 16 years) who either arrived to ED with cardiac arrest or had cardiac arrest during their ED stay, CPR was performed on them as per ACLS guidelines. The study was a retrospective chart review from Jan 2011 – Dec 2012. Data was collected on a structured Utstein style template. Variables included in the study were date and time of arrest, arrest occur outside the hospital or in ED, if it occurs in ED the location inside the ED, time code was announced and attended, age and gender of the patient, initial cardiac rhythm, time to definite treatment, treatment received during CPR, time from code to defibrillation, return of spontaneous circulation and associated risk factors. Data was analyzed using SPSS version 19.0.

**Results:** Total number of CPR conducted in the ED was of 1057 patients. Among them 959 (90.7%) were adult patients. It was observed that 205 (21.4%) patient had pulmonary complains, 90 (9.4%) were injured, 70 (7.3%) had problems related to CNS, 69 (7.2%) had infectious diseases, 52 (5.4%) had cardiac issues

as their main complaints. Majority of the patient had PEA/EMD (43.7%) and Asystole (38.4%) as the initial rhythm at the time of CPR. Eighty two (8.6%) patients presented with brady arrest while 16 (1.7%) had ventricular tachycardia and 9 (0.9%) had ventricular fibrillation. The return of spontaneous circulation was observed in 54% (n=518) of patients

**Conclusion:** Cardiac arrest is an important cause of visiting ED in adults with only half of the patient having initial return of spontaneous circulation.

**Keywords:** cardiac arrest, emergency department, pakistan

**2.28****PATIENTS PRESENTING TO THE EMERGENCY DEPARTMENT WITH CHEST PAIN. PAKISTAN NATIONAL EMERGENCY DEPARTMENT SURVEILLANCE STUDY.**

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**Objective:** Chest pain is a frequently encountered presenting complaint in the emergency department (ED) and it is vital for ED physician to rule out chest pain of cardiac origin from non-cardiac chest pain. However information regarding such patients is still lacking and Pak-NEDS aims to fill this gap.

**Method:** This is three month cross sectional study conducted from November 2010 to January 2011. Patient presented with chest pain in one of the seven major tertiary care centers were included. Information on demographics, co-morbidities, investigations and outcomes were collected.

**Results:** A total of 17132 patients presented in ED with chest pain out of which 56.4% were males. Almost half of the patients (47.8%) were 30-50 years of age. Co-morbidities include hypertension in 1287 patients (7.5%), diabetes in 671 patients (4%) and previous cardiac history in 61 patients (0.3%). Only 2.4% of patients came in ambulance. ECG was performed in 9461 patients (55.2%) and cardiac enzymes in 1076 (6.3%) of the patients. Of all the patients presenting with chest pain, abdominal complains was the primary reason in 3246 patients (19%), atypical chest pain in 2893 (17%), respiratory complains in 1462 (8.5%), depression in 128 (0.7%), MI in 69 (0.4%), angina in 46 (0.3%) and congestive heart failure in 12 patients (0.07%). Half of the patients (48%) patients were discharged home, 9.7% were admitted in ward, 4.8% were admitted in ICU/CCU/HDU and 1% of the patient died.

**Conclusion:** Majority of the chest pain is non-cardiac in origin however ED physician should be cautious regarding every patient with chest pain.

**Keywords:** Chest pain, emergency department, non-cardiac chest pain

### 2.29

#### PRESENTATION OF PEDIATRIC CONGENITAL CARDIAC DISEASES IN THE EMERGENCY DEPARTMENT

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**Objective:** Congenital cardiac diseases are the most common birth defect with incidence of 8/1000 live births. Objective: To observe presentation of Pediatric cardiac congenital diseases to the ED of a tertiary care hospital in Pakistan

**Method:** Retrospective chart review of children with congenital cardiac disease visiting ED of Aga Khan University Hospital (AKUH) for one and half year (January 2010– June 2011). It included information related to patients' cardiac history, presenting complaints, ED diagnoses for current admission. Data was double entered in EpiData Version 3 and analyzed using SPSS 19.

**Results:** Out of 21,000 pediatric patients seen in the emergency department during the study period, a total of 152(%) congenital cardiac defect related visits were seen in 133 children. Male to female ratio was 1.4:1. The median age of the patients was 4.9 months (range 0 days to 13 years). The mean length of stay in hospital was 5.6±7.3 days. Out of 133 children, 44 (33.5%) were diagnosed to have congenital heart disease (Group 1) for the first time while 89(66.5%) children were already diagnosed to have it (Group 2). Among group 1 main reasons for ED visits were cardiac failure 17(38%), cyanosis 12(27%), murmurs 12(27%) whereas in group 2; main presentations were due to cardiac failure 30(28%), lower respiratory tract infection 25(23%) and gastroenteritis 13(12%). There were total 13(9.7%) deaths; 6(4.5%) in newly diagnosed and 7(5.2%) in previously diagnosed case.

**Conclusion:** Frequency of congenital cardiac disease in our emergency department is low, and their presentation is varied both in newly diagnosed as well as in previously diagnosed patients

**Keywords:** Pediatric congenital cardiac defects, emergency department

### 2.30

#### REPLACEMENT OF MITRAL VALVE IN A 11-YEAR OLD HEART TRANSPLANT CANDIDATE WITH VALVULAR CARDIOMYOPATHY

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**Case:** 11-year old boy was admitted to the Aga Khan University Hospital with congestive heart failure and failure to thrive. He was a diagnosed case of severe congenital mitral regurgitation with valvular cardiomyopathy and extremely enlarged left ventricle and EF of 25%. Patient was referred abroad for heart transplantation but he deteriorated and was admitted to AKUH. With no other avenue of recovery available, it was decided to proceed with very high risk mitral valve replacement with left ventricular assist device (LVAD) possibility. 31 size Mechanical valve was placed and with superb intensive care support, patient recovered without any major complications. Patient is doing very well and is being followed closely.

**Conclusion:** Mitral Valve replacement is usually unsuccessful in patients with EF of 25% but there is no absolute contraindication. With no hope for heart transplantation, high risk surgeries can change the course of disease as in this case.

**Keywords:** Mitral, cardiomyopathy, congestive

### 2.31

#### SIX YEARS' EXPERIENCE OF CONGENITAL AND PEDIATRICS DATABASE MANAGEMENT: THE IMPACT ON CLINICAL PRACTICE

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**Objective:** To assess the impact of database development and maintenance on clinical practice and quality of care. In the background and introduction, Quality improvement is a core value of healthcare provision in Pediatric and Congenital Cardiothoracic surgery. In order to improve quality of care, information on key indicators needs to be systematically collected and analyzed. To promote quality assurance of the Pediatric and Congenital Cardiothoracic surgery program at The Aga Khan University and hospital, a database is developed to acquire, maintain and analyze reliable variable information. This database helps health professionals, to measure and improve care by equating their work to international standards. This is the only Pediatric and Congenital Cardiothoracic surgery database in Pakistan

**Methods:** We acquire the information of patients through pre-operative evaluation form, anesthesia information sheet, perfusion information, sheet surgery information form and the post-operative flowcharts, status of the patient at discharge and 30-days post-surgery follow-up information. Information was collected through structured questionnaire by trained data abstractor and entered into Microsoft Access, after error checks and the validated data was analyzed on SPSS (Statistical package of social sciences) software.

**Results:** From July 2006–June 2012, a total of 1017 heart surgeries performed. The most common open heart surgeries were VSD 27%, TOF 24% were, and 13% were ASD. In closed heart 51% were Modified BT shunts, 17% were PDA. The overall 30-day mortality in open heart was 7.04%, and in closed heart it was 7.5%. Post-surgery morbidity was 29% in open-heart, 21% was in closed heart surgery. Readmissions after 30 day of Discharge were 8.4% mainly for respiratory infection. Followed with 16% lost to follow-ups 79.6% patients were alive, 0.6% were died at 30 day patients follow up.

**Impact in clinical practice**

With the development of database, post-surgery mortality and morbidity rates could easily be generated. It helped in development and enforcement of protocols to reduce the mortality and morbidity rates. It also helped in controlling preventable post-surgery complications. As a result, we modified our practice in an effort to address these issues and reduce the complication rates after the surgery.

**Conclusion:** Updated and stringently maintained database helped to identify deficiencies, strength and trends of the Pediatric and Congenital Cardiothoracic surgery program.

**Keywords:** Database, mortality and morbidity, quality of care

**2.32****SPINDLE CELL CARCINOMA OF THE LUNG EXTENDING INTO THE TRACHEA**

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*Case Report:* Spindle cell carcinoma is a rare form of lung cancer representing 0.2-0.3 % of all primary pulmonary malignancies. Even with combined surgery, chemotherapy and radiation therapy, these tumors are associated with poor prognosis and only 10% of patients survive 2 years after diagnosis. We describe a patient 54-yr male with respiratory symptoms and progressive hemoptysis. On investigation he was diagnosed as having a mass of the left lung extending into the trachea. He was successfully managed by pneumonectomy and resection of mass from the trachea thru surgery and therapeutic bronchoscopy. Spindle cell carcinomas often have a poor prognosis with an overall five year survival. In our case, due to tumor involvement of the left main bronchus and trachea, pneumonectomy was considered the optimum choice of treatment. Therefore, with an acceptable mortality rate, pneumonectomy can be safely accomplished in patients with such locally advanced tumors.

*Keywords:* spindle cell carcinoma, pneumonectomy, bronchoscopy

**2.33****STAB WOUND TO THE LEFT VENTRICLE LATERAL TO LEFT ANTERIOR DESCENDING ARTERY PRESENTING WITH HEMODYNAMIC STABILITY PROGRESSING TO A SUDDEN TAMPONADE**

*Zubair Luqman, tariq usman, Saulat H. Fatimi*  
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*Case Report:* 24 year old man presented to the ER with two hour history of knife stab wound in the left fourth intercostal space in the midclavicular line. At the time of presentation, he was hemodynamically stable with a heart rate of 110/min, BP of 110/80 and respiratory rate of 26 per minute. There was good air entry bilaterally. Chest X-ray showed no hemopneumothorax but the cardiac silhouette looked enlarged. While the patient was being evaluated, he suddenly became hypotensive and drowsy. Cardiac tamponade was suspected and catheter was inserted in the subxiphoid area to relieve the tamponade but was unsuccessful. Patient was rushed to the operating room and emergent median sternotomy was performed. Cardiac Tamponade was identified and was relieved by opening the pericardium longitudinally. A small 2 cm linear laceration was identified in the mid left ventricular wall less than 1 mm from the Left anterior descending artery. The artery was not injured but the anterior descending vein was involved.

Cardiopulmonary bypass was kept stand by and with interrupted pleggetted 3 0 prolene suture the LV laceration and left anterior vein were repaired. Care was taken to prevent injury to left anterior descending artery which was just next to the injured LV. Intra-operative echo was done and it was made sure that

there was no ventricular septal defect. Patient had an uneventful post-operative course and was discharged home in perfect health. *Conclusion:* Penetrating injuries to the LV as compared to the right ventricle are rare due to the postero-lateral position of the LV. Juxta LAD artery left ventricle injuries are difficult to manage and may require cardiopulmonary bypass and grafts to the LAD. However in this patient we were able to repair this critical injury without going on cardiopulmonary bypass.

*Keywords:* Trauma, ventricle, LAD

**2.34****TETRALOGY OF FALLOT WITH ABSENT PULMONARY VALVE SYNDROME; APPROPRIATE SURGICAL STRATEGIES**

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*Objective:* Absent pulmonary valve syndrome (APVS) is a rare variant of Tetralogy of Fallot (ToF) occurring in 3-6% of all Tetralogy of Fallot cases. It is characterized by rudimentary pulmonary valve leading to pulmonary regurgitation and dilatation of main and branch pulmonary arteries. These dilated pulmonary arteries compress the trachea and bronchi leading to respiratory symptoms. Different surgical techniques are offered depending on the age of patient and the respiratory symptoms. The aim of the study was to analyze the patients, presenting with ToF-APVS to a tertiary care hospital and their surgical management, in the light of the various surgical strategies available

*Method:* Retrospective chart review and follow up echocardiograms were used to collect data on a pre-designed form.

*Results:* 154 patients presented with ToF to Agha Khan University Hospital, between 2007 and 2011, 5 patients (3%) had surgical correction of ToF with APVS. Of the different surgical strategies used, Contegra and Bioprosthetic valve placement had satisfactory outcome with minimal gradient at right ventricular outflow tract (RVOT), good ventricular function and mild valvular regurgitation. The patient with monocusp valve developed free pulmonary regurgitation at 6 months as the valve got stuck to the undersurface of the Trans Annular Patch (TAP). The patient with only a TAP has developed a RVOT gradient of 80mmHg with moderate pulmonary regurgitation.

*Conclusion:* Early surgery is preferred in symptomatic patients. The repair depends upon achieving integrity of pulmonary circulation which is best achieved by using right ventricle to pulmonary artery conduit or inserting a pulmonary valve.

*Keywords:* absent pulmonary valve syndrome, Contegra valved conduit, pulmonary valve replacement

### 2.35

#### TRANSCATHETER CLOSURE OF A TRAUMATIC VENTRICULAR SEPTAL DEFECT USING AN AMPLATZER TMATRIAL SEPTAL OCCLUDER DEVICE.

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*Case Report:* Penetrating chest trauma especially involving the heart is a serious injury. Hemodynamic instability warrants an emergent though high risk surgical procedure with the aim of correcting cardiac lacerations. A relatively rare occurrence, the incidence of ventricular septal defect (VSD) complicating penetrating cardiac trauma has been reported at 4.5% (1). Closing such VSDs during emergent surgery (especially if an off-pump approach is adopted) may not be possible. Such residual VSDs may become hemodynamically significant and thus may require closure in the immediate post-operative period in the face of persistent ventilator or inotropic requirement attributed to heart failure. In a stable patient however, closure is performed if there is evidence of significant left to right shunt (Qp:Qs > 1.5) and/or left heart dilation with failure. Transcatheter closure of such VSDs is a good alternative to surgery and prevents issues related to cardiopulmonary bypass. Specialized VSD occluder devices ranging from 4mm to 24 mm are used for this procedure. Atrial septal defect (ASD) occluder can be utilized if the defect is larger than 24 mm or in case of unavailability of larger VSD occluder. We describe such a case of a post-traumatic VSD which was closed using an ASD occluder

*Keywords:* Traumatic VSD, cardiopulmonary bypass, transcatheter VSD closure

### 2.36

#### TUBERCULOUS ASCENDING AORTIC PSEUDOANEURYSM

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*Case Study:* Aneurysm and pseudoaneurysms of ascending aorta due to infective organisms are rare but challenging entity with risk of high morbidity and mortality. Such infected vascular aneurysms are called mycotic aneurysm. Various micro-organisms are responsible for this pathology. However tuberculous pseudoaneurysm of ascending aorta is extremely rare. Both surgical and medical treatment is required to offer best chance of cure and avoid impending rupture. We report a case of 25 years old gentleman who presented to us with shortness of breath and recurrent hemoptysis. His preoperative radiological examination revealed pseudoaneurysm of ascending aorta. He also had an echocardiography to assess the function of heart and valvular pathology. After preoperative evaluation he underwent successful repair of pseudaneurysm of ascending aorta by excision and replacement of diseased aorta with Dacron tube graft using cardiopulmonary bypass. Histology of the specimen

showed multiple granulomas with focal necrosis most likely to be tuberculosis. Subsequently he was started on anti-tuberculosis chemotherapy.

*Keywords:* Tuberculosis, Pseudoaneurysm, Cardiopulmonary Bypass

### 2.37

#### ILIO-FEMORAL "DEEP VENOUS THROMBOSIS" RELATED TO MIXING ARTIFACT

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Pakistan Institute of Medical Sciences, Islamabad*

*Background:* Pseudo-thrombosis is an artifact related to mixing of unenhanced blood with contrast enhanced blood. Frequent use of multiphase multi-detector CT has made this entity common. Failure to recognize this entity can lead to inappropriate administration of anticoagulants to the patients. *Methods:* 74 Year old male with history of cirrhosis and portal hypertension had a CT abdomen and pelvis which revealed an enlarged re-canalized umbilical vein, which was noted to be draining into the left common femoral vein. There was a filling defect seen in the left superficial femoral vein. It was unclear whether it is a mixing artifact versus a thrombus in the left superficial femoral vein. Further evaluation with a Doppler study revealed no deep venous thrombus.

*Result:* Pseudo-thrombosis is an artifact related to mixing of unenhanced blood with contrast enhanced blood. It is commonly seen at renal vein-inferior vena cava junction. Other affected veins include superior vena cava - subclavian vein junction. Its diagnosis is important in regions like pulmonary arteries where it can be due to reversal of blood flows due to surgical shunts. It can lead to erroneous diagnosis of pulmonary embolism. Frequent use of multiphase multi-detector CT has made this entity common. Reformatted images are helpful to distinguish true vs. pseudo-thrombosis. In difficult cases delayed phase imaging can be performed in which true thrombus is well marginated. If encountered in limbs, sonography is useful. Flow sensitive MR sequences can be used in difficult case. Catheter angiography is gold standard but rarely is required. *Conclusion:* Mixing artifact related to venous collateral formation should be considered for an apparent thrombus in the ilio-femoral vein. Close scrutiny of axial and reformatted images may facilitate recognition of this phenomenon and help avoid an erroneous diagnosis of deep venous thrombosis and inappropriate administration of anticoagulants to the patients.

*Keywords:* Deep Venous Thrombus, pseudothrombosis

**3.1****DILTIAZEM VS. GLYCERYL TRI-NITRATE (GTN) FOR EARLY SYMPTOMATIC RELIEF IN ANAL FISSURE: A RANDOMIZED CLINICAL STUDY**

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**Objective:** To further resolve the clinical equipoise on the choice of chemical Sphincterotomy agent for early symptomatic relief of anal fissure, we conducted this trial to compare the effectiveness of 2% Diltiazem gel with 0.2% Glyceryl TriNitrate (GTN).  
**Results:** Thirty one (52%) patients were males and mean age±Standard deviation of 37±11 years. Patients, who used Diltiazem, reported more symptomatic relief than GTN, with excellent relief in 50% as compared to 16.6% (p-value: 0.01). Side effects were found more in GTN vs. Diltiazem (p-value: 0.01) and most common side effect in GTN group was headache (40%). Cost of the treatment was comparable between both treatment arms.

**Conclusion:** Chemical Sphincterotomy with topical 2% Diltiazem gel is an effective first line treatment for early symptomatic relief of anal fissures. Our study reports its superiority over GTN owing to negligible side effects and better symptomatic relief.

**Keywords:** Diltiazem, glyceryl tri-nitrate, anal fissure

**3.2****EFFECTS OF BLADDER TRAINING AND BEHAVIORAL INTERVENTION IN FEMALE PATIENTS WITH OVERACTIVE BLADDER SYNDROME, ATTENDING UROGYNECOLOGY CLINIC AT THE AGA KHAN UNIVERSITY HOSPITAL KARACHI, PAKISTAN: A RANDOMIZED CONTROLLED TRIAL**

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**Objective:** Urinary Incontinence (UI) is a common problem. The prevalence in women is reported variably to be from around 9% to 72%, one of the largest studies found an overall prevalence of 25% in community -dwelling women (Hunskaar2002). Pakistan being the developing country lacks the primary health support system and hence the diagnosis of OAB is usually clinical and the symptoms of OAB are treated by drug therapy which is very expensive and has poor compliance due to adverse side-effects. Primary Objective is to compare the efficacy of three different modes of treatment for Overactive Bladder in terms of symptom reduction and quality of life (QoL) improvement by three different treatment modalities for overactive bladder symptoms

**Method:** In this single-blind randomized clinical trial, 150 women presenting at AKU Urogynecology clinic, aged 25-65 yrs with symptoms of OAB will be randomly divided into three groups; Arm 1: Behavioral intervention program introducing good bladder habits (n=50) Arm 2: Good bladder habits and Pelvic Floor Muscle training program (n=50) Arm 3: Good bladder habits along with PFMT using bio-feedback (n=50) Patients would be followed after every 2 weeks for 12 weeks of treatment

and the progressive changes in symptoms of patients will be assessed. Once the efficacy of treatment modality is defined then this treatment would be offered to all the groups  
**Results:** Frequency and proportions will be calculated for categorical variables and mean and standard deviation will be calculated for quantitative continuous variables.  
**Conclusion:** We will see the efficacy and reduction in severity of symptoms of OAB using all 3 methods and conclude the results to recommend one of these or all as first line of management for OAB

**Keywords:** OverActive, Bladder, RCT

**3.3****GABAPENTIN VS. PREGABALIN FOR POST OPERATIVE PAIN IN LUMBAR MICRODISCECTOMY: A RANDOMIZED CONTROLLED TRIAL**

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**Objective:** Gabapenoids have a synergistic effect with opioids and NSAIDs in multi-modality pain treatment. To compare mean post-operative pain score Visual Analogue Score (VAS) between patients undergoing single level micro lumbar discectomy for intervertebral disc prolapse after pre-operative oral administration of pregabalin vs. gabapentin.

**Method:** This randomized controlled trial was carried out at Aga Khan University Hospital (AKUH) from February to October 2012 on 78 patients, selected through Non probability purposive sampling. Patients undergoing microdiscectomy were randomized to Group A (Gabapentin) or group B (pregabalin). Post operatively, pain score was recorded via VAS score at 24 hours and at 1 week. Data was analyzed using SPSS and groups were compared using student's t-test for continuous variables and chi square for categorical variables. Confounding and effect modifying variables i.e. age, sex, and amount of additional analgesia requirement are analyzed by multiple linear regression. P-value <0.05 was considered significant.

**Results:** Both the groups were comparable for baseline variables with mean age of 42 and 39 years, 70% and 75 % were male in both groups respectively. Mean VAS for pain at 24 hours of Gabapentin vs. Pregabalin was comparable (1.97±0.84 vs. 1.6±0.87, p-value: 0.087), respectively. Similarly, both the groups were comparable for mean VAS for pain at one week (0.27±0.45 vs. 0.3±0.46, p-value: 0.79). None of the patients required additional analgesia postoperatively.

**Conclusion:** Pregabalin and gabapentin are equally effective for relief of post-operative pain in patients undergoing microdiscectomy being treated with gabapentin or pregabalin. Further larger sample size study with a third arm as control should be conducted to further validate the findings.

**Keywords:** Pregabalin, Gabapentin, Microdiscectomy



### 3.4 GLYCEMIC CONTROL AMONG DIABETIC PATIENTS DURING CORONARY ARTERY BYPASS: A COMPARISON OF CONTINUOUS INSULIN INFUSION AND GLUCOSE-INSULIN-POTASSIUM REGIMENS

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**Background:** In the United States, approximately 500,000 patients undergo coronary artery bypass grafting (CABG) each year, 20% of whom have diabetes mellitus. Patients with diabetes undergoing cardiac surgery with postoperative glucose greater than 200 mg/dL have a 17% to 86% increased risk of infection. The American College of Cardiology/American Heart Association guidelines for patients undergoing CABG recommends aggressive perioperative glucose control by using continuous intravenous insulin infusion for patients with diabetes

**Objective:** To compare continuous insulin infusion and glucose-insulin-potassium regimen for mean glycemic level in diabetic patients undergoing elective CABG surgery in a tertiary care hospital.

**Method:** After informed consent fifty six patients were included in this single blinded randomized control study. Patients were assigned randomly to one of the two groups to receive either continuous insulin infusion or glucose-insulin-potassium regimen during coronary artery bypass grafting surgery.  
**Results:** There was no statistical difference in demographic data. The mean intraoperative blood sugar was  $149.2 \pm 7$  mg/dl in CII group and in GIK group was  $151.2 \pm 12.3$  mg/dl. None of the patients had hypoglycemic episode i.e blood sugar less than 60 mg/dl.

**Conclusion:** In this study it is concluded that, neither the CII nor the GIK regimen was found to keep blood sugar levels in the targeted range. However, glycemic levels during coronary artery bypass graft surgery was found to be better controlled through CII regimen as compared to GIK regimen at all given time intervals, although the difference was not statistically significant

**Keywords:** Diabetes mellitus, CABG, Cardiac surgery, GIK, CII

### 3.5 A RANDOMIZED, PLACEBO-CONTROLLED, CLINICAL TRIAL OF VITAMIN D SUPPLEMENTATION IN PATIENTS WITH PULMONARY TUBERCULOSIS, SUPPLEMENTARY CHOLECALCIFEROL IN RECOVERY FROM TUBERCULOSIS: A SUCCINCT STUDY

Nawal Salahuddin, Farheen Ali, Zahra Hasan, Nisar Rao, Faisal Mahmood, Masooma Aqeel, Fasih Rehman, Shafaq Mahmood, Babar Dildar, Farooq Oighor, Nadia Sharif, Arslan Rahatullah  
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**Background & Objective:** 1,25-(OH)<sub>2</sub>D<sub>3</sub> is known to modulate host cell responsiveness to interferon gamma (IFN- $\gamma$ ). IFN- $\gamma$  is one of the key mediators of protective immunity against Mycobacterium tuberculosis infection and it is thought that

vitamin D may enhance host immune responses by modulating this cytokine. The objectives of this study were to determine whether vitamin D supplementation to patients with Tuberculosis could influence recovery as assessed by clinical and immune parameters. The objective was to investigate the utility of Vitamin D supplementation in recovery during tuberculosis treatment  
**Methods:** 259 patients were randomized to receive either 600,000 IU of Intramuscular Vitamin D<sub>3</sub> or placebo for 2 doses. Patients were treated according to the DOTS protocol. Assessments were performed at 4, 8 and 12 weeks. *M. tuberculosis* sonicate (MTBs) antigen whole blood stimulated IFN- $\gamma$  responses were measured at 0 and 12 weeks. Statistical comparisons between outcome variables at 0 and 12 weeks were performed using Student's t-test and Chi square tests while responses between groups were compared using the Mann Whitney U test.

**Results:** After 12 weeks, the vitamin D supplemented arm demonstrated significantly greater mean weight gain (kg); + 3.75, (3.16 – 4.34) v/s + 2.61 (95% CI 1.99 – 3.23) *p* 0.009 and lesser residual disease by chest radiograph; number of zones involved 1.35 v/s 1.82 *p* 0.004 (95% CI 0.15, 0.79), resolution or 50% reduction in cavity size 106 (89.8%) v/s 111 (94.8%), *p* 0.035. There was a significant increase in MTBs-induced IFN gamma secretion in the vitamin D group (*p*=0.022) compared between 0 and 12 weeks. Further stratification indicated that patients with baseline 'deficient' vitamin D levels showed the improvement (*p*=0.021).

**Conclusions:** Vitamin D supplementation accelerated clinical and radiographic improvement in patients with pulmonary TB. It also increased host immune activation in patients particularly those who had deficient serum levels of Vitamin D. This data suggests an important role for Vitamin D in accelerating recovery in TB.

**Keywords:** Pulmonary tuberculosis, vitamin D, cholecalciferol, Pakistan

#### 4.1 AN IN-VITRO COMPARISON OF MARGINAL ACCURACY IN TEMPORARY CROWNS

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**Objective:** To compare the marginal accuracy of temporary crowns in-vitro, using two interim auto-polymerizing materials in a direct technique.

**Method:** Fifteen crowns were fabricated using Poly-ethyl methacrylate and Bis-GMA composite temporary crown materials (n=30), in poly vinyl-siloxane impressions of a mandibular typodont arch. Crowns were made on an ivory mandibular first molar, prepared as to receive a PFM crown. After trimming the margins of the crowns under magnification of loupes and then numbering them, margins of prepared tooth and crowns were marked with red and blue inks respectively. The tooth-crown assembly was observed under microscope (4X magnification). Images of all surfaces were digitally captured. Marginal gap was measured in millimeters along four reference points, using calibrated computer software. Independent samples t-test was applied to determine the difference between the two groups and one-way ANOVA with Bonferroni post-hoc analysis was applied to establish the margin with the greatest discrepancy. **Results:** With 120 observations, the mean marginal gap in Bis-GMA composite group was found as 0.2mm (SD±0.11) and in Poly-ethyl methacrylate group was found as 0.3mm (SD±0.17) at p-value<0.001. The buccal and mesial margins of the Poly-ethyl methacrylate crowns exhibited the greatest gap. **Conclusion:** Within the limitation of our study, we found that although temporary crowns made with both materials showed less than ideal marginal accuracy, Bis-GMA composite exhibited less marginal gap than Poly-ethyl methacrylate. The thickness of temporary luting cement would compensate for the gap observed in the margins of Bis-GMA composite crowns but not for Poly-ethyl methacrylate crowns.

**Keywords:** temporary crowns, marginal accuracy, auto-polymerization

#### 4.2 ASSOCIATION OF CERVICAL VERTEBRAL ANOMALIES WITH SKELETAL MALOCCLUSIONS

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**Objective:** Morphological deviations of the cervical vertebral column were previously shown only in relation to craniofacial aberrations and syndromes. However, it has been recently described that abnormal morphology of upper cervical vertebrae is associated with malformation of the jaws and occlusion. This might be caused by a developmental fault of the mesenchyme as the areas might be dependent on the similar para-axial mesoderm. Accordingly, the objectives of this study are to identify the anomalies of cervical column in patients with skeletal malocclusions and to determine the association between cervical vertebral anomalies and skeletal growth pattern. **Method:** The lateral cephalograms of 90 subjects were traced by the principal investigator and the ANB angle was measured.

On the basis of this angle, the sample was divided into three groups, namely skeletal class I, class II and class III. The same radiographs were used to identify the cervical vertebral anomalies in these patients. The occurrence of anomalies in the three groups and the effect of sex were assessed by the Chi-Square test, whereas the association of cervical vertebral anomalies with skeletal malocclusions was assessed by logistic regression analysis. A level of significance ( $p = 0.05$ ) was used for the statistical tests.

**Results:** The most common anomaly observed in the three groups was fusion between C2 and C3 ( $p = 0.006$ ). This anomaly was found in 20% subjects with skeletal class I, 50% subjects with skeletal class II and 53.3% with skeletal class III malocclusions. No statistically significant difference was found in the occurrence of morphological deviations of cervical column. The association of cervical vertebral anomaly was found to be the highest with skeletal class III and least with skeletal class I malocclusions. **Conclusion:** Among the various anomalies of cervical vertebral column, fusion between C2 and C3 was most commonly observed and this fusion occurred significantly more often in patients with skeletal class III malocclusion than skeletal class I or II malocclusions.

**Keywords:** cervical vertebral anomalies, skeletal malocclusions, fusion b/w C2-C3

#### 4.3 AVENUES TO DETECT ORAL CANCER: AN EPIDEMIOLOGICAL APPROACH

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*School of Nursing & Midwifery, Aga Khan University, Karachi*

**Objective:** Warnakulasuriya (2010) reported that oral cancer is the 6th most common cancer worldwide. Bhurgri (2005) stated an increase in the age standardized incidence rates (ASIR) per 100,000 in Pakistani males from 9.1 to 15.3 and in females from 9.3 to 12.3 in a period of 8 years from 1995-2002. The purpose of the study is to explore the magnitude, causation and early detection of oral cancer and correlate it with contemporary literature.

**Method:** Systemic review of literature from 28 research articles from 1999 to 2011 was conducted through electronic medium by using JPMA, SAGE and Google search engines. Furthermore, data from AKUH was also collected.

**Results:** In the Aga Khan University Hospital Karachi, Pakistan, since 2000 till date, 4,039 cases of oral cancers have been diagnosed. With 108 males and 37 females under 18 years of age, 26 males and 52 females at 35 years of age and 2,549 males and 857 females above 35 years of age. Literature supports that the possible risk factors include smoking tobacco, alcohol consumption, betel quid and areca nut chewing with or without tobacco, viruses, diet and deficiency states, and exposure to sunlight (Tanaka et al., 2011). In two studies conducted in Pakistan, and India and Sri Lanka, the relative risks for smoking were found to be 5.7 and 2.1 for men, and 12.9 and 11.5 for women, respectively (S. Carnelio et al., 2004).

**Conclusion:** Screening should be an ongoing method and not a once-in-a-while project. Warnakulasuriya (2010) suggested that screening for recurrences or second primary tumors is pivotal

in the foremost five years preceding treatment. Most recently, the World Health Assembly (WHA) passed a resolution on oral health for the first time in 25 years (Petersen, 2009). This accentuates the requirement for framing policies and strategies for oral health in the 21st century, along with the objective prevention and control of oral cancer.

*Keywords:* Oral cancer, smoking, screening

#### 4.4 EFFICACY OF TWO SOLVENTS IN GUTTA PERCHA REMOVAL

*Kiran Rehman, Farhan Raza Khan, Nadia Aman  
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*Objective:* To compare the efficacy of Gutta percha removal achieved with chemo-mechanical technique using two different solvents

*Method:* 27 extracted maxillary and mandibular molars were prepared by manual filing and obturated with gutta percha. Intermediate peri-apical radiographs were taken. The teeth were divided into 2 groups of 14 teeth in group A and 13 in Group B. 2 drops of the assigned solvent were placed on the orifice of the obturated canal. Combination of gates-glidden drills and manual filing were done for removal of gutta-percha and the solvent was used in drops until no more gutta-percha was seen adhering to the files when removed from the canals. Post op peri-apical radiographs were taken to visualize the remaining gutta-percha left in the canals. Independent Sample T and Chi Square tests were used for data analysis with level of significance set at 0.05

*Results:* There was 5.19 mm of remaining gutta percha in the orange solvent group and 5.37mm in the chloroform group with a p value of 0.90

*Conclusion:* There is statistically no significant difference between orange solvent and chloroform when used as solvent for removing gutta percha.

*Keywords:* endodontic retreatment, gutta percha solvents, --

#### 4.5 EVALUATION OF TOOTH SHADE REPRODUCTION IN DIGITAL IMAGES TAKEN AT DIFFERENT OBJECT-TO- CAMERA DISTANCE USING COMPUTER SOFTWARE

*Saqib Naeem  
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*Objective:* To determine the in vitro tooth shade matching ability of digital images acquired from an ultra compact digital camera at various Object-to-Camera distances.

*Method:* Sixteen shade tabs from a conventional Vita Classic shade guide were illuminated in standard 6500 K light. An Ultra compact digital camera (Sony CyberShot, DSC-W380, 14.1 Mega Pixels) was used to acquire the images at uniform settings. Three images of each tab were taken at a pre-set object-camera distance of 10cm, 15cm and 30cm each. We generated 144 reference images. Out of focus or blurred images were discarded and a new image was taken to replace the reading.

For establishing test tabs, we used six masked tabs (assessor blinded) and used the above mentioned procedure to acquire a set of 18 test images. The two set of images (reference plus test) were imported in the Photoshop software. An area of body of each tab image was selected, averaged and color parameters (hue, chroma & value) were determined. Using CIE L c\*h\* formula, the color difference of each test tab with each reference image at given distance were determined. The outcome was correct match versus incorrect match. Microsoft Excel was used in the data analysis.

*Results:* At 10cm and 15cm only half (3 out of 6) of the color tabs were correctly identified but when the distance was increased to 30cm, all the six test color tabs were correctly identified.

*Conclusion:* Within the limitations of our study we concluded that the best color matching was obtained when the Object-to-Camera distance was kept at 30cm.

*Keywords:* Tooth Shade, Digital images, Color matching

#### 4.6 FREQUENCY OF DENTOFACIAL ASYMMETRIES IN ORTHODONTIC PATIENTS VISITING AKUH

*Nita Kumari, Mubassar Fida, Attiya Shaikh  
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*Objective:* Correction of orthodontic asymmetries is crucial in order to achieve maximum possible functional occlusion, esthetics and stability of results attained at the end of orthodontic treatment. Up til now valid frequency data of dentofacial asymmetries in orthodontic patients of Pakistani origin do not exist to document the treatment need. Hence, the aim of this study was to determine frequency of dentofacial asymmetries as well as severity of dental asymmetries in orthodontic patients coming to AKUH. *Method:* The sample comprised of 280 patients (177 females and 103 males) with no history of previous orthodontic treatment having no craniofacial anomalies. Assessment of dentofacial asymmetries was recorded by using pretreatment facial photographs and dental casts of orthodontic patients. Descriptive statistics were used to determine frequency of dentofacial asymmetries and Chi square test was used to determine difference in frequency of dentofacial asymmetries in mixed and permanent dentition.

*Results:* Seventy eight percent of patients had noncoincident midlines, 67.2% had mandibular midline asymmetry, 43.2% had molar asymmetry, 15.7% had mandibular arch asymmetry, 14.3% had maxillary midline asymmetry, 13.6% had maxillary arch asymmetry, 6.1% had nose deviation and 12.1% had facial asymmetry and chin deviation. In majority of the patients dental midlines were deviated from one another and from the facial midline by ¼ of lower incisor width, while molar asymmetry was found in most of the patients by ¼ cusp width. Mandibular arch asymmetry is more frequently seen in permanent than in mixed dentition (p value 0.054).

*Conclusion:* Noncoincident dental midline is most common while nose deviation is least common asymmetry seen in orthodontic patients. Mandibular arch asymmetry is more frequently seen in permanent than in mixed dentition.

*Keywords:* Dental Asymmetries, Facial Asymmetries, Orthodontic Patients

#### 4.7 MACRO, MINI AND MICRO-ESTHETICS IN ORTHODONTICALLY TREATED PATIENTS

*Sanam Tauheed, Attiya Shaikh, Mubassar Fida  
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**Objective:** Over the years the field of orthodontics has experienced a paradigm shift, laying more emphasis on correction of esthetics of the face rather than the underlying skeletal discrepancy. However, controversies still exist on the impact of extraction treatment on facial esthetics. This study aimed to assess the changes brought about by extraction orthodontic treatment in macro, mini and micro-esthetics of the face and smile.  
**Method:** Orthodontic records of 50 Pakistani subjects, aged 16 to 30 years, treated with extraction of upper and lower first premolars were selected. Macro-esthetic parameters namely lip prominence, interlabial gap, nasolabial angle and labiomental angle were measured using the lateral cephalographs of the patients. Mini-esthetic parameters namely dental midlines, buccal corridors, smile arcs and Morley ratio were assessed using the patients' intraoral frontal smile photographs. Micro-esthetics parameters namely maxillary central incisor crown width-height ratio, connectors between the maxillary anterior sextant, gingival zenith level of the maxillary lateral incisor and golden percentage of the anterior teeth were measured using the patients' study models and intraoral frontal smile photographs. Paired t-test was used to compare the continuous variable whereas McNemar test was used to compare the categorical variables. Statistical significance level was set at  $p = 0.05$ .

**Results:** Out of a total of 50 subjects, 17 were males and 33 were females. Mean age of males was  $18.88 \pm 2.25$  years and that of females was  $19.26 \pm 4.30$  years. Statistically significant differences were observed for lip prominence, interlabial gap, nasolabial angle, labiomental angle, buccal corridor percentage, connectors and golden percentage of all the anterior teeth ( $p < 0.05$ )

**Conclusion:** Extraction orthodontic treatment does not negatively affect the macro, mini and micro-esthetics of the face and smile. All esthetic parameters are improved with extraction orthodontic treatment.

**Keywords:** Macro-esthetics, Mini-esthetics, Micro-esthetics

#### 4.8 PERCEPTION- A COMPARISON OF PROFESSIONAL ASSESSMENTS

*Tania Arshad Siddiqui, Attiya Shaikh, Mubassar Fida  
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**Objective:** To assess the level of agreement between orthodontists, pediatric dentists and restorative dentists, using Aesthetic Component of Index of Orthodontic Treatment Need (IOTN-AC) and to determine the correlation of IOTN-AC of the orthodontist, pediatric dentist and restorative dentist with the normative treatment need (IOTN-DHC)

**Method:** A cross sectional, validation study in the Dental Clinics at Aga Khan University Hospital, Jinnah Medical And Dental College and Fatima Jinnah Dental College on a sample size of

17 professionals in month of August 2012. Each subject was shown a set of 32 pictures which they scored against the Aesthetic Component of the IOTN. The principal investigator assessed the normative score from the study casts using the IOTN-DHC. Data collected was analysed using Kruskal- Wallis, Bland-Altman, Paired sample t- test and Kappa Cohen's. Intra examiner reliability was assessed using Spearman's Correlation.  
**Results:** The sample size consisted of 24% males, and 76% females. The mean age of males was  $28.25 \pm 2.06$  years and females  $31.92 \pm 9.19$  years. A statistically significant difference was obtained between orthodontists' perception and normative need; pedodontists' perception and normative need; and, restorative dentists' perception and normative need with the IOTN-AC higher than normative need.

**Conclusion:** There is no significant difference in perception between orthodontists, pedodontists and restorative dentists and Orthodontists, pedodontists, restorative dentists overestimate the patients' pretreatment condition as compared to normative treatment need.

**Keywords:** Perception, IOTN, IOTN-AC

#### 4.9 RELATIONSHIP BETWEEN MAXILLARY & MANDIBULAR BASE LENGTHS AND DENTAL CROWDING IN DIFFERENT SKELETAL MALOCCLUSIONS

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**Objective:** To evaluate the relationship of dental crowding with maxillary and mandibular base lengths in skeletal Class I, II and III malocclusions and to assess the maxillary and mandibular base length among different age groups and across the gender.  
**Method:** The sample of 120 subjects was divided into three groups according to the type of malocclusion and these groups were further subdivided into two on basis of amount of mandibular tooth-arch size discrepancy. The maxillary and mandibular base lengths (Co-A and Co-Gn) and amount of dental crowding were measured on pre-treatment cephalometric radiographs and initial casts using vernier caliper respectively. The maxillary and mandibular base lengths were compared across gender between crowding group of ( $<3\text{mm}$ ) and of ( $>3\text{mm}$ ) among different skeletal malocclusions by univariate analysis of variance. Correlation between maxillary and mandibular lengths with dental crowding was examined by Pearson's correlation coefficient. Level of significance was taken to be  $= 0.05$   
**Results:** There was statistically significant difference found in mandibular length with respect to age ( $p=0.022$ ), across the gender ( $p=0.000$ ) and across different skeletal malocclusion types ( $p=0.000$ ). Similarly, there was significant difference in length of maxillary base with respect to age ( $p=0.037$ ), amount of maxillary crowding ( $p=0.046$ ), and different skeletal malocclusion types ( $p=0.004$ ). There was significant but weak correlation found between maxillary and mandibular crowding with maxillary ( $r=0.274$ ,  $p=0.002$ ) and mandibular ( $r=0.236$ ,  $p=0.009$ ) base lengths respectively. Significant but moderate correlation was found between maxillary and mandibular base lengths ( $r=0.566$ ,  $p=0.000$ ) and between maxillary and mandibular

crowding( $r=0.517$ ,  $p=0.000$ ). In addition, there was significant but weak correlation found between maxillary ( $r=0.192$ ,  $p=0.035$ ) and mandibular ( $r=0.226$ ,  $p=0.013$ ) base lengths with respect to age.

**Conclusion:** The base length of maxilla and mandible is larger in males as compared to females among all skeletal malocclusions. In addition, the length increases with respect to the age. Moreover, increase in maxillary crowding is more likely to be associated with shorter maxillary base length and severity of dental crowding in mandible is associated with increase in severity of maxillary crowding in all skeletal malocclusion groups.

**Keywords:** Base length, dental crowding, skeletal malocclusions

#### 4.11

##### SKELETAL DENTAL AND SOFT TISSUES CHARACTERISTICS IN VARIOUS OVERBITE GROUPS

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**Objective:** To compare the dental, skeletal and soft tissue characteristics in various overbite groups • To see the gender dimorphism, if any

**Method:** This was a cross sectional study carried out at orthodontic clinics, the Aga Khan University Hospital Karachi from June to July 2012. A total of 180 subjects were included in the study from the orthodontics record of patients. The inclusion criteria were an age range from 12 to 20 years, fully erupted incisors and 1st permanent molars and the availability of good quality models and cephalographs. The exclusion criteria were prior orthodontics treatment, fractured or restored teeth and craniofacial anomalies and syndromes. The subjects were equally divided into three groups of 60 subjects each (30 males and 30 females in each group) based on the amount of overbite recorded on the subjects dental models. The cephalographs were traced manually on illuminator and the various angles and measurements representing the dental, skeletal and soft tissue parameters were recorded. The data was analyzed using SPSS version 20.0 for windows. The descriptive statistics were generated for the various parameters. Two way ANOVA and Post Hoc Bonferroni tests were applied to determine the difference in various dental, skeletal and soft tissues among and within the three overbite groups. A p value of 0.05 was taken to be statistically significant. **Results:** A statistically significant difference was seen for the dental parameters like UADH ( $p = .003$ ), UPDH ( $p = .05$ ), LADH ( $p = .001$ ) and LPDH ( $p = .001$ ) across the gender of the subjects, males showing greater values than females. Across the overbite groups only the UPDH ( $p = .006$ ) and LPDH ( $p = .008$ ) were statistically significant showing greater values for open bite than deep bite subjects. The skeletal parameters like angle ANB ( $p = .006$ ), angle SNMP ( $p = .001$ ), angle FMA ( $p = .001$ ) and AFHR ( $p = .001$ ) were statistically significantly different across the various overbite groups. The values were greater in the open bite as compared to normal overbite and deep bite groups. For the soft tissues a statistically significant difference was seen across the overbite groups and gender ( $p = .003$  and

$.008$  respectively) for the lip length. The males showed greater values for lip length as compared to females. For the incisor stomion, a statistically significant difference was seen across the overbite groups ( $p = .001$ ). the values for incisor stomion were greater in deep bite group as compared to normal overbite and open bite groups.

**Conclusion:** The skeletal Characteristics are significantly increased in open bite group as compared to deep bite and normal overbite. The maxillary and mandibular molars have increased heights in the open bite group. The deep bite subjects have significantly decrease lip length as compared to normal overbite. The subjects with deep bite has significantly increased incisor stomion. All the values are significantly greater in males than females.

**Keywords:** Normal Overbite, Open Bite, Deep Bite

#### 4.12

##### THE ESTHETIC IMPACT OF EXTRACTION AND NON-EXTRACTION TREATMENTS ON PAKISTANI BORDERLINE SUBJECTS

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**Objective:** The esthetic impact of the soft-tissue profile might play a major role in deciding premolar extraction or non-extraction treatment, particularly in borderline patients. The purpose of this study was to compare the esthetic impact of extraction and non-extraction therapy on Pakistani patients. **Method:** Panels of 40 dentists and 40 laypersons evaluated randomly presented pretreatment and posttreatment soft-tissue profiles of 30 extraction and 30 non-extraction patients. Borderline patients were selected based on their initial diagnostic records. Two panels were asked to compare the pretreatment and posttreatment soft tissue profile tracings and to quantify their perceptions of the esthetic impact of treatment change using a visual analog scale (VAS).

**Results:** The mean VAS scores of dentists and laypersons for extraction treatment strategy were  $+23.03 \pm 27.89$  and  $+19.41 \pm 26.79$  ( $p=0.182$ ) respectively. For non-extraction treatment strategy, mean VAS scores of dentists and laypersons were  $+12.51 \pm 26.56$  and  $+14.55 \pm 21.22$  ( $p=0.448$ ) respectively. The mean change in lower lip protrusion after extraction treatment was  $0.78 \pm 1.5$  mm ( $p<0.001$ ) and after non-extraction treatment was  $0.50 \pm 1.10$  mm ( $p=0.125$ ).

**Conclusion:** The extraction treatment was more beneficial than non-extraction treatment in terms of facial profile improvement. No significant difference was found between dentists and laypersons in their perception of esthetic impact of a treatment strategy in borderline subjects. There was significant change in lower lip protrusion only after the extraction treatment strategy.

**Keywords:** Extraction, Non-extraction, Borderline

**5.1****46XX MALE SYNDROME: IS THERE ANY RELATIONSHIP WITH DYSEMBRYOPLASTIC NEUROEPITHELIOMA?***Saira Furqan, Naeemul Haque**Department of Medicine, Aga Khan University, Karachi*

**Objective:** De la chapelle syndrome (46XX male syndrome) is a rare anomaly with the characteristics of discordant chromosomal and gonadal sex. Individuals with classical 46XX male sex reversal syndrome have an apparently normal male phenotype and presents with infertility or sub-fertility

**Case Report:** 25 year old male, married 2 years back, came to take opinion regarding his Infertility. He is a healthy looking male with well developed secondary sexual characteristics and normal external male genital phenotype with a normal sized penis and both testis in scrotum and are of normal consistency and volume. Testicular biopsy shows no active spermatogenesis. He was operated at the age of 14 years for an intracranial mass, the histological analysis shows dysembryoplastic neuroepithelioma, a rare benign neoplasm, cytogenetic analysis of which shows Mosaic cell line. Sex karyotype in the mosaic and normal cell line was 46XX

**Conclusion:** It is a rare disorder of sexual differentiation where the testes and male genitalia develop in the absence of Y chromosome and possibly without the SRY gene. Usually it is caused by unequal crossing over between X and Y chromosomes during meiosis. Is this condition is associated with increased incidence of neoplasm is still a question, needed to be answered. Klinefelter's syndrome, another similar condition causing infertility, is known to have increased incidence of neoplasms.

**Keywords:** De la chapelle syndrome, dysembryoplastic neuroepithelioma, infertility

**5.2****A CASE REPORT: FAMILIAL GLUCOCORTICOID DEFICIENCY ASSOCIATED WITH FAMILIAL FOCAL SEGMENTAL GLOMERULOSCLEROSIS.***Nanik Ram, Najmul Islam**Department of Medicine, Aga Khan University, Karachi*

**Objective:** Familial glucocorticoid deficiency (FGD) is a rare autosomal recessive disorder characterized by isolated glucocorticoid deficiency in the presence of normal plasma renin and aldosterone level. Focal segmental glomerulosclerosis (FSGS) is a form of glomerular disease associated with proteinuria and nephritic syndrome. This is the first case of familial glucocorticoid deficiency associated with familial focal segmental glomerulosclerosis.

**Case Report:** An eight month old boy presented with increased genital pigmentation. Initial investigation revealed that he was glucocorticoid deficient and was started on hydrocortisone and fludrocortisone with a diagnosis of primary adrenal insufficiency. Later fludrocortisone was withdrawn and he was diagnosed to have isolated glucocorticoid deficiency. He later developed focal segmental glomerulosclerosis for which he underwent renal transplantation at the age of five years. Now at the age of twelve years, this boy is doing well on hydrocortisone treatment. His

two siblings and a first degree cousin also had isolated glucocorticoid deficiency. One of the above two siblings died due to renal failure secondary to focal segmental glomerulosclerosis.

**Conclusion:** Patients with familial glucocorticoid deficiency should be carefully followed for development of features of nephrotic syndrome.

**Keywords:** Familial Glucocorticoid Deficiency, Familial Focal Segmental Glomerulosclerosis, ACTH resistance

**5.3****AN ASSOCIATION OF CHERMERIN LEVELS WITH METABOLIC SYNDROME CHARACTERISTICS IN OBESE PAKISTANI MALES***Sadia S.Fatima, Kiyomet Bozaoglu, Abdul Shakoore Memon**Department of Biological & Biomedical Sciences, Aga Khan University, Karachi, Baker IDI Heart & Diabetes Institute, Melbourne, Australia, Jinnah Post Graduate Medical Centre, Karachi*

**Objective:** Chemerin is a recently discovered protein that regulates adipocyte differentiation and modulates the development of metabolic imbalances. We sought to examine the relationship of chemerin with body fat percentage, serum lipid, glucose, and insulin levels, and to compare these levels in lean and obese healthy volunteers.

**Method:** 90 healthy males, randomly selected from the local population, were divided into three groups as per Body Mass Index criteria for South Asian Population. Anthropometric measurements were performed for BMI, waist and hip circumference and body fat percentage was measured by Bio-electrical Impedance Matching analysis while serum analyses was done for fasting blood glucose, fasting insulin, lipid profile and serum chemerin. ANOVA and multiple regression analyses were performed to determine associations between serum chemerin levels and body fat and other phenotypic parameters. Data was presented as Mean + SD. In all statistical analysis p-value < 0.05 was considered significant.

**Results:** Circulating chemerin levels were significantly higher in obese subjects with body mass index (BMI) greater than 26 kg/m<sup>2</sup> compared with those with a BMI below 25 kg/m<sup>2</sup> (P=0.001). Serum chemerin levels were found to be independently and significantly associated with serum levels of cholesterol (P=0.0160; r=0.255), fasting glucose (P=0.002; r=0.323), HOMA-IR (P=0.004; r=0.300) and hip circumference (P=0.021; r=0.246).

**Conclusion:** Circulating chemerin is associated with degree of fat mass and may regulate the development of insulin resistance and impaired lipid metabolism. This data suggest that chemerin may serve as an independent marker in diagnosing these conditions even before they become clinically symptomatic.

**Keywords:** Obesity, insulin resistance, chemerin

#### 5.4

##### AN AUDIT TO DETERMINE OCCURRENCE OF MALIGNANCY IN THYROID NODULES ON ULTRASOUND GUIDED FINE-NEEDLE ASPIRATION. INSTITUTIONAL REVIEW

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**Objective:** To analyze the incidence of malignancy on FNA histopathologies of thyroid nodules. To see if it correlated with international literature.

**Method:** We retrospectively studied 119 patients who underwent FNA for diagnostic evaluation of a thyroid nodule. The histopathology reports were analysed.

**Results:** The final histopathologic breakdown is as follows: 97 cases were benign, 4 cases were malignant papillary carcinoma. 2 were cysts. 6 cases were of thyroiditis. 10 cases were indeterminate inadequate cells and/or presence of blood.

**Conclusion:** This study observed a 4 % incidence of thyroid cancer on the FNA of nodule. This rate is low as compared to international literature and we discussed the causes related to this low rate.

**Keywords:** FNA, thyroid, malignancy

#### 5.5

##### ASSESSMENT OF DIETARY COMPLIANCE AMONG PATIENTS WITH TYPE 2 DIABETES MELLITUS RECEIVING TEXT MESSAGE (SMS) REMINDERS: A RANDOMIZED CONTROL TRIAL

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**Objective:** To assess the difference in dietary compliance in patients with type-II diabetes, who were reminded through text message (SMS) vs. those provided standard care.

**Method:** A block randomized control trial is being conducted at Aga Khan University and Hospital in Karachi, Pakistan. Diabetic patients age 30 to 70 years, who have been diagnosed and conformed as a known cases of type 2 DM in the last 2 to 15 years, have a cell phone are being invited to participate in the study. In the intervention arm three text message reminders are being sent per week using Frontline SMS software for 3 months. Compliance to diet is being assessed in 2 ways. Firstly, overall compliance to dietary guideline is being measured by assigning score to the dietary intake assessed by Food Frequency Questionnaire (FFQ). Secondly, compliance is being measured by assessing responses to fortnightly two-item (fruits and vegetables) questionnaire that was sent to all participants via cell phone. Interim analysis was conducted after follow-up of 1.5 months instead of per protocol follow up of 3 months on 30 participants from each arm, because of time line issues for thesis submission. Results of interim analysis are presented in this thesis.

**Results:** There were no significant differences in distribution of variables in both the study arms at the baseline. The mean dietary

compliance score (assessed by FFQ) in the intervention arm at the baseline was 7.90 and after follow-up was 7.80 while in control arm, the mean compliance score at the baseline was 7.77 while after follow-up it was 7.87. There was no significant difference between the two arms (F (group) = 0.065; p-value= 0.79) as well as within the arms (F (time) = 0; p-value>0.99). Marginal interaction was observed between group variable (intervention and control arm) and factor variable (mean dietary compliance score by time) (F (interaction) = 3.702; p-value= 0.059). No significant difference was found in dietary compliance between the two arms assessed by response to fortnightly two-item questionnaire (p-value=0.22). There was no significant effect of the intervention status as well as response to fortnightly two-item questionnaire on the mean dietary compliance score assessed with FFQ ( p-value (Intervention status)= 0.65; p-value (Response status)= 0.29). Interaction between the intervention status and response status was also insignificant (p-value =0.85) **Conclusion:** Findings of the interim analysis suggest that there is no effect of text messages on dietary compliance of diabetic patients. We are unable to make conclusion about the relationship of dietary text message reminders and dietary compliance in type 2 diabetic patients. The reasons might be reduced follow up time as compared to per protocol and low post-hoc power of interim analysis.

**Keywords:** Dietary Compliance, Type II Diabetes, Text Messages

#### 5.6

##### EFFECTIVENESS OF KALONGI AND TURMERIC IN PREVENTING METABOLIC SYNDROME IN FRUCTOSE-FED RATS

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**Objective:** The metabolic syndrome (MS) is a combination of certain metabolic abnormalities including obesity, diabetes, dyslipidemia and hypertension. The management of early MS without overt Hypertension, Dyslipidemia and Diabetes is based on increasing physical activity and dietary modifications, which is a challenge for many patients. Complementary medicines including herbs like Turmeric and Kalongi are widely accepted and are a part of diet in many Asian countries. These can be used to prevent or as an adjuvant to control MS with fewer side-effects, better acceptability and cost-effectiveness. Animal studies are required to prove the effectiveness of such combinations for further clinical studies. Therefore, this study was aimed to determine and compare the efficacy of the single therapy and combination of powdered Kalongi seeds and Turmeric at different doses on normal and fructose-fed rats.

**Method:** Kalongi, Turmeric and its combination at different dosages were administered to Fructose-fed Sprague-dawley rats for 6 weeks. Weight, systolic BP, fasting blood sugars, lipid profile and CRP were measured at 3 and 6 weeks. Serum Insulin and endothelial function was determined at 6 weeks of intervention.

**Results:** At 3 weeks, 600 mg/kg of Kalongi prevented a rise in BP whereas, the co-administration of 300 mg/kg Kalongi and 1500 mg/kg Turmeric prevented high BP and

hypertriglyceridemia. At 6 weeks, the combination prevented hypertension, hyperglycemia, dyslipidemia, hyperinsulinemia and endothelial dysfunction.

*Conclusion:* Kalongi and Turmeric in combination prevented the development of MS and endothelial dysfunction in fructose fed rats. The results of this study warrant further studies and clinical trial to translate this effectiveness in MS in human subjects.

*Keywords:* Metabolic Syndrome, Fructose fed rats, Turmeric and Kalongi

### 5.7

#### EFFICACY OF MEGA DOSES OF VITAMIN D3 TO ACHIEVE OPTIMUM VITAMIN D LEVELS: PRELIMINARY FINDINGS

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*Department of Medicine, Aga Khan University, Karachi*

*Objective:* To evaluate the optimal dosing interval of vitamin D replacement in vitamin D deficient individual with different commercially available mega dose preparation

*Method:* A comparative prospective open label, randomized comparative study is being conducted at Aga Khan University Hospital, Karachi for one year with 4 follow-ups at 2, 4, 6 and 12 months interval. Adult patients of either gender with vitamin D (VD) levels <20ng/ml were recruited. The study participants were randomly assigned into following 4 groups of 25 each based on treatment intervention given: Group 1: 600,000 units IM; Group 2: 600,000 units Oral; Group 3: 200,000 units IM; Group 4: 200,000 units Oral.. Biochemical testing include serum calcium, phosphorous, magnesium, alkaline phosphatase, albumin, creatinine, SGPT and plasma iPTH at baseline. After every two months serum VD levels along with serum and urinary calcium and creatinine levels will be tested. Plasma iPTH will be repeated at 6 months follow-up where as all other biochemical parameters will be measured again at 12 months follow-up.

*Results:* Group 1: Baselin vitamin D level was 8.53 and at 2 months level rose to 32.07 Group 2: Baselin vitamin D level was 9.47 and at 2 months level rose to 30.38 Group 3: Baselin vitamin D level was 10.4 and at 2 months level rose to 27.26 Group 4: Baselin vitamin D level was 9.54 and at 2 months level rose to 24.51

*Conclusion:* Single dose of vitamin D 200,000 units or 600,000 units given orally or intramuscularly is sufficient to correct the vitamin D deficiency at 2 months. However the sufficiency level was achieved in only 600,000 units groups

*Keywords:* Vitamin D Deficiency, Megadoses of Vitamin D

### 5.8

#### FACTORS ASSOCIATED WITH UNCONTROLLED GLYCEMIC LEVEL AMONG TYPE II DIABETIC PATIENTS IN KARACHI

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*Department of Family Medicine, Aga Khan University, Karachi*

*Objective:* The study aims to estimate factors associated with uncontrolled glycemic level among Type-II diabetic patients in Karachi, Pakistan.

*Method:* This cross-sectional study was conducted from July-October 2010 on type-II diabetic patients recruited through consecutive sampling from the outpatient's clinics of two main hospitals in Karachi. Pre-tested questionnaire and participants' blood samples to conduct HBA1C test were used as data collection tools.

*Results:* 65 type-II diabetic patients were analysed using binary logistic regression. Patients who walk or pedal showed 90% protective odds against uncontrolled diabetes (ORadj =0.09, 95% CI=0.01-0.57). However, subjects having history of hypertension were five times (ORadj =5.3, 95% CI=1.0-26.0) and those having history of cardio-vascular disease were 7.2 times more likely to suffer from uncontrolled diabetes after adjusting for other variables (ORadj =7.2, 95% CI=0.8-72.8).  
*Conclusion:* In today's world controlling glucose levels and preventing hyperglycemia is a challenging task for patients and their physicians; due to increasing trend of sedentary life style and changes in the dietary pattern. Nonetheless, the results of this study indicate that controlled glycemic levels in patients with type II diabetes can be achieved by adopting healthy life style including walk or exercise.

*Keywords:* Type II Diabetes, uncontrolled hyperglycemia, life style factors

### 5.9

#### FIRST REPORT OF CODON ANALYSIS OF RET PROTO-ONCOGENE OF A MEN 2A FAMILY IN PAKISTAN

*Muhammad Qamar Masood*  
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*Objective:* MEN2A is an autosomal dominant disorder characterized by medullary thyroid cancer (MTC), pheochromocytoma (PC), and primary parathyroid hyperplasia. Germline mutation in RET proto oncogene has been identified as a cause for the syndrome. Multicentric hyperplasia of the parafollicular C cells is the hallmark of MEN2, with a penetrance approaching 100 percent, and nearly all patients develop clinically apparent MTC, often early in life [1]. Molecular analysis of RET Proto-Oncogene key exons has important clinical, therapeutic and prognostic implications. In a review of surgical histopathological specimen from a large tertiary care hospital in Pakistan the frequency % of all malignant thyroid lesions. There are only few case reports from Pakistan reporting cases of familial MTC or MEN 2A patients and none of the studies have ever reported genetic studies of these patients. We are reporting a family of MEN 2A with molecular genetic studies of three family members



**Method:** The genomic DNA was extracted by MagNA pure LC system from EDTA-blood sample and amplified by PCR using primers specific for Exons 11 of Ret proto-oncogene as sibling previously tested positive for a mutation in this exon. Sequencing reactions used generated PCR products and Big Dye terminator kit analyzed on an ABI 3730 automated sequencer. Sequences then compared to the reference sequence in the Gene Bank (NM 02097RefSeq)

**Results:** The family is from a rural area of Sindh with six members diagnosed with MTC and four out of six have so far diagnosed with pheochromocytoma. Molecular analysis of RET proto-oncogene was performed in the index case and 2 of the siblings who were not yet diagnosed with MTC at that time showed a mutation within the RET proto-oncogene, identified in codon 634 (TGC>TAC). The predicted amino acid change is (Cys>Tyr).

**Conclusion:** The detection of mutations in RET protooncogene has important diagnostic and therapeutic implications. Genetic screening of at risk patients allows identification of asymptomatic gene carriers and as the mutation has very penetrance prophylactic total thyroidectomy (TT) can be performed in a premalignant stage. The codon analysis provides guidance for the timing of TT in these asymptomatic gene carriers.

**Keywords:** MEN 2A, Medullary Ca Thyroid, RET protooncogene

#### 5.10

##### GIANT CYSTIC PARATHYROID ADENOMA PRESENTING WITH PARATHYROID CRISIS AFTER VITAMIN D REPLACEMENT

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Department of Medicine, Aga Khan University, Karachi*

**Case Study:** Parathyroid adenoma with cystic degeneration is a rare cause of primary hyperparathyroidism. The clinical and biochemical presentation may mimic parathyroid carcinoma.

**Method:** We report the case of a 55-year old lady, who had longstanding history of depression and acid peptic disease. Serum calcium eight months prior to presentation was slightly high, but she was never worked up. She was found to be Vitamin D deficient while being investigated for generalized body aches. A month after she was replaced with Vitamin D, she presented to us with parathyroid crisis. Her corrected serum calcium was 23.0 mg/dL. She had severe gastrointestinal symptoms and acute kidney injury. She had unexplained consistent hypokalemia until surgery. Neck ultrasound and CT scan revealed giant parathyroid cyst extending into the mediastinum. After initial medical management for parathyroid crisis, parathyroid cystic adenoma was surgically excised. Her serum calcium, intact parathyroid hormone, creatinine and potassium levels normalized after surgery.

**Conclusion:** This case of parathyroid crisis, with very high serum calcium and parathyroid hormone levels, is a rare presentation of parathyroid adenoma with cystic degeneration. This case also highlights that Vitamin D replacement may unmask subclinical hyperparathyroidism. Consistent hypokalemia until surgery merits research into its association with hypercalcemia.

**Keywords:** Cystic parathyroid adenoma, parathyroid crisis, vitamin D

#### 5.11

##### MALE HYPOGONADISM AT A TERTIARY CARE HOSPITAL IN KARACHI, PAKISTAN.

*Nanik Ram, Fauzan Hashmi, Najmul Islam  
Department of Medicine, Aga Khan University, Karachi*

**Objective:** The objective of this study was to determine the Presentation and etiology of male hypogonadism in a tertiary care hospital.

**Method:** Cross Sectional study Place and duration of study: Endocrine clinics, Aga Khan University hospital Karachi. Data of male patients with hypogonadism who attended clinics during January 2009 to August 2011 were reviewed. Patients and Methods: All male Patients with clinical and biochemical evidence of hypogonadism were included in the study. Patients with Diabetes Mellitus, Metabolic Syndrome, Andropause, AIDS, Chronic Renal Failure and Cirrhosis were excluded. Mean  $\pm$  SD were computed for quantitative variables. Frequency and percentages were computed for qualitative variables. Etiology of male hypogonadism was categorized as primary and secondary hypogonadism.

**Results:** A total 85 patients with male hypogonadism attended the endocrine clinic. Mean age of patients were  $25 \pm 10$  years. Clinical presentations were small genitalia (65%), absent secondary sexual characteristics (53%), not attained puberty (47%), infertility (53%), erectile dysfunction (41%) and loss of libido (29%). Seventy three (86%) patients had hypogonadotrophic hypogonadism (secondary hypogonadism) and twelve (14%) patients had hypergonadotrophic hypogonadism (primary hypogonadism). Among the patients with hypogonadotrophic hypogonadism thirty eight had idiopathic hypogonadotrophic hypogonadism, seven had pituitary adenoma, six had empty sella syndrome, three had Kallman's syndrome and one patient had hemosiderosis due to thalassemia major, while eighteen patients did not undergo brain imaging.

**Conclusion:** Small genitalia, absent secondary sexual characteristics and infertility were the main presenting features of hypogonad man. Majority of patients had hypogonadotrophic hypogonadism.

**Keywords:** Male Hypogonadism, Erectile dysfunction, Infertility

#### 5.12

##### MANAGEMENT OF CHILD WITH CONGENITAL HYPERINSULINISM, A MULTIDISCIPLINARY APPROACH

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**Case Report:** Hyperinsulinemic hypoglycemia characterized by the unregulated secretion of insulin from pancreatic  $\beta$  cells in relation to blood glucose concentration. It is a cause of recurrent and persistent hypoglycaemia in the neonatal and infancy periods, and major risk factor for brain damage and subsequent neurodevelopmental handicap, the identification, early diagnosis

and prompt management of patients are essential if brain damage is to be avoided.

**Keywords:** Hyperinsulinism, pancreatectomy, hypoglycemia

### 5.13

#### PAPILLARY CARCINOMA IN THYROGLOSSAL DUCT CYST WITH NODAL METASTASIS IN THE PRESENCE OF A NORMAL THYROID GLAND

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**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 Report:** 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 carcinoma, Nodal metastasis

### 5.14

#### RETROSPECTIVE ANALYSIS OF METABOLIC SYNDROME: PREVALENCE AND

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Postgraduate Medical Centre, Karachi*

**Objective:** Metabolic Syndrome (MetS) is a major public health concern. The aim of this study was to estimate the frequency of MetS, its components, and factors associated with MetS amongst apparently healthy individuals in Pakistan.

**Method:** A retrospective cross-sectional study was conducted

at the executive Clinics of Aga Khan Hospital, Pakistan. Medical records of patients aged =18 years visiting the clinics from July 2011 to December 2011 were consecutively reviewed. Records in which either MetS components data or 10% of overall data was missing were excluded. A total of 1329 participants' records was included in final analysis. Data was analyzed using SPSS version 19 and multivariable logistic regression was used to identify the factors associated with MetS

**Results:** A total of 847 (63.7%) participants had MetS; mean age of the participants were 47.6±11.6 years. About 70.4% were males and 29.6% were females. Approximately 70% of participants had BMI= 25kg/m<sup>2</sup>. MetS was associated with male gender (AOR= 2.1; 95% C.I: 1.6–3.2) and history of diabetes among parents (AOR = 3.0; 95% C.I: 1.6–6.0).

**Conclusion:** This study shows that a large proportion of population has MetS and is overweight or obese. This requires urgent interventions on part of health care providers' especially family physicians. Educating masses about life style factors can make a difference. Further researches on this issue are warranted.

**Keywords:** Metabolic Syndrome, Executive clinics, Urban population

### 5.15

#### TWO-BAG SYSTEM IN THE MANAGEMENT OF DIABETIC KETOACIDOSIS: EXPERIENCE OF FROM A TERTIARY CARE HOSPITAL IN PAKISTAN

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Karachi*

**Objective:** To present experience of Diabetic Ketoacidosis (DKA) management in children using "Two Bag Systems" from a developing country.

**Method:** Retrospective chart review Setting: Aga Khan University Hospital (AKUH), Pakistan. Subjects: Children 0-15 years of age, admitted with diagnosis of DKA at AKUH from June 2006 to June 2011. Methods: Files of all subjects were reviewed. The diagnosis of DKA was based on established international criteria. The time for resolution of acidosis was taken from the start of treatment to reach a venous pH of 7.30 or better. The cost of IV therapy for each bag, and the possible time delays if bags were changed were calculated with help from pharmacy services. **Results:** Total of 76 children were admitted with the diagnosis of DKA. Mean age of 7.3 ± 4.7 years. There were 36 (47.4%) boys and 40 (52.6%) girls. Newly diagnosed cases were 49 (64.5%). 23 (30.3%) cases had mild, 22 (28.9%) moderate and 31 (40.8%) had severe DKA. There were no episodes of hypoglycemia after initiation of therapy. The mean time for acidosis correction was 19.7 hours. There were no deaths in the study group. The time lag for changing the glucose concentration of infusion was 5 minutes after glucose check against a possible 1 hour if new bags were ordered. Cost of fluid therapy was approx. 30 ± 5 \$ for two bag system against a possible 50 ± 5 \$ if it was not used.

**Conclusion:** The two-bag system enables faster fluid therapy changes, allowing a steady and gradual fall in blood glucose after start of insulin therapy in DKA. It is also

cost effective and decreases the work for pharmacy and nursing staff,

**Keywords:** Diabetic Ketoacidosis, Two-bag system, Paediatric

### 5.16

#### WOLCOTT –RALLISON SYNDROME IN A PAKISTANI BABY

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Karachi*

**Objective:** Permanent neonatal diabetes mellitus is a rare devastating condition mostly monogenic in origin and Wolcott-Rallison Syndrome has been identified to be the most common cause in consanguineous families which is characterized by skeletal dysplasias, hepatic and renal insufficiency, neurologic and cardiovascular abnormalities along with early onset diabetes mellitus.

**Method:** Our patient one and half month old born to related (first cousin) healthy parents with weight of two kg. She presented at age of one and half month with history of increased urine output for one day along with fever. Examination revealed tachycardia and dehydration and lab workup showed hyperosmolar hyperglycemic dehydration so managed accordingly and started on insulin after which she stabilized and discharged in stable condition. Genetic workup showed EIF2AK3 mutation.

**Results:** Wolcott-Rallison syndrome (WRS) is a rare autosomal recessive multisystem disorder common in populations in which consanguineous marriages are frequent. It has two main clinical features i.e neonatal/early onset diabetes and multiple epiphyseal dysplasias. Third most common feature is hepatic dysfunction while some cases are reported of renal insufficiency, developmental delay, exocrine pancreatic deficiency and neutropenia. As consanguineous marriages are common in Pakistan so we suspect a higher incidence of this disease and recommend suspecting in neonatal diabetes.

**Conclusion:** WRS is rare autosomal recessive disorder having multisystem involvement with neonatal diabetes as the major presenting symptoms and common in populations where consanguineous marriages are common.

**Keywords:** Wolcott-rallison syndrome, Neonatal diabetes, Permanent

### 5.17

#### CONSEQUENCES OF FETOMATERNAL COMPLICATIONS IN GDM AND IN PREEXISTING DM

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**Objective:** Diabetes mellitus is the most common medical complication of pregnancy. This fact enhances the importance of diabetes during pregnancy as it carries a significant risk to both the mother and the fetus. Despite major advances in clinical management, a higher incidence of malformations and perinatal

morbidity compared to the non-diabetic population is observed. Keeping this background in mind, this observational study aimed to compare the fetomaternal outcomes in pregnancy with gestational diabetes to those pregnant women with preexisting diabetes.

**Method:** A population of 60 pregnant women with singleton pregnancies were enrolled and were divided into two groups based on pre-existing (group A) and gestational (group B) diabetes diagnosed by OGTT

**Result:** Vaginal candidiasis (46.67% & 43.3%) was the most recurrent maternal complication seen in groups A and B respectively, while 30% of the pre-gestational diabetic mothers suffered from preterm labor in comparison to the gestational diabetic mothers (23.3%). Equal incidence of urinary tract infection and pregnancy induced hypertension (23.3% & 30%), polyhydramnios (16.6%), preterm rupture of membranes (10%), and intra uterine growth retardation (6.67%) were observed in both groups. Though gestational diabetic mothers developed hypertension and postpartum hemorrhage (13.3% and 6.67% respectively) as compared to the pre gestational mothers in which only hypertension was observed (13.3%). Fetal complications in group A included NICU admission, low birth weight, still births, shoulder dystocia and congenital anomalies whereas group B neonates had higher frequency of macrosomia, hypoglycemia.

**Conclusion:** Both GDM and preexisting diabetes have adverse fetomaternal outcomes, however some complications are seen more in pre-gestational as compared to gestational diabetes.

**Keywords:** GDM, DM, outcome complications

### 5.18

#### DIFFERENTIAL EXPRESSION OF CYTOSOLIC CALPAIN 10 ISOFORMS IN PAKISTANI POPULATION OF DIABETES TYPE II

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**Objective:** Calpain 10 is one of the susceptible genes for type 2 diabetes mellitus with variable effect in different population. Its protein exist in eight isoforms (a-h) with 75kDa band of CAPN10a, 60kDa of CAPN10b, c & d, 48kDa of CAPN10e, 35kDa of CAPN10 f and 15kDa of CAPN10 g & h, respectively. Calpain 10 overexpression significantly increases the calcium dependent insulin release. Low levels of calpain10 may lead to up regulation of protein kinase C which directly phosphorylates serine residues of insulin receptor. This phosphorylation results in the reduction of their tyrosine kinase activity lead to reduced insulin signaling and ultimately insulin resistance. The aim of this study was to evaluate the difference in expression of Calpain10 isoform in the serum of control and diabetic patients.

**Method:** Age and gender matched control and diabetic patient were recruited from the Pakistani population. Serum samples were analyzed by proteomic approach and immuno-blotting was performed.

**Result:** Result indicated marked difference in the expression profile of controls and patients. Control serum samples revealed more than five bands (90, 75, 60, 35, 24, 18 and 15) referring sizes close to expected calpain isoforms, while patients' serum

samples have shown only two prominent bands (35 and 18) indicating sizes of forms f, g and h on western blots.  
*Conclusion:* It is concluded that the low expression of Calpain 10 isoforms in diabetic patients as compared to the control subject may cause up regulation of the protein kinase C and hence insulin resistance in type II diabetes in different tissues.

*Keywords:* Calpain 10, diabetes, Insulin resistance

### 5.19

#### PRESENCE OF THYROID PEROXIDASE ANTIBODY AMONG APPARENTLY EUTHYROID PREGNANT WOMEN AND RISK OF ADVERSE PREGNANCY OUTCOMES

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*Objective:* To determine the association of presence of thyroid peroxidase antibody and adverse pregnancy outcomes among apparently euthyroid pregnant women. During pregnancy the proper function of thyroid gland is important for the health of both mother and developing fetus and undiagnosed thyroid disease may adversely affect the pregnancy outcome.  
*Methods:* A cohort of 943 clinically euthyroid pregnant subjects were screened prospectively for TPO Ab (thyroid peroxidase antibodies) and followed for pregnancy outcomes. Subjects were recruited by considering inclusion criteria and blood samples were drawn for TPO Ab analysis after taken informed written consent. Study was approved by ethical review committee of AKUH.

*Results:* The age of the cohort ranged from 16-45 yrs. (mean  $\pm$ SD, 27.8  $\pm$ 4.9), mean BMI was 25.96 ( $\pm$ 4.6) kg/m<sup>2</sup> and median parity was 2 ( $\pm$ 1.4). Incidence of positive TPO Ab was 33.4 % and negative pregnancy outcomes were significant among TPO Ab positive subjects (preterm deliveries 3.2% vs 2.9%, RR (95% CI) : 1.42 (0.63,3.206) , miscarriages 6.3% vs. 2.9 % , RR (95% CI): 2.21 (1.17,4.18) p value = 0.014)

*Conclusions:* An increased frequency of positive TPO Ab and a significant number of preterm deliveries and miscarriages were observed among positive TPO Ab subjects. Antenatal screening of thyroid autoimmune disorder in apparently euthyroid pregnant women is helpful to identify women at risk of having adverse pregnancy outcomes.

*Keywords:* Pregnancy, thyroid disease, outcomes

### 5.21

#### R990G POLYMORPHISM OF CALCIUM SENSING RECEPTOR (CaSR) GENE IS ASSOCIATED WITH PARATHYROID HORMONE AND CALCIUM LEVELS IN SUBJECTS WITH VITAMIN D DEFICIENCY

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*Objective:* The aim of this study was to establish an association between CaSR polymorphisms, PTH and calcium levels in females with vitamin D deficiency (VDD).

*Methods:* In our cross-sectional study, CaSR polymorphisms of 125 females having VDD and known iPTH and calcium levels were analysed by RFLP-PCR, using genomic DNA extracted from peripheral blood lymphocytes. R990G polymorphism was defined as substitution of arginine (genotype A/A) with glycine (G/G), and A986S polymorphism as substitution of alanine (G/G) with serine (G/T and T/T).

Data was analyzed by SPSS 19. Quantitative variables were reported as mean  $\pm$  SD. Mann-Whitney rank sum test was applied taking P value < 0.05 significant. Binary logistic regression analysis using A986S and R990G SNPs as dependent variable and PTH and calcium as covariates was done.

*Results:* The mean age was 30.3 $\pm$ 8.3 years. Mean blood levels of iPTH, 25OHD and calcium were 101.04 $\pm$ 84.3 pg/ml, 8.2 $\pm$ 7.6 ng/ml and 9.02 $\pm$ 0.6 mg/dl respectively. Out of 125 females, 45% had secondary hyperparathyroidism (sHPTH) with mean iPTH levels of 151.05 $\pm$ 104.1 pg/ml. The GG genotype frequency for R990G polymorphism was 18% (n=23), whereas for A986S, genotype GT was 27% (n=34) and TT 6% (n=8). In subjects with R990G polymorphism, iPTH levels were higher (mean 135.7 $\pm$ 134 vs. 90.8 $\pm$ 60pg/ml with p<0.05) and calcium was lower (8.7 $\pm$ 1.1 vs. 9 $\pm$ 0.4mg/dl with p<0.05) in the GG genotype group compared to the genotype AA. According to the results of binary logistic regression sHPTH individuals are 4 times more likely to have R990G polymorphism than participants with normal PTH levels while lower calcium levels are 2 times more likely to occur in R990G polymorphism as compare to AA genotype. On the contrary, association of A986S polymorphism with serum PTH, or calcium levels was not observed in the present study.

*Conclusions:* The GG genotype of R990G polymorphism of CaSR gene is found associated with higher iPTH and decreased calcium levels.

*Keywords:* CaSR, VDD, polymorphism, sHPTP

### 5.22

#### EFFICACY OF COMMERCIALY AVAILABLE MEGA DOSES OF VITAMIN D<sub>3</sub> TO ACHIEVE OPTIMUM VITAMIN D LEVELS: PRELIMINARY FINDINGS FROM PAKISTAN

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*Aga Khan University, Karachi*

*Objective:* To evaluate the optimal dosing interval of vitamin D replacement in vitamin D deficient individual with different commercially available mega dose preparation.

*Methods:* A comparative prospective open label, randomized comparative study is being conducted at Aga Khan University Hospital, Karachi for one year with 4 follow-ups at 2, 4, 6 and 12 months interval. Adult patients of either gender with vitamin D (VD) levels < 20ng/ml were recruited. The study participants were randomly assigned into 4 groups of 25 patients each as follows, Group 1: 600,000 units IM; Group 2: 600,000 units Oral; Group 3: 200,000 units IM; Group 4: 200,000 units Oral. Serum VD levels along with serum and urinary calcium and creatinine levels were rechecked after every two months.

*Results:* Mean baseline VD levels of group 1 and 2 patients were 7.0ng/ml and 10.3 ng/ml, respectively; which were significantly (p < 0.001) increased and become normal when

monitored after two months i.e. 32.02 ng/ml and 30.38 ng/ml. Mean VD levels were also significantly increased in patients treated with 200,000 units of vitamin D dose either IM or orally but did not reach optimum levels and remained below 30ng/ml i.e. 27.26 ng/ml and 24.19 ng/ml for Group 3 and 4 respectively. Mean VD levels were significantly different between the four intervention groups after 2 months follow-up.

*Conclusions:* Treatment of VDD with single dose of 600,000 units IM or orally is sufficient to achieve optimum VD levels after 2 months of giving a mega dose of VD.

*Keywords:* Vitamin D deficiency (VDD), treatment

### 5.23

#### FREQUENCY OF PARATHYROID HORMONE DISORDERS IN PATIENTS PRESENTING AT AN OUT-PATIENT CLINIC

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*Objective:* Owing to the improved clinical laboratory technology the perceived clinical spectrum of parathyroid disorders has changed from a disorder characterized by severe bone and kidney disease to one with mild symptoms. The objective was to determine the frequency of parathyroid hormone (PTH) disorders at out-patient clinics.

*Methods:* Medical records of subjects tested for Ca, iPTH and 25OHD from October 2010 to mid-January 2011 at clinical laboratory of AKUH were reviewed. Cut offs used for Ca, iPTH and 25OHD were, 8.4-10.2 mg/dl, 16-87 pg/ml and 30ng/ml respectively. Patients were characterized into primary (calcium =10.2 and iPTH =87) and secondary (Ca<8.4 or normal and iPTH levels =87) hyperparathyroidism and primary (calcium <8.4 and iPTH<16) and secondary hypoparathyroidism (calcium =10.2 and iPTH<16).

*Results:* Forty seven subjects were included in the study. Mean age was 49 (19) years; 53.19 % were females. Mean iPTH and 25OHD levels were 170.98 (269.62) pg/ml and 18.77(14.62) ng/ml respectively. Eighty percent had vitamin D a level below 30 ng/ml. Primary hyperparathyroidism was diagnosed in one case while 42.5% had secondary hyperparathyroidism (mean Ca 8.45±0.99 mg/dl). Mean 25OHD in patients with hyperparathyroidism was 15.39 (13.5) ng/ml. Hypoparathyroidism was seen in 19%; 14.8% of the subjects had secondary hypoparathyroidism (mean Ca 11.26±0.87 mg/dl), while 4.2% had primary hypoparathyroidism (mean Ca 6.7 mg/dl). Mean 25OHD in patients with hypoparathyroidism was 19.6(11.06).

*Conclusion:* The predominant parathyroid hormone disorder is secondary hyperparathyroidism due to 25OHD deficiency followed by secondary hypoparathyroidism. It is important to screen for parathyroid disorders by testing with iPTH. Assumptions about 25OHD status should not be made based on iPTH and Ca values.

*Keywords:* iPTH; calcium; 25OHD.

**6.1****A RARE COMPLICATION (AORTIC THROMBOSIS) OF COLORECTAL CARCINOMA IN A 55-YEAR-OLD PATIENT. A CASE REPORT AND REVIEW OF LITERATURE**

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**Case Report:** Colorectal Carcinoma (CRC) is the fourth most common cancer in men and the third most common cancer in women worldwide. The increased risk of thromboembolic events associated with invasive procedures, chemotherapy, immobilization and malignancy induced hypercoagulable state are well documented in Literature. Venous thrombi are often associated with CRC and have been reported in literature, but aorta is usually not a common site of thrombus formation in the setting of CRC. We report a case of a descending aorta thrombus in a patient with CRC and liver metastases, which arised without any surgical intervention or chemotherapy and has not been reported previously in literature. Aortic thrombi may have devastating complications like peripheral embolism and may cause angina and ischemia, so it requires prompt recognition and treatment.

**Keywords:** Aortic thrombus, Ca Rectum, --

**6.2****ACUTE APPENDICITIS; CAN CORRELATING ULTRASOUND FINDINGS WITH ALVARADO SCORE IN CHILDREN HELP PREDICT DIAGNOSIS MORE ACCURATELY.**

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**Objective:** To evaluate the effectiveness of focused appendicitis ultrasound (FAUS) combined with Alvarado score to accurately identify children with suspected appendicitis, thus avoiding unnecessary CT scan or surgery

**Method:** We retrospectively reviewed the US and Histopathological findings of 239 children upto the age of 15 years who underwent focused ultrasound for abdominal pain at our Radiology Department from January 2009 to October 2011. Clinical and laboratory data of all who were operated and confirmed appendicitis were reviewed. Clinical score was retrospectively calculated and correlation of score with ultrasound finding and surgical results was seen. Alvarado score assigns points based on RLQ pain, rebound vomiting, fever, leukocytosis, anorexia and pain migration. This being a retrospective data based study had the limitation of reliance on documented clinical findings and non availability of data for patients who were not operated.

**Results:** 239 patients with clinical suspicion of appendicitis were referred for focused ultrasound for appendix. 163 were negative for acute appendicitis on ultrasound examination and were not operated. Fifty nine (81%) out of total 72 patients operated were positive for acute appendicitis and were positive on histopathology. These had an average clinical score above 5.1. Thirteen were negative on ultrasound they also have a lower clinical score i.e. average 4.5.

**Conclusion:** Focused ultrasound has high sensitivity in acute appendicitis, its correlation with higher Alvarado score can suggest the diagnosis more confidently thus avoiding radiation risk as in CT and also reducing negative rate of surgery. Review of negative cases need to be performed prospectively to improve validity of the study.

**Keywords:** Appendicitis, Alvarado Score, Ultrasound

**6.3****AN EXPERIMENTAL STUDY ELUCIDATING THE GUT MODULATORY PROPERTIES OF A COMPOUND FORMULATION**

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*Department of Biological & Biomedical Sciences, Aga Khan University, Karachi*

**Objective:** This study was aimed to provide an evidence for the gut modulatory effects of a polyherbal formulation (POL-4) composed of four edible medicinal herbs namely; *Gymnema sylvestre*, *Trigonella foenum-graecum*, *Cichorium intybus* and *Nigella sativa*.

**Method:** The laxative and antidiarrheal assays were carried out using rats, while isolated rabbit jejunum and guinea-pig ileum preparations were used to study the possible mode of action.

**Results:** The crude extract of POL-4 (POL-4.Cr) produced a dose-dependent laxative effect at 50 and 100 mg/kg, however, at high doses (300 and 500 mg/kg), it exhibited antidiarrheal effect. In isolated guinea-pig ileum, the spasmodic effect of POL-4 (0.01-10 mg/mL) was blocked when assessed in the presence of atropine. In isolated rabbit jejunum, the crude extract produced spasmodic effect at 0.1-5 mg/mL followed by spasmolytic effect at the next higher dose of 10 mg/mL. The spasmodic effect was mediated partially through the activation of muscarinic receptors, which was evident by its partial blockade in the presence of atropine. For identification of its spasmolytic effect when tested on K<sup>+</sup> (80 mM)-induced contraction, POL-4.Cr caused complete relaxation. Further, pretreatment of the tissue with POL-4 extract shifted the concentration response curves of Ca<sup>2+</sup> to the right with suppression of maximum response, similar to the effect of verapamil, suggesting the presence of Ca<sup>++</sup> antagonist activity.

**Conclusion:** POL-4 possesses gut modulatory activities; the spasmodic effect is mediated partially through the activation of muscarinic receptors, while its antispasmodic effect was mediated through Ca<sup>++</sup> antagonistic pathway. This study provides an evidence for dual efficacy of POL-4 with gut stimulatory and inhibitory effects, thus has the therapeutic potential in constipation and diarrhea.

**Keywords:** POL-4, laxative, antidiarrheal

#### 6.4

##### AN INTERESTING CASE OF "DIVERTICULITIS" CAUSED BY INGESTED CHICKEN BONE

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**Objective:** Although majority of ingested foreign bodies often pass the gastrointestinal tract (GI) without any complications, some foreign bodies, such as chicken bones, fish bones, dentures, may cause perforation of the GI tract. We present a case of GI complication related to chicken bone ingestion. **Results:** 54-year-old morbidly obese female, with multiple comorbidities, and significant past surgical history including appendectomy, cholecystectomy, and total abdominal hysterectomy and bilateral salpingo-oophorectomy, presented to ED with about 5 days history of left lower quadrant abdominal pain, associated with some nausea and decreased appetite. The patient underwent CT scan of the abdomen and pelvis in the ED, which showed diverticular disease within the sigmoid colon, with an area of fat stranding adjacent to the diverticulosis within the proximal sigmoid colon, suggestive of diverticulitis. There was no intra-peritoneal free air to suggest perforation. Conservative management of non-complicated diverticulitis was started without significant improvement. CT scan of the abdomen and pelvis was repeated 4 days later, which revealed a curvilinear dense calcification, likely a chicken bone, within the sigmoid colon lumen in the region of previously noted diverticulitis. Retrospect review of patient's old CT scan revealed that this density was not clearly delineated. Patient underwent flexible sigmoidoscopy which revealed a foreign body, a chicken bone, in the sigmoid colon, with one end of the bone within a diverticulum. There was a question of micro-perforation at the end of the bone. The chicken bone was retrieved and clip was placed successfully over this area. Following this procedure, patient's improved clinically and was discharged to home. **Conclusion:** The lack of history of ingestion and detection on cross-sectional imaging of chicken bones or other foreign bodies are of interest to be considered in the differential diagnosis of acute abdomen.

**Keywords:** Diverticulitis, Foreign body ingestion, --

#### 6.5

##### AN UNSUAL CAUSE OF ACUTE PANCREATITIS. (DUODENAL HEMATOMA)

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**Case Report:** Intramural duodenal hematoma (IDH) is a rare disease in which there is hematoma formation within the wall of duodenum, and was first reported at autopsy in 1838 by MacLauchlan. IDH occurs mainly in children, secondary to blunt abdominal trauma(1), and in adults, abdominal trauma accounts for > 70% of cases(2). We report a case of a 29 years old man who presented with severe abdominal pain, absolute constipation and two episodes of vomiting since 1 day. The

patient was found to have an Intramural duodenal hematoma (IDH) measuring 110mm x 52mm x 82mm. The Patient developed acute pancreatitis secondary to IDH; possibly due to compression of pancreatic tissue outflow. The patient underwent surgery for the removal of duodenal hematoma after which his pancreatitis resolved. Acute pancreatitis secondary to IDH is a rare disease and the association between the two has not been established. We suggest that further research must be conducted to unveil the causes of non-traumatic IDH and its association with acute pancreatitis

**Keywords:** Hematoma, pancreatitis, Upper GI bleed

#### 6.6

##### ANTI-BACTERIAL ACTIVITY OF DATES AND HONEY ON E-COLI

*Mazeera Asam, Nazish Hussain Ali, Alizah Alman*  
*Medical Student, Aga Khan University, Karachi*

**Objective:** One of our microbiology projects was about the antibacterial activity of honey so we modified that idea and searched that dates also show the antibacterial activity. Therefore we conducted an experiment to compare their anti-bacterial activity.

**Method:** A standard pour plate method was used in which bacterial growth for both honey and dates were observed. The honey and dates were both 30% diluted and 1 ml was pour in each Petri plates. The petri plate were incubated for 24-48 hours at 37c.

**Results:** The data were collected for both honey and dates. It was observed that the dates shows more anti-bacterial activity than honey. Osmolarity and flavonoids in both honey and dates helps to inhibit the bacterial growth.

**Conclusion:** Dates shows more antibacterial activity than honey on e-coli.

**Keywords:** honey, dates, anti-bacterial activity

#### 6.7

##### ANTIDIARRHEAL, ANTISPASMODIC AND AIRWAYS RELAXANT EFFECTS OF BERGENIA LIGULATA AND ITS PURE COMPOUND BERGENIN IS MEDIATED PREDOMINANTLY THROUGH ACTIVATION OF K<sup>+</sup>-CHANNELS

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**Objective:** This study has been carried out to provide the pharmacological basis for the medicinal use of *Bergenia ligulata* in diarrhea and asthma.

**Method:** The crude extract of the rhizome of *B. ligulata* (Bl.Cr) and its pure compound, bergenin were studied using the in-vivo and in-vitro assays. Mice were used for the in-vivo antidiarrheal while, for the in-vitro experiments, isolated tissue preparations of rabbit jejunum and guinea-pig trachea were used.

**Results:** Both Bl.Cr and bergenin showed a dose-dependent

glibenclamide-sensitive protection against castor oil-induced diarrhea in mice, like cromakalim, indicating the presence of K<sup>+</sup> channel opening (KCO). The KCO effect was confirmed in isolated rabbit jejunal and guinea-pig tracheal tissues when Bl.Cr and bergenin selectively inhibited at low doses (0.1-3 mg/mL) the spontaneous, carbachol and low K<sup>+</sup> (25 mM)-induced contractions, while a partial inhibition was observed against high K<sup>+</sup> (80 mM), similar to cromakalim. In both jejunum and tracheal preparations, glibenclamide prevented the inhibitory effect of Bl.Cr and bergenin against low K<sup>+</sup>-induced contractions, like cromakalim, while verapamil, a standard Ca<sup>++</sup> antagonist, inhibited low and high K<sup>+</sup> (80 mM)-induced contractions at similar concentration.

**Conclusion:** These results indicate that the crude extract of *B. ligulata* and bergenin possess antidiarrheal, antispasmodic and bronchodilatory activities mediated dominantly through the activation of K<sup>+</sup>ATP channels. Thus, this study provides sound pharmacological basis to the medicinal use of *B. ligulata* and the therapeutic potential of bergenin may be a good candidate to be developed for hyperactive gut and airways disorders.

**Keywords:** Antidiarrheal, bronchodilator, *Bergenia ligulata*

### 6.8

#### CALCIUM CHANNEL BLOCKING ACTIVITY IN DESMOSTACHYA BIPINNATA (L.) EXPLAINS ITS USE IN GUT AND AIRWAYS DISORDERS

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*Department of Pharmacy, Bahauddin Zakariya University, Multan and Department of Biological & Biomedical Sciences, Aga Khan University, Karachi*

**Objective:** *Desmostachya bipinnata*, despite of its popular medicinal uses, has not been widely studied for its effect in diarrhoea, indigestion and asthma. Aim of the present investigation was to provide scientific rationale for these applications. **Method:** Crude aqueous-methanolic extract of *Desmostachya bipinnata* (Db.Cr) was evaluated through in vivo (mice model) and in vitro (isolated tissues) experiments.

**Results:** Db.Cr (100-500 mg/kg) protected mice against castor oil-induced diarrhea, similar to loperamide. When tested on gut preparations, Db.Cr produced atropine-sensitive spasmogenic effect in rabbit jejunum up to 5 mg/ml, followed by partial relaxation at 10 mg/ml. With atropine pre-incubation, a verapamil like inhibitory effect was evident against spontaneous and high K<sup>+</sup> (80 mM)-induced contractions. The maximum stimulant effect was comparable to acetylcholine-induced maximum contraction and was similarly reproducible in guinea-pig ileum. Db.Cr inhibited carbachol (1 μM)-induced contraction in rabbit trachea but caused an atropine-sensitive accentuation of high K<sup>+</sup>-induced contraction at 0.003-0.3 mg/ml followed by inhibition at 1-5 mg/ml. On activity-directed fractionation, inhibitory effect was concentrated in organic and stimulant effect in aqueous fraction.

**Conclusion:** This study, suggesting the presence of calcium antagonist activity, possibly underlying its medicinal effect in

hyperactive gut and respiratory disorders, and cholinergic activity, possibly underlying its digestive effect, provides rationale for these therapeutic uses of *Desmostachya bipinnata*.

**Keywords:** *Desmostachya bipinnata*, diarrhoea, asthma

### 6.9

#### 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, Fatima Jafri, Saeed Hamid, Wasim Jafri*  
*Department of Medicine, Aga Khan University, Karachi*

**Objective:** We determined the in vitro susceptibility of *H. pylori* strains to zinc chloride (ZnCl), compared it to bismuth subsalicylate (BS) and clarithromycin (CLR) and determined whether ethylene diamine tetra acetic acid (EDTA), a zinc chelator can interfere with ZnCl activity against the *H. pylori*. **Method:** Fifty-eight clinical isolates of *H. pylori* strains were used. Agar gel dilution method determine the susceptibility of *H. pylori* isolates to ZnCl 30 μg/ml and 40 μg/ml, BS 20 μg/ml and CLR 20 μg/ml. EDTA 5 M solution was used as a zinc chelator. Suspension of 10<sup>8</sup> bacteria/μl was streaked on the blood agar plate. The control consisted of *H. pylori* incubated without ZnCl, BS, CLR and EDTA. Two sample proportion tests were used to determine the statistical significance (p value). **Results:** *H. pylori* susceptible to ZnCl were 55(95%), 57(98%) were susceptible to BS 20 μg/ml and 46(79%) were susceptible to CLR. 55 sensitive to ZnCl were also susceptible to BS while 67% (2 out of 3) resistant to ZnCl were susceptible to BS (p=0.05). There was a positive correlation between the ZnCl 40 μg/ml and BS 20 μg/ml, r=.57, p<0.001. 46 out of 58 (79%) *H. pylori* were susceptible to CLR. 44 out of 55 (80%) susceptible to ZnCl were also susceptible to CLR. All the isolates remained susceptible to ZnCl in the presence of EDTA.

**Conclusion:** *H. pylori* demonstrate susceptible to ZnCl in vitro. There was no difference in the susceptibility of *H. pylori* strains to BS and ZnCl at 40 μg/ml.

**Keywords:** *Helicobacter pylori*, Zinc Chloride, Bismuth

### 6.10

#### CRIMEAN-CONGO HEMORRHAGIC FEVER: FIRST CASE IN A PATIENT WITH LIVER TRANSPLANT FROM PAKISTAN

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*Aga Khan University, Karachi and Shifa international Hospital, Islamabad*

**Case Report:** Crimean Congo virus, the cause of Crimean Congo Hemorrhagic Fever (CCHF), is an RNA virus with high mortality rate. Human beings are infected after a tick bite or direct contact with blood and/or tissue of affected animal. 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. *Results:* We report a male patient with liver transplant who presented with history of fever, severe generalized body aches and pains and loose stools. 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 PCR. He received Ribavirin but died because of multiorgan failure and 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

#### 6.11

##### CYTOKINE CHANGES IN COLONIC MUCOSA ASSOCIATED WITH BLASTOCYSTIS HOMINIS SUBTYPES 1 AND 3 IN IRRITABLE BOWEL SYNDROME-DIARRHEA

*Javed Yakoob, Zaigham Abbas, Muhammad Waqas Usman, Aisha Sultana, Safia Awan, Saeed Hamid, Wasim Jafri  
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*Objective:* Blastocystis hominis is a parasite found in human large bowel. We determined cytokines (e.g. interleukin-8, 10, 12 and TNF- $\alpha$ ) expression by peripheral blood mononuclear cells (PBMCs) and colonic mucosa in diarrhea-dominant Irritable bowel syndrome (IBS-D).

*Method:* 40 diagnosed IBS-D and B. hominis infection were "cases" and 42 without "control". Cases were IBS-D and B. hominis defined type 1 (subtype-specific primer SB83) and type 3 (SB227), respectively. Stool microscopy and culture performed. Colonoscopic biopsies obtained for histology and cytokines. RNA extracted by Trizol and complementary DNA prepared for Real-time-PCR for mRNA expression of GAPDH, IL-8, IL-10, IL-12 and TNF- $\alpha$  gene

*Results:* In type 1, expression of IL-10 by PBMC had a low mean value (14.5 $\pm$ 1.6) compared to (16.7 $\pm$ 1.5) in type 3 and (16 $\pm$ 2.3) in control (P= 0.002). In type 3, PBMC expressed IL-10 was associated with mucosal lymphocytes (P=0.037) and plasma cell (P=0.003). In type 1, the expression of IL-8 mRNA compared to type 3 and control was (P=0.004 and P=0.002, respectively). In type 3, IL-10 mRNA was (P=0.018) and IL-12 mRNA was (P=0.010) compared to control.

*Conclusion:* In IBS-D concomitant type 1 is associated with IL-8 and IL-12, mediated inflammation with a weak IL-10 response compared to type 3.

*Keywords:* IBS-D, Blastocystis hominis, IL-10

#### 6.12

##### DOES PPI REALLY AFFECT IN RECURRENCE OF ACUTE MI IN PATIENTS OF ACUTE CORONARY SYNDROME: A 2-YEAR FOLLOW UP STUDY AT A TERTIARY CARE HOSPITAL

*Om Parkash, Adil Ayub, Amir Hamid, Wasim Jafri, Hasnain Alishah, Shahab Abid, Saeed Hamid  
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*Objective:* Dual Aspirin-clopidogrel antiplatelet therapy decreases the risk of recurrence of adverse cardiac events after percutaneous coronary intervention (PCI), compared with aspirin alone. To prevent adverse Gastrointestinal (GI) effects in patients receiving the dual anti-platelet therapy, 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 MI in patients with acute coronary syndrome over 2 years follow up

*Method:* Retrospective cohort study on patients with acute MI who underwent PCI on PPI from 1991-2010.

*Results:* A Total of 780 patients were seen and 590 (75.5%) were male. The mean age (SD) of the patients was 57.3(11.4) years. 422(54%) patients presented with NSTEMI mostly involving the anterior wall 335(45.5%). 40(5.1%) patients were excluded and among the remaining 740(94.9%) 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:* 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:* Proton pump inhibitor, Acute MI, Clopidogrel

#### 6.13

##### EFFECTS OF DELAYING APPENDECTOMY IN ACUTE APPENDICITIS

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*Objective:* The aim of this study was to compare the outcomes in patients who underwent early appendectomy (< 12 hours) with those who had delayed appendectomy (12-24 hours) in terms of intraoperative pathology (simple vs complicated appendicitis), postoperative morbidity rate and hospital stay.

**Method:** A retrospective study was performed by reviewing the medical records of all patients who underwent appendectomies after a preoperative diagnosis of acute appendicitis in Emergency Department of Aga Khan University Hospital from January 2010 to December 2011. Patients were divided into early group (who underwent appendectomy within 12 hours of admission) and late group who underwent appendectomy within 12- 24 hours of admission). Data were analyzed using Statistical Package for the Social Sciences (SPSS version 20).

**Results:** A total of 105 patients were identified through Department of Health Information and Management Services. Out of these, n=58 underwent early appendectomy (Group A) and n=47 underwent late appendectomy (Group B). There was no significant difference in age, gender, and ASA levels between the two groups. Time from onset of symptoms to admission in ER was (Patient Delay) was not statistically different between two groups. Significantly more patients underwent workup for diagnosis in Group B as compare to Group A (Urine DR and CT Scan was done in 83 % and 70.2 % of patients in Group B respectively as compare to 60.3 % and 48.3 % of patients in Group A, p=0.001 & p=0.002). Almost 15 % of patients found to have complicated appendicitis intraoperatively in Group A as compare to 19 % in Group B, p=0.62. Both groups were similar in terms of duration of surgery (Group A = 74.14 minutes vs Group B = 64.91, p=0.98), postoperative morbidity rate (Group A = 10.3 % vs Group B = 14.9 %, p=0.48) and length of stay (Stay of > 2 days, in Group A = 29 % vs Group B = 19 % p=0.23).

**Conclusion:** No difference in outcomes noticed, on delaying appendectomy for 12-24 hours, in terms of intraoperative complicated appendicitis, postoperative morbidity or length of stay.

**Keywords:** Appendicitis, delay, surgery

#### 6.14

##### ELECTROPHYSIOLOGICAL CHANGES IN PATIENTS WITH LIVER CIRRHOSIS IN TERTIARY CARE HOSPITAL KARACHI PAKISTAN

*Om Parkash, Ghulam Rehman Mohyuddin, Adil Ayub, Amir Hamid, Saeed Hamid*  
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**Objective:** The recently recognized phenomena of QT interval prolongation in Cirrhosis can be a cause of sudden cardiac death in patients. Several studies have shown the QT prolongation to be related to both the severity of liver disease, and the survival. Our study is the first from South East Asia to measure and discuss this association.

**Method:** An analytical retrospective cross sectional study at Aga Khan University Hospital Karachi. (AKUH) Data regarding demography, clinical features; laboratory and ECG changes was collected.

**Results:** Out of 420 patients, 225 patients who had complete ECG workup were analyzed. Mean age of patients was 54±11 years and 125(56%) were male. 152 (68.5%) had HCV related

cirrhosis, 24(10.8%) had HBV while 7(3.2%) had HBV/HDV and 39(17.6%) had NBNC cirrhosis. The mean corrected QT interval of these patients was .44±0.067sec (Normal< 0.46s). 79 (35.1 %) patients had a prolonged corrected QT interval. Other observed electrophysiological parameters in these patients included the PR interval, of which the majority 216, (96.4%) had normal values (0.12-0.22s). Only 7 patients (3.1%) had a prolonged PR interval (>0.22s). 23 (10.4%) patients were shown to have a prolonged QRS duration. There was no significant association of prolonged QT interval with gender, etiology of CLD and severity of liver disease.

**Conclusion:** There are significant electrophysiological changes (QT prolongation) in liver cirrhosis patients and suggesting that these patients carry with it the risk of arrhythmias such as Torsades de Pointes and sudden cardiac death, we recommend that routine cardiac screening of all cirrhotic patients should be performed.

**Keywords:** Cirrhosis, ECG changes, QT interval

#### 6.15

##### FOCUSED ULTRAOUND FOR ACUTE APPENDICITIS IN PAEDIATRIC POPULATION .

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*Department of Radiology, Aga Khan University, Karachi*

**Objective:** To evaluate the sensitivity of focused ultrasound of right iliac fossa in clinically suspected cases of acute appendicitis in pediatric population.

**Method:** 239 children less than 14 years with clinically suspected appendicitis referred to radiology department from January 2009 to October 2011 were included. Medical records were reviewed for patient demographics, presenting signs and symptoms, sonographic, surgical findings and histopathological results. **Results:** 239 patients with clinical suspicion of appendicitis were referred for focused ultrasound for appendix. 163 were negative for acute appendicitis on ultrasound examination and were not operated. Thirteen were negative on ultrasound however later surgery was performed due to clinical condition and/ or CT examination and they were proven acute appendicitis. Fifty nine (81%) out of total 72 patients operated were positive for acute appendicitis and were positive on histopathology. The ultrasound findings and the clinical features are reviewed

**Conclusion:** Focused ultrasound has high sensitivity in acute appendicitis for the assessment of clinically equivocal cases of pediatric population thus avoiding radiation risk as in CT and also reducing negative rate of surgery.

**Keywords:** Acute Appendicitis, Focused ultrasound, Pediatric population

## 6.16

### GASTRIC MICROFLORA IN PATIENTS WITH EPIGASTRIC PAIN SYNDROME

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Safia Awan, Saeed Hamid, Wasim Jafri  
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**Objective:** The number of different bacteria that can survive in the human stomach is low. These include among others *Helicobacter pylori* (*H. pylori*), *Lactobacillus* species (e.g., *L. acidophilus*), *Streptococcus thermophilus* (*S. thermophilus*), *Escherichia coli* (*E. coli*), etc. The aim of this study was to determine the gastric juice (GJ) microprofile of patients presenting with epigastric pain syndrome

**Method:** Patients symptoms were scored using Likert scale for Dyspepsia. Patients on antibiotics and PPI over the last 2 weeks were excluded. 5 ml gastric juice was obtained and its pH determined. Gastric juice sediment was Gram stained and inoculated on Columbia agar, Macconkeys's media and Chocolate agar for lactose fermenters. Biochemical test urease, catalase, oxidase and germ tube test were used to identify *H. pylori*, *E. coli*, *Klebsiella* species and *C. albican*.

**Results:** Twenty-four GJ specimens were obtained from 17(71%) male. 21 out of 24 (88%) had epigastric pain syndrome (EPS), while 3(12%) had post prandial syndrome (PPS). Age ranged from 20-67 years with mean age  $43 \pm 13$  years. The GJ pH was 1.5 to 5.5 in 16(66%), 5.6 to 7 in 4(17%) and 7.1 to 8 in 4(17%), respectively. *H. pylori* was cultured from GJ in 9 (38%), *C. albican* in 6 (25%), *E. coli* in 4 (17%) and *Klebsiella* in 3 (13%). *H. pylori* coinfection with other microorganisms at a gastric juice pH between 1 to 5.5 was 1(6%) out of 16, 3 (75%) out of 4 at a pH between 5.6 to 7.0 and 1 (25%) out of 4 at pH between 7.1 to 8 ( $p=0.02$ ).

**Conclusion:** Microorganisms isolated from gastric juice beside *H. pylori* included *C. albican*, *E. coli* and *Klebsiella*. Presence of microorganisms was more with gastric juice pH greater than 5.5

**Keywords:** Dyspepsia, *Helicobacter pylori*

## 6.17

### HEMOCHROMATOSIS: EXPERIENCE AT A TERTIARY CARE HOSPITAL IN KARACHI PAKISTAN

Om Parkash, Muhammad Akran, Saeed Hamid  
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**Objective:** Hereditary hemochromatosis (HHC) is a common disorder of iron metabolism. There is an inappropriate increase in intestinal iron absorption with a resultant deposition of iron in parenchymal cells of the liver, heart, pancreas, and other endocrine organs. Early diagnosis and treatment can prevent end-stage complications of cirrhosis, diabetes, hepatocellular cancer. **Objectives:** To describe the cases of hemochromatosis associated liver disease in a tertiary care hospital  
**Method:** Descriptive case series study. Patients were recruited from March 1990 to December 2011. Data was collected regarding clinical features, serum biochemistry, iron studies, child pough score, liver histology in patients with Hemochromatosis

**Results:** All patients were male. Mean age was 53 years (range 35-74). 26.1%(6) had weakness, loss of libido/impotence in 47.8%(11), skin pigmentation in 74%(17), diabetes in 47.8%(11), deranged liver function tests in 82.6%(19), arthralgias in 43.5%(10). 78.3 % ( 18) had cirrhosis, 69.6 % ( 16) had child C cirrhosis. Mean Hb was 12.1 g/dl (range 8.5-17.2), mean platelet count 150 (56-257), ALT: 115, prothrombin time 18.3 seconds (10.7-34.7), albumin 2.7 gm/dl (1.2-4.4). Mean serum iron was 164(56-300), ferritin 3391(1000-8000), TIBC 202(82-339), transferrin saturation 76.8 % ( 33-95.3). Liver biopsy was done in 43.5% (10), histopathological features (Pearl's stain) were consistent with hemochromatosis. Facility for hepatic iron concentration measurement was not available in our center. Only 14.3% (3) had regular phlebotomy. No patient had HCC  
**Conclusion:** We are reporting the largest case series from Pakistan and concluded that this is not a rare disease in this part of world

**Keywords:** Hemochromatosis,,cirrhosis,, child score

## 6.18

### INSIGHT INTO MECHANISMS RESPONSIBLE FOR THE EFFICACY OF MATRICARIA CHAMOMILLA IN HYPERACTIVE GUT DISORDERS

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Anwarul-Hassan Gilani  
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**Objective:** This study was tempted explore the possible mode of action for the medicinal use of *Matricaria chamomilla* in diarrhea.

**Method:** In-vivo studies were performed on rats, while the in-vitro experiments were conducted using isolated tissue bath assembly. The isotonic responses were measured using isotonic transducers coupled with PowerLab data acquisition system.  
**Results:** The oral administration of the crude extract of *Matricaria chamomilla* (Mc.Cr) to rats at the doses of 150 mg/kg and 300 mg/kg produced protection against castor oil-induced diarrhea. When tested in isolated rabbit jejunum and guinea-pig ileum preparations, Mc.Cr inhibited the jejunal spontaneous contractions in rabbit as well as the carbachol (CCh, 1 $\mu$ M), high K<sup>+</sup> (80 mM) and low K<sup>+</sup> (25 mM)-induced contractions in the tissues of both animals. The plant extract was found more potent against low K<sup>+</sup> when compared with its effect on high K<sup>+</sup> or CCh-induced contractions, suggesting the involvement of K<sup>+</sup> channels activation. In an attempt to characterize the type of K<sup>+</sup> channels, when the inhibitory effect of Mc.Cr was reproduced in pretreated tissues, it was completely inhibited by 4-aminopyridine, while partially inhibited by glibenclamide. The inhibitory influence of Mc.Cr on high K<sup>+</sup> suggested the presence of a weak Ca<sup>++</sup> antagonist activity.

**Conclusion:** These results indicate that *Matricaria chamomilla* possessed antidiarrheal and antispasmodic activities mediated preferentially through the activation of voltage-dependent K<sup>+</sup> channels along with the involvement of ATP-sensitive K<sup>+</sup> and voltage-dependent Ca<sup>++</sup> channels, thus providing pharmacological basis for its medicinal use in hyperactive gut disorders like diarrhea.

**Keywords:** *Matricaria chamomilla*, antidiarrheal, voltage-dependent K<sup>+</sup> channels

**6.19****IS THE ROUTINE CHECK CHOLANGIOGRAM FOLLOWING PERCUTANEOUS METALLIC BILIARY STENT PLACEMENT NECESSARY?**

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Medical University, Karachi*

**Objective:** To review our experience with percutaneous biliary stenting and to determine if the routinely conducted check cholangiogram two to three day following stent placement was necessary or not.

**Method:** Retrospective review of patients who had undergone metallic biliary stent placement between January 2005 and December 2011 was performed at Radiology Department of Aga Khan University Hospital. Three most common indications for biliary stent placement were biliary obstruction due to carcinoma of gall bladder, carcinoma of head of pancreas and cholangiocarcinoma. Post biliary stenting an 8 Fr external drain is left in place which is removed after check cholangiogram usually after two to three days.

**Results:** There were 131 subjects (61 males, 70 females), with a mean age of 63 years (range, 27-94 years). 107 check cholangiogram were performed. Eighty-two of 107 check cholangiogram demonstrated a patent stent with free flow resulting in safe external catheter removal. 23 check cholangiograms revealed either sludge or hemorrhage because of which the drains were not removed initially and were removed after approximately a week's time. In 2 instances the drains were removed even later. The serum bilirubin level improved in most patients. In 24 patients data was not available from our departmental records.

**Conclusion:** Percutaneous biliary stenting external drain is a well documented step which is helpful in prevention of sepsis during immediate post procedure period. It also helps to drain any sludge or hematoma secondary to interventions. Check cholangiogram are additional advantage which may not be useful in most cases however it gives satisfactory confirmation of patency of stent but may be omitted if others share similar experience to ours

**Keywords:** Cholangiogram, Biliary, Stenting

**6.20****LAPAROSCOPIC TRANSGASTRIC REMOVAL OF SPOONS AT LEAST 7 YEARS AFTER INGESTION**

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**Case Report:** Introduction: The presentation of ingested foreign bodies in the gastrointestinal system is common in the emergency setting. Depending on their size, they can either be managed conservatively or may require endoscopic removal. We present an unusual case of intragastric foreign bodies (two teaspoons) that presented very late after ingestion. Case: A 29 years old female with no prior co-morbidities presented with an abdominal X-ray demonstrating a metallic spoon shaped foreign body in the epigastrium. She was asymptomatic at this time. She did not

have any recollection of having ingested the foreign body. Approximately 7 years ago an X-ray taken at an international airport demonstrated the foreign body. She was referred for endoscopic removal; however despite multiple attempts this was unsuccessful. The following day two teaspoons were removed laparoscopically by creating a 3cm anterior gastrotomy. She was discharged home on the second postoperative day  
**Conclusion:** Though the majority of ingested foreign bodies can be managed endoscopically, a small proportion will require surgical intervention. Laparoscopic removal of ingested foreign bodies can be safely performed

**6.21****LOW RATE OF RECURRENCE OF HELICOBACTER PYLORI INFECTION IN SPITE OF HIGH CLARITHROMYCIN RESISTANCE IN PAKISTAN**

*Javed Yakoob, Shahab Abid, Wasim Jafri, Zaigham Abbas,  
Khalid Mumtaz, Saeed Hamid, Rashida Ahmed  
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**Objective:** 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

**Method:** One hundred-twenty patients; 116 with gastritis, 3 with duodenal ulcer and 1 gastric ulcer, were studied. Their mean age was 41± 13 years (range 18-77) and male: female ratio of 80:40 2:1. H. pylori were cultured and antibiotic sensitivity was determined by Epsilon meter 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). C-14 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 UBT was positive, endoscopy was repeated with biopsies.

**Results:** 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%. The recurrence was associated with recrudescence in 2(2%) and reinfection in 4(4%).

**Conclusion:** A low rate of recrudescence and reinfection was found in patients with dyspeptic symptoms. H. pylori isolates demonstrated a high invitro clarithromycin resistance.

**Keywords:** Helicobacter pylori, clarithromycin resistance, reinfection

## 6.22

### NONCIRRHOTIC PORTAL HYPERTENSION: A 19-YEAR EXPERIENCE FROM A TERTIARY CARE HOSPITAL

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**Objective:** Noncirrhotic portal hypertension (NCPH) comprises of heterogeneous group of diseases that are characterized by portal hypertension (PHT) due to intrahepatic or extrahepatic lesions, in the absence of cirrhosis of the liver. **Objective:** To evaluate the clinical manifestations, course, pathological features, and causes of NCPH in patients who presented with features of portal hypertension

**Method:** This was a retrospective study. All patients admitted to the Aga Khan University hospital during last 19 years were identified from our medical records and their charts were reviewed. NCPH was diagnosed by the presence of unequivocal evidence of PHT in the definite absence of liver cirrhosis. Cirrhosis was diagnosed on the basis of clinical, biochemical, ultrasound, and liver biopsy (whenever feasible). 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 and 18 (75%) with abdominal pain. Upper GI bleeding was the presenting feature in 13 (54.2%) of patients. Portal vein thrombosis was present in 13 patients with EHPVO. Portal vein cavernous transformation at porta hepatis was seen in 16 patients with EHPVO and none in CHF

**Conclusion:** 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

## 6.23

### PERCUTANEOUS CHOLECYSTOSTOMY IN ACUTE CHOLECYSTITIS: CAN ULTRASOUND FEATURES PREDICT OUTCOME?

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**Objective:** To evaluate if clinical outcome can be predicted from radiologic features in whom cholecystostomy was performed for the treatment of acute cholecystitis.

**Method:** The clinical records and radiologic reports of patients who underwent percutaneous cholecystostomy for suspected acute cholecystitis between Jan 2008 to May 2010 were retrospectively reviewed. A response to percutaneous cholecystostomy was defined as an improvement in clinical

symptoms and signs or reduction WBC within 72 hr of percutaneous cholecystostomy. The patient's clinical presentation, presence of gallstones, gallbladder wall thickening, sludge, distention pericholecystic fluid and perforation was recorded. The clinical and radiologic findings were analyzed for their relationship to response to percutaneous cholecystostomy. **Results:** Sixty-four percutaneous cholecystostomies were performed in 33 male and 31 female patients and were technically successful in all. 55 patients had gallstones, 9 did not. 15 were in the intensive care unit or from ER. Catheter placement was successful in all however one patient went into shock in immediate post procedure period but was managed successfully. 54 patients responded to percutaneous cholecystostomy. In 6 patients condition remained unstable and they expired during the same admission. In 3 patients deteriorated initially and WBC was also raised but later during the admission period they stabilized. 5 patient's general condition became stable, however WBC continued to remain slightly high during the 3 day period of data collection. Patients clinical symptoms and signs and other features as gallstones, pericholecystic fluid, drop in WBC, bile culture are correlated to see their association with patients positive or negative response.

**Conclusion:** Localized symptoms and signs, presence of calculi and pericholecystic collection are predictive of a positive response to percutaneous cholecystostomy, however other co-morbid conditions and age make it difficult to classically identify the sole indicators for the predictors of the outcome.

**Keywords:** Percutaneous cholecystostomy, acute cholecystitis, outcome

## 6.24

### PHARMACOLOGICAL BASIS FOR THE MEDICINAL USES OF TRIANTHEMA PORTULACASTRUM LINN. AS PURGATIVE AND BRONCHODILATOR

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**Objective:** *TriantHEMA portulacastrum*, Linn. is traditionally used in constipation and asthma. Aim of the present study was to provide pharmacological basis for medicinal uses of the plant in gut and airways disorders.

**Method:** Crude extract of *TriantHEMA portulacastrum* whole plant (Tp.Cr) was studied on mice for its laxative effect and isolated tissues preparations to explore possible mechanism(s). **Results:** When studied in mice, Tp.Cr (10 and 30 mg/kg) increased faecal output, similar to castor oil, indicating the presence of laxative activity. In isolated rabbit jejunum and guinea-pig ileum, Tp.Cr (1-10 mg/ml) caused spasmogenic effect, which was followed by relaxation when the tissues were left unwashed. Pretreatment of the tissues with pyrillamine (1  $\mu$ M) abolished the stimulatory effect. Tp.Cr (0.1-5.0 mg/ml) caused inhibition of K<sup>+</sup> (80 mM)-induced contraction in rabbit jejunum, suggestive of the involvement of calcium channel blocking (CCB) activity in its antispasmodic effect. The CCB activity was confirmed when Tp.Cr shifted Ca<sup>++</sup> concentration-response curves (CRCs) rightward, like verapamil. In rabbit trachea, Tp.Cr relaxed CCh

(1  $\mu$ M) and high K<sup>+</sup>-induced contractions and shifted CCh-CRCs to right, like dicyclomine. On activity-guided fractionation, the spasmolytic activity of Tp.Cr was concentrated in its organic, whereas, spasmogenic activity in the aqueous fraction. *Conclusion:* This investigation, indicating that *Trianthema portulacastrum* possesses laxative activity possibly mediated through histaminergic and bronchodilator activity, possibly through combination of anticholinergic and Ca<sup>++</sup> antagonist mechanisms, provides scientific basis for these uses. Presence of spasmolytic activity is probably meant by the nature to offset the adverse effects resulting from excessive gut stimulation at high doses.

*Keywords:* *Trianthema portulacastrum*, laxative, bronchodilator

### 6.25 RADIOFREQUENCY ABLATION IN HEPATOCELLULAR CARCINOMA- EARLY INSTITUTIONAL EXPERIENCE.

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*Objective:* To determine the treatment efficacy, safety and complications related to radiofrequency ablation (RFA) in patients with unresectable hepatocellular carcinoma (HCC). *Method:* 64 patients with HCC (Child class A, B) were treated using RFA using an open laparotomy or percutaneous approach with ultrasound and CT guidance to place the RF needle electrode into the hepatic tumors. All patients were followed to detect treatment-related complications or recurrence of disease. *Results:* All patients were followed up for at least six weeks after RFA. Percutaneous or intraoperative RFA was performed in all patients. A total of 77 discrete HCC tumor nodules were treated with RFA. We performed all procedures in general anesthesia except 1. 60 patients were treated in radiology department, 4 patients were ablated intraoperative in OR. We performed Hydrodissection technique in 7 patients to save other important organs. Local tumor recurrence at the RFA site developed in 5 patients. New liver tumors or extra hepatic metastases developed in 13 patients, but 15 patients had no evidence of recurrence. Out of 31 follow up of some patients is performed outside AKUH and initial follow up is due after some time. These results are in process of compilation. There were no significant complications. 1 patient developed hemorrhage after RFA *Conclusion:* RFA produces excellent local control of disease in a significant proportion of patients and can be performed safely with minimal complications.

*Keywords:* radiofrequency ablation, tumors, CT guidance

### 6.26 SURGICAL TREATMENT OF INFLAMMATORY BOWEL DISEASE: A LOW PREVELANCE, DEVELOPING COUNTRY PERSPECTIVE

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Department of Surgery, Aga Khan University, Karachi*

*Objective:* Inflammatory bowel disease is not a common condition in our part of world. Therefore, there is limited data available

from Pakistan regarding surgical management of this important clinical condition. We have undertaken this study to determine the outcomes of surgical management of IBD at a tertiary care teaching hospital of Pakistan.

*Method:* This case series included adult patients, who were operated between January 1986 and December 2010 for IBD at Aga Khan University Hospital. Outcomes consisted of complications till last follow up and 30 days mortality (disease or procedure related). Patients with ileal pouch were contacted via telephone (since this procedure was performed in recent years) to inquire whether they were satisfied with the functional results or not. Satisfaction was defined as frequency of stools less than four per day and good continence

*Results:* A total of 47 patients underwent surgical treatment for IBD at our institute during last 25 years; 36 patients were included in the review after excluding patients with missing data/files (n=11). Ileal pouch was formed in 25% (n=9) and two of them expired. On telephonic follow up, six of remaining seven patients (85%) were satisfied with the functional results of procedure. Overall incidence of complications was 72% (Figure-1) and wound infection (30.5%, n=11) was the most common cause of early morbidity. Late morbidity included pouchitis and strictures; Pouchitis was encountered in 4/9 (44.9%) and strictures in 2/36 (5.5%). Overall mortality was 38.8% (n=14); eight expired during post operative hospital course and six expired within 30 days of surgery after being discharged from hospital (Table 2). Mean hospital stay was 16 days *Conclusion:* Overall morbidity and mortality of surgical management of IBD is higher than internationally reported incidence from high volume centres. One of the factors that contributed to it is emergency surgery.

*Keywords:* Inflammatory Bowel Disease, Morbidity, Mortality

### 6.27 SURVIVAL RATES AND PROGNOSTIC FACTORS FOR UNRESECTABLE HEPATOCELLULAR CARCINOMA AFTER TRANSCATHETER ARTERIAL CHEMOEMBOLIZATION

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*Objective:* Transcatheter arterial chemoembolization (TACE) is recommended as palliative treatment for unresectable Hepatocellular carcinoma (HCC). However, the efficacy of TACE in prolongation of survival is controversial. Aims: To estimate the survival of the patients with unresectable HCC treated with TACE and to analyze the prognostic factors affecting survival

*Method:* 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 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

*Conclusion:* 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.

*Keywords:* Transarterial chemoembolization, Hepatocellular Carcinoma, Survival rate

## 6.28

### TIME DEPENDENT RELATION BETWEEN 99mTc-LABELED RBC SCANNING AND MESENTERIC ANGIOGRAPHY FOR THE EVALUATION OF ACTIVE LOWER GASTROINTESTINAL BLEEDING

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Maseeh Uz Zaman*

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*Objective:* The purpose of this study was to compare 99mTc-labeled RBC scanning with mesenteric angiography for the evaluation of active lower gastrointestinal bleeding and to see whether their relation is time dependant.

*Method:* From March 2001 to June 2011, 70 patients (46 men, 24 women; age range, 12-87 years) were evaluated with 99m-Technetium labeled RBC scan followed by mesenteric angiography. Subsequent successful embolization of the bleeding vessel was performed in 36 patients. The data was also evaluated for time difference between both the procedures and effect of time interval on the yield of mesenteric angiography.

*Results:* Findings were positive on both examinations in 31 patients and negative on both examinations in 7 patients. Findings were positive on 99mTc-labeled RBC scan and negative on subsequent mesenteric angiography in 27 patients. Findings were negative on 99mTc-labeled RBC scanning and positive on angiography in 5 patients. Fifty eight of 70 (82.9%) 99mTc-labeled RBC scans were positive whereas thirty six of 70 (51.4%) mesenteric angiographies were positive. In thirty nine of 70 (55.7%) 99m-Technetium labeled RBC scans findings were matched on subsequent mesenteric angiography. When this

correlation was further evaluated according to the time interval between the RBC scan and mesenteric angiography, seventeen of 19 RBC scans were matched when the time interval is < 1 hour. During 1-2 hour time interval 11 of 16 scans were matched, 2-5 hour 7 of 15 scans and > 5 hour interval 4 of 20 scans were matched.

*Conclusion:* 99m-Technetium labeled RBC scans can correctly identify the bleeding site if the mesenteric angiography is performed within an hour of the scan. Utilizing this golden hour can significantly reduce the negative angiography rate once the bleeding site is identified on the RBC scan.

*Keywords:* Lower GI bleeding, RBC scan, Angiography

**7.1****A COMPARISON OF THE METHODS ADOPTED FOR TEACHING BEHAVIOURAL SCIENCES BY UNDERGRADUATE MEDICAL SCHOOLS OF PAKISTAN VIS-À-VIS OTHER COUNTRIES: A SYSTEMATIC REVIEW***Iram Khurshed**Department for Educational Development, Aga Khan University, Karachi*

**Objective:** Teaching Behavioural sciences (BS) at undergraduate level fosters the development of caring & competent doctors. Medical schools throughout the world are striving to increase the effectiveness of BS instruction. Realizing its importance, Pakistan Medical & Dental Council introduced the subject of BS in 2005 & provided the course content for the two preclinical years. This study aims to compare strategies used for teaching BS in the undergraduate medical schools in Pakistan with other countries, identify gaps and propose improvements

**Method:** Google-scholar & Medline database were used for systematic literature search from 2000-2011. The pre-specified form of inclusion/exclusion criteria was developed for literature screening. QUESTS-criteria were used to assess quality of the selected articles followed by data extraction.

**Results:** A total of 12 studies met the selection criteria. There was considerable variation in the extent of teaching, teaching methods used and course design, both nationally and internationally. The main findings indicate lack of consistency in how undergraduates are taught BS across various medical schools. In general, lectures were found to be the commonly used teaching method across various countries. However, there is an increasing trend of switch over to other more effective teaching methods & integrated teaching approaches world over in comparison to Pakistan

**Conclusion:** Very few relevant published studies are available on this topic. BS is taught as a separate course, or integrated into the existing courses across various institutions. It is proposed that national guidelines be developed for standardization in instruction with emphasis on vertical integration and student-centeredness. More research is needed to determine which factors help students to apply behavioural sciences effectively. Thus evidence based published data, is strongly recommended to augment structured course planning in BS

**Keywords:** Behavioural Sciences, undergraduate level, medical education

**7.2****CURRICULUM DEVELOPMENT FOR PEDIATRIC EMERGENCY MEDICINE ROTATION: EXPERIENCE FROM AGA KHAN UNIVERSITY HOSPITAL KARACHI***Jabeen Fayyaz, Huba Atiq, Arshalooz Rahman**Department of Emergency Medicine, Aga Khan University, Karachi*

**Case Report:** With the growing recognition of need had brought the bring pediatrics and emergency medicine together, evolving pediatric emergency medicine to focus on the care of children

in the urgent and emergent care settings. The first pediatric emergency medicine fellowship training program began in 1981 at the Children's Hospital of Pennsylvania. Over the past decade the PEM had shown growth through research fellowship programs and gained recognition in professional organizations like American Academy of pediatrics [3], American College of Emergency Physician (ACEP) and ambulatory pediatric Association (APA). Training in pediatric Emergency medicine (PEM) is integral for Emergency medicine and pediatric medicine residents according to College of Physician and Surgeon of Pakistan (CPSP). While rotating to PEM the residents are expected to manage and decide disposition of life-threatening emergencies children visiting the emergency department few efforts has been done to design a process by which they attain this competence. PEM is still in the phase of infancy in Pakistan, developing a curriculum of PEM rotation is an important and challenging task. Implementing a well-designed curriculum ensures that the resident will attain the capabilities and lean the skills to manage children and adolescents from common to life threatening illnesses in a competent manner. This paper shares our experience of developing the first of its kind curriculum for PEM rotating residents that could be used as a template by other hospitals of Pakistan

**Keywords:** paediatric Emergency Medicine, curriculum, pakistan

**7.3****FACULTY APPRAISALS: TAKING STANDARD-SETTING BEYOND STUDENT ASSESSMENTS***Naveed Yousuf, Rukhsana W. Zuberi, Shazia Sadaf**Department of Family Medicine, Aga Khan University, Karachi*

**Objective:** The Aga Khan University plans to introduce the faculty clinician-educator track. For the educational component four key areas identified are teaching; educational administration; educational research; mentoring and educational innovation. The problem was to assign weightages to these key areas for faculty at different positions to be used for appraisals.

**Method:** Angoff Standard-setting method was adapted to assign weightages which are valid, fair and acceptable. Six judges were selected ranging from instructor to professor levels based on medical / dental qualifications and significant educational responsibility. To ensure fairness, the weightages were decided to be based on the proportion of time expected to be spent on each of the key areas. The prototype question developed for standard-setting was: What is the probability of the faculty [e.g. professor] to spend time on the activities pertaining to key area [e.g. educational research]? Each judge had to make a total of 16 decisions i.e. pertaining to each of the four key areas for faculty at four different positions

**Results:** The judgments were added and averaged to determine the performance weightages for each of the 16 categories. Inter-rater reliability identified using Cronbach's alpha is found to be 0.879.

**Conclusion:** The method adopted matched with the purpose of criterion-referenced decision making. Validity and acceptability of the judgments were ensured by the careful selection criteria for the judges. A high inter-rater reliability indicates the validity



of judgments. Standard-setting methods can be adapted and applied for high stakes valid and reliable decision making even beyond student assessments

*Keywords:* Clinician-Educator Track, Standard Setting, Faculty Appraisals

#### 7.4

##### IMPORTANCE OF CLINICAL TOXICOLOGY TEACHING AND ITS IMPACT IN IMPROVING KNOWLEDGE: SHARING EXPERIENCE FROM A WORKSHOP

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*Objective:* Poisoning is an important cause of morbidity and mortality. It has been identified as a significant global public health problem. According to World Health Organization (WHO) data, in 2004 an estimated 346,000 people died worldwide from unintentional poisoning. Of these deaths, 91% occurred in low- and middle-income countries. Poisonings accounts for 0.86-5.9% of emergency department (ED) visits in developed countries. Pakistan also suffers from the poisoning related mortality and a recent study from Rawalpindi had reported the poison related deaths to be as high as 7.1%. *Objective:* To assess the impact of one day clinical toxicology workshop in improving knowledge. *Method:* Methods: One day clinical toxicology workshop was conducted as a preconference workshop of annual emergency medicine conference. The course comprises of poisoning related common clinical scenarios. 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.

*Results:* Result: The mean score in pretest was 31.6 percent (95% CI; 24-40) and in posttest the mean score was 56.0 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 08(47.46%) and good by 10 (52.63%)

*Conclusion:* Conclusion: Short training in clinical toxicology improves the knowledge.

*Keywords:* Clinical Toxicology, Emergency medicine, Pakistan

#### 7.6

##### INTRODUCING DIPLOMA OF SPECIALIST RENAL NURSING PROGRAM TO UPLIFT THE STANDARDS OF CARE THROUGH COMPETENCY BUILDING: A PROSPECTIVE STUDY.

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*Objective:* The horizon of patient safety with the passage of time has become increasingly demanding. With the growing number of ailments, standard of care is also not confined to one arena. Therefore, every specialized field has its own standard of care that can help to maintain a professional competence and will

indeed be beneficial for our patients. It is important for every practicing nurse to continue competency development through up to date knowledge within the practicing profession and meet the needs of advanced practice nursing and nurses, the healthcare system, and patients? This paper aims to highlight the difference of standard of care through competency building by initiating Dip SRN program.

*Method:* The Diploma in Specialist Renal Nursing was commenced in the year 2011 to enhance the level of competence of registered train nurses into the field of renal nursing. The prime notion of this program was to strengthen the capacities of registered nurses (working in Nephrology and Urology units) to revitalize their skills for the betterment of renal and immunosuppressive patients. The primary intention of every health care provider is to uplift the standards of care for patient suffering from any ailment and to improve the quality of life. Moreover, renal disorders are becoming very common in our country Pakistan; therefore, there is a dire need to reinforce the standards of care within the domain of renal nursing through competency building. The data was gathered from all 5 specialist renal nurses based on observation, daily rounds and through individual discussions via separate verbatim.

*Results:* After the completion of one year Diploma in Specialist Renal Nursing Program, we were able to observe the difference between specialist renal nurses and registered nurses. The specialist renal nurses verbalized during the individual verbatim that their competency level is very high as compare to other nurses. Dip SRN program has helped them enhanced the standards of care of renal nursing and patient safety, it has enable them to develop their critical thinking for their patients, they can work collaboratively with other health care providers and demonstrate less apprehension when caring for the sufferers.

*Conclusion:* The result showed that Specialist Renal nurses were satisfied while dealing the critical patients and provided their utmost to raise the standards of care for renal patients with their competencies learned during the course of Diploma in Specialist Renal Nursing program.

*Keywords:* Competency Building, Standards of Care, Patient Safety

#### 7.7

##### KNOWLEDGE AND PERCEPTION ABOUT BIOETHICS: A COMPARATIVE STUDY OF PRIVATE AND GOVERNMENT MEDICAL COLLEGE STUDENTS OF KARACHI PAKISTAN

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*Introduction:* Ethics plays an elementary role in current medical practice. Recent advancement in medical technology and its implications have raised many ethical issues and dilemmas in clinical practice. Bioethics has been included into the medical curriculum thorough out the world including Pakistan but its importance was overlooked until recently till the Pakistan Medical and Dental Council (PMDC) felt the need of it. Keeping in view the above facts the objective of this study is to assess the base line knowledge and perception of medical students (who are not exposed to medical ethics) regarding bioethical issues in clinical practice

**Method:** This cross sectional study was conducted among medical students of a private medical college who were currently enrolled into third to fifth year MBBS. An Ethics Review Committee approval was taken. A structured questionnaire consisting of 27 questions was used for this study. Data analysis will be done under SPSS version 11.

**Results:** A total of 285 medical students 145 from private medical college and 140 from Government College participated in this study. After adjusting for the effects of other variables in the logistic model the Private college medical students (57%) had better knowledge of bioethics as compared to the Government medical college students 43%. (OR: 2.0; 95% CI: 1.3-3.0)

**Conclusion:** The study clearly signifies the need of teaching bioethics in the medical colleges specifically in Government Medical Colleges. Our findings provide strong evidence for major educational initiatives related to bioethics education in medical curriculum. Strategies are needed to help us create educational approaches that will prepare the next generation of physicians to serve with ethical competence.

**Keywords:** knowledge, bioethics, medical students

## 7.9

### MEDICAL STUDENT ATTITUDES AND BEHAVIOURS REGARDING ACADEMIC MISCONDUCT

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**Objective:** Although, honesty and integrity are key attributes of an ethically competent physician, academic misconduct, which includes but is not limited to plagiarism, cheating, and falsifying documentation, is not uncommon in medical colleges across the world and in Pakistan. The purpose of the study described here is to assess prevailing attitudes and behaviours of medical students in Pakistan regarding academic misconduct.

**Method:** Medical students from one private and one public sector medical college were asked to anonymously complete a brief survey designed to query attitudes and behaviours regarding plagiarism, lying, cheating and falsifying documentation.

**Results:** Preliminary results of the survey reveal that most students can identify what constitutes lying, cheating and stealing, but not all forms of plagiarism. Importantly, ability to identify acts of academic misconduct does not deter students from engaging in the behaviour themselves. Preliminary data analysis also reveals appreciable differences in attitudes and behaviours towards academic misconduct between medical students at a private medical college versus a public sector institution. **Conclusion:** While many students identify and refrain from academic misconduct, several others believe that strict university policies force them to indulge in and accept academic misconduct. The results of this study may be used to inform curriculum and policy matters, to address academic misconduct within the medical school setting.

**Keywords:** academic integrity, academic misconduct, medical students

## 7.10

### MODEL SUGGESTED FOR A UNIFIED NATIONAL SYNCHRONIZATION OF TRAINING: DEVELOPMENT OF STRUCTURED "SELF" STUDY PLAN FOR POSTGRADUATE TRAINING IN ONCOLOGY

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**Objective:** Primary: • To enhance academic standard of postgraduate training in oncology in Pakistan. Secondary: • To establish a learning objective (LO) based training program. • To develop skills among the training according to the specified proficiency levels

**Method:** An oncology skill development pyramid was constructed and discussed in the department of Radiation Oncology, Aga Khan University Hospital (AKU), Karachi. Briefing sessions were conducted with postgraduate trainees from AKUH, KIRAN, JPMC, NIMRA and other national cancer hospitals. Valuable input has been incorporated to develop the basic plan for studying oncology and other relevant subjects. Weekly ATLC (Any Topic of Learner's Choice) session were started to cover the queries brought up by the residents. The basis & strength of gaining knowledge lie in the short group discussions (SGD). Tutorials carried out by the consultants after mutual discussion about the topic. All the trainees went through quarterly end of term assessment (EOTA) which was followed by EOTB (end of term briefing) with trainer for the feedback of trainees to identify areas requiring improvement. End of year exam evaluated residents' academic grip over the subject according to the predefined training proficiency level

**Results:** The results of EOTA, end of year exam & feedback by trainees in EOTB help specify the areas of improvement in this study plan. Each section of the study plan needs special attention following the structure triangle. Monthly refreshers provided a chance to share learning experience among the trainer and learner of different clinical oncology institutes

**Conclusion:** The suggested structured self study plan is appreciable although it has to go through a learning curve to rectify the problems. This would help establish country wide oncology training programs for post graduate students.

**Keywords:** PG Training, national synchronization, self study plan

## 7.11

### NURSING STUDENTS EXPERIENCE OF CLINICAL PRACTICE: A THEORY PRACTICE GAP

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**Objective:** Nursing education is incomplete without incorporating exposure of clinical practice to nursing students as practice provides opportunity to student to relate theory with practice of caring for patients. However, the discrepancy and tension between nursing theory as it is taught in classroom and clinical practice as it is experienced by students in clinical setting is an area of concern and is subject of much debate within nursing education. This paper aims to investigate nursing students' experience of clinical practice and will shed light on the issue of theory practice

gap through the lens of nursing students. The findings of this study will also provide clinical teachers to understand meaningfully the experience of clinical practice as perceived by nursing students.

*Method:* Phenomenological approach was used to discuss lived clinical experience of nursing students with a special emphasis of theory practice gap. Data was gathered by Focus Group Discussion directed about their clinical practice with a special focus of theory practice gap. 40 nursing students of undergraduate and specialist diploma program were selected randomly and were arranged in 4 groups of ten students. FGD were tape-recorded, transcribed and data was analyzed that revealed four factors which contributes to theory practice gap significantly. *Results:* All participants reported the existence of theory-practice gap and also shared its negative impact on their knowledge acquisition, retention and implementation. Majority of the study participants reported having difficulty in relating taught course to their practice. The study findings revealed four factors that contributed significantly in theory practice gap from the student's point of view, lack of clarity regarding student role at clinical area that leads to initial clinical anxiety, insufficient collaboration between clinical nurse and faculty member, ambiguity regarding teacher role at clinical side and inadequately supervised clinical by faculty.

*Conclusion:* The result showed that nursing students were not satisfied with the clinical component of their education. As a result of theory practice gap they experience anxiety and feeling of incompetency. There is an imperative need of modifying approach to clinical practice that will facilitate students learning by bridging the gap between theory and practice.

*Keywords:* theory practice gap, clinical practice, nursing students

### 7.12

#### OH! I HAVE TO GIVE A FEEDBACK: THAT'S DIFFICULT.OVERCOMING THE CHALLENGES OF GIVING FEEDBACK INPOST GRADUATE MEDICAL EDUCATION

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*Objective:* Introduction: There is a general agreement in literature that giving feedback can be difficult and challenging. Clinicians are worried by time constraints and load of patient care responsibilities that decreases interaction with the residents. Limited interaction of the faculty with the students and residents restricts firsthand information about their performances. A baseline survey conducted with the residents at Department of Medicine, Aga Khan University Hospital Karachi informed that although informal feedback was often provided to the residents, regular and structured feedback was lacking. This paper reports faculty perspectives on challenges in providing feedback. *Objective:* To explore faculty's perceptions of challenges in providing verbal feedback to the residents and ways to overcome the challenges

*Method:* After taking informed consent five focus group discussions were conducted with the faculty as part of faculty

development workshops by qualified medical educationists. The faculty comments were noted verbatim which were categorized and then themes were identified.

*Results:* Of 54 faculty members 49 participated in the FGDs. The challenges identified were grouped under: 1. Time constraint a. high patient load in clinics b. limited interaction with resident 2. Faculty related issues a. apprehension of effect on their own evaluation by residents b. no incentive for faculty c. feedback technique not known 3. Educational issues a. feedback not emphasized b. unclear expectations from residents 4. System and Logistic issues a. ambiguous evaluation form b. No support system

*Conclusion:* Faculty was concerned about quantity and quality of observations made and the legitimacy of utilizing subjective opinions to assess and provide feedback. Faculty felt that learner-centered approaches and faculty development workshops in improving feedback skills will be a major source of overcoming the challenges

*Keywords:* Feedback, postgraduate medical education, challenges

### 7.13

#### PBL CASES: VIDEO OR PAPER?

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*Objective:* Problem-based learning (PBL) is one of the pedagogical approaches utilized in the Medical College at Aga Khan University (AKU). In Years 1 and 2, clinical PBL scenarios developed by a multidisciplinary module committee are presented to students in the form of written (paper) cases from which students are expected to derive basic science learning objectives. In response to anecdotal evidence and case evaluations that revealed a decline in student interest in the PBL process, the Introductory module committee decided to test alternative methods of PBL case delivery, specifically, the use of video cases. The objective of this study is to assess the effectiveness of video cases versus paper cases as a delivery methodology for PBL.

*Method:* Year 1 medical students (Class of 2016) at AKU and the facilitators of the Introductory module were requested to complete a brief structured questionnaire after each PBL case (two paper and two video). Case evaluations of the two video cases for Class of 2016 were also compared to the case evaluations of the same cases delivered as paper cases for the Class of 2015. *Results:* Eleven facilitators and 99/100 students consented to participate in this study. 392 (98% response rate) student and 42 facilitator (95% response rate) questionnaires on four cases were evaluated. Students found paper cases more effective compared to video cases ( $P = 0.001$ ), while no significant difference was observed in facilitators' preference ( $P = 0.19$ ). *Conclusion:* Students surprisingly preferred paper over video cases, which may be linked to quality and content of video cases.

*Keywords:* PBL, video cases

**7.14****PEDIATRIC BACCALAUREATE NURSING CURRICULUM IN PAKISTAN: STRENGTHS, LIMITATIONS AND RECOMMENDATIONS**

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**Objective:** Pakistan is a developing country that is struggling with rising child mortality and morbidity rates since many decades. The rising childhood morbidity and mortality rates indicate that this country needs trained Pediatric nurses to promote child health. From an educationist perspective, a pressing need was viewed to appraise whether the existing Pediatric Health Nursing curriculum is coherent with the health needs of Pakistani pediatric population. This paper will explore the way forward to strengthen knowledge, skills and attitudes of future Pediatric nurses in Pakistan.

**Method:** The existing Pediatric Health Nursing curriculum of the Higher Education Commission (HEC)/Pakistan Nursing Council (PNC) was reviewed and analyzed for its alignment, sequence, credits, course objectives, course content, and assessment.

**Results:** Review of the Pediatric Health Nursing curriculum revealed that all of its components are in alignment with the HEC/PNC objectives, and it gives coverage to the four main themes including “integration of knowledge derived from humanities and science”, “effective communication”, “health promotion” and “nursing process”. It was also analyzed that the course can be further improved by involving students in lab based simulation exercises, adding practice sessions for communication, utilizing community sites for students’ clinical practice, and offering sessions on Pediatric medications and drug dosage calculation.

**Conclusion:** Knowledge, attitudes and practices of future pediatric nurses can be enhanced with a Pediatric Health Nursing curriculum that is well aligned, uses an integrated approach, and is in accordance to the health needs of a nation.

**Keywords:** Baccalaureate nursing curriculum, Pakistan, Pediatric nurses

**7.15****ROLE PLAY: A TEACHING STRATEGY THAT ADDS FUN IN LEARNING**

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**Objective:** There are many strategies used by nurse educators to ensure that students of the health professions develop professional competence. Although a number of experiential strategies have been introduced but still didactic styles of delivering material is still in use. It provides an efficient delivery style but it does not promote critical thinking. Experiential approaches used in nursing education include role play, simulation, laboratory projects. Role play has a competitive element that does not exist in didactic lecturing, simulations or practical exercises.

**Method:** This paper will focus the use of a role play as a teaching strategy to support classroom learning in the health sciences nursing education. It will also discuss the literature related to role play and our experiences of using the role play as a teaching learning strategy.

**Results:** The nursing literature highlights many reasons for using role play as a teaching strategy, including the promotion of active learning, encouragement for critical thinking, the value of fun and excitement in learning, and replication of real-life situations. The use of games generally enhances student enjoyment and may improve long-term retention of information.

**Conclusion:** The use of Role Play Games, can promote the development of users’ creativity, autonomy, responsibility and other decision related skills. The use of these games for learning is an immediate consequence of the need to put learners in a context where they must develop their knowledge in an effective way

**Keywords:** Role playing, nursing education, „Learners motivation teaching,, experiential learning

**7.16****SCIENCE TEACHERS’ BELIEFS AND TEACHING PRACTICES IN PRIVATE SCHOOLS OF NURSING, KARACHI**

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**Objective:** The purpose of the study in progress is to understand the pedagogical beliefs of science teachers in professional nursing education. The study also seeks to understand their personal, professional beliefs and how these beliefs influence their practices.

**Method:** Methods of investigation include demographic questionnaire with life history interviews and classroom observations as key methods for data collection. Life-history is used as a methodological lens for in-depth exploration of participants’ lives.

**Results:** Demographic data collected from 26 private, Pakistan Nursing Council (PNC) registered schools of nursing revealed 71% of science teachers are subject specialists i.e. Physiologist, physicists chemists and microbiologists. Rests are doctors, engineers, pharmacists and nurses. Findings suggest, irrespective of science degree teachers hold, the nursing schools hire them to teach basic science courses. The epistemological orientation of science teachers holding degrees in different disciplines may differ; it affects ways scientific concepts are delivered to nurse. Based on demographic findings a sample of 3 subject specialist, 2 female and one 1 participant were selected. Analysis of three interviews and classroom observation data is in progress. Participants’ stories explained that they were differently nurtured, were exposed to different academic and professional institutions and professional development opportunities. Their biographies revealed these distinctions are aligned with their experiences, perceptions and reasons for ways they lived their lives, conceptualized and practiced teaching in professional schools.

**Conclusion:** Findings suggest a strong relationship between the science teachers’ experiences of teaching in professional nursing education and their developing pedagogies. All three of them, with time, experienced dynamism in their pedagogical beliefs affected by the personal, social, cultural, historical and contextual influences.

**Keywords:** Teachers beliefs, Professional nursing education, Life history

### 7.17

#### TITLE: INITIATING AND IMPLEMENTING AN E-ASSESSMENT STRATEGY IN A DEVELOPING COUNTRY

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*Objective:* The online assessment is considered one of the reliable and efficient assessment strategies, especially for a large class. The uses of online multiple choice exam and quizzes are well documented. However, this pedagogical shift requires students', teachers' and administrators' readiness, before they engage in an online examination.

*Method:* The purpose of this project was to introduce the online quiz management on Moodle software for Health assessment course in a baccalaureate Programme in Nursing. An evidence based approach was used; 86 undergraduate students and six faculty members participated in this project.

*Results:* Implementation strategies: Students' and faculty members' readiness and barriers were explored and addressed. They were educated about the change in strategy for quizzes through ongoing power point presentation, written guidelines, module and hands on experience. With ongoing training, online quizzes were developed, implemented an Evaluation and Conclusion: Students and faculty found the online quiz as a comfortable time and cost effective strategy. The benefits of online MCQ test included automated marking, immediate results, students' review of their performance and item analysis. *Conclusion:* Students' readiness for online learning may help educators to engage and assess these students easily and prepare them for the upcoming online world of future. evaluated.

*Keywords:* Online assessment, Assessments on Moodle, Online quizzes

### 7.18

#### TITLE: UNDERSTANDING THE QUALITY OF WRITTEN FEEDBACK FROM THE GRADUATE STUDENTS' PERSPECTIVE

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*Objective:* Excellence in academic performance at the graduate level requires good command on writing skills. Teachers' written feedback can help students develop their writing skills. However, several personal and contextual factors may influence the utilization of feedback by students. Understanding these factors is essential to improve the practices of written feedback. *Method:* Using a descriptive exploratory design, this study aimed to appraise the quality of written feedback in the graduate programmes and to ascertain students' perceptions about it, at a private university in Pakistan. A purposive sample of 15 participants participated in the study. The data were collected through in-depth students' interviews and the teachers' written comments on students' assignments. The interviews were tape-recorded and transcribed verbatim. Data were manually coded and categorized for pattern of similarities.

*Results:* Four categories emerged from the data analysis: variations in experiences, functions of written feedback, characteristics of

effectiveness, and impact of feedback on students. Albeit, students reported variations in their experiences; the findings revealed more similarities than difference about the students' perceptions about the functions and characteristics of effective feedback. The analysis of comment on students' assignments indicated that the amount of feedback varied greatly. Although some feedback focused on form and style, most comments focused on the content. Moreover, the tone of comments lacked a balance in praise, criticism, and suggestions.

*Conclusion:* The findings have implication for students, teachers and the university. Educators must be made aware about the impact of written feedback on students' learning and trained to enhance the quality of their feedback. Institutional policies for graduate programme may bring consistency and positively influence the teachers' practices of written feedback.

*Keywords:* Written feedback, quality of feedback, graduate students

### 7.19

#### TO STUDY THE LEVEL OF KNOWLEDGE AND PERCEIVED CONSEQUENCES OF MEDICAL NEGLIGENCE IN FRESH MEDICAL GRADUATES OF A PRIVATE MEDICAL UNIVERSITY IN KARACHI

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*Objective:* Medical negligence is the one of the leading cause of death in developing countries and as well in developed countries. The incidence of medical negligence cannot be established in Pakistan mainly due to lack of data availability and no accredited system of reporting by the government and medical licensing body. Increasing number of cases of negligence enforced us to think about the revisions in medical curriculum. Study Objectives: To assess the level of knowledge regarding medical negligence among fresh medical graduates and to study the perceived consequences of medical negligence in fresh medical graduates of a private medical university in Karachi

*Method:* A cross sectional study was conducted during July-August 2011 in a private medical university of Karachi. A 30 itemed self-administered questionnaire was developed which was filled by a total of 200 medical graduates upon their consent. The collected data was analyzed using SPSS version 10.0. *Results:* Our results of the study showed that 62% of the participants blame doctors for the act of medical negligence and 87.5% reported that medical negligence affect their career, their image being a doctor and future scope in this profession. 82.5% participants had strongly recommended including medical ethics as a separate subject in the medical curriculum.

*Conclusion:* Medical graduates are stressed due to the increased number of reported cases of medical negligence. This is high time for the government to enforce policy implementation to reduce medical negligence and for the implementing bodies and medical education departments of medical colleges to understand the need of revision of medical curricula. Continued follow-up of this study could provide information to inform further curriculum development and, if appropriate, aid in the design of training programs for the prevention of medical negligence.

*Keywords:* medical negligence, curriculum, medical ethics

**7.20****TASK-BASED LEARNING VERSUS PROBLEM-ORIENTED LECTURE IN NEUROLOGY CME OF GENERAL PRACTITIONERS TO ASSESS IMPROVEMENT IN UNDERSTANDING AND CLINICAL REASONING SKILLS - A QUASI EXPERIMENTAL STUDY**

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**Objective:** Determine the impact of task-based learning versus problem-oriented lecture in terms of improved understanding and clinical reasoning skills of general practitioners in CME on Headache disorders.

**Methodology:** TBL group consisted of 30 self-selected general practitioners divided into 10 small groups with case-based specific tasks and explicitly defined outcomes. The lecture group consisted of 29 physicians who completed pre/post-test. TBL session was split in two; morning period was based on exploring, constructing, integrating learning and experiences into a PowerPoint presentation. Subsequent session was followed by sharing of information to large group. The lecture group had a problem-oriented lecture.

Understanding and clinical reasoning skills of all participants were assessed through a thirty minute pre/post-test, which consisted of 20 one best type multiple choice questions. Reliability coefficient of pre/post-test scores of both groups was calculated through Cronbach's Alpha. Paired T-test was used to determine the statistical significance between pre/post-test scores. Independent T-test was used to compare the impact of two teaching methods on physicians learning.

**Results:** The data was analyzed using IBM SPSS Statistics 19. Reliability coefficient of pre/post-test scores was (lecture group=0.672; TBL group= 0.881). Paired T-test statistics depicted lecture group pre/post-test mean scores as (9 SD 3 vs. 12.4 SD 2.6;  $p < 0.001$ ). TBL group pre-post test mean scores were (9.7 SD 3.6 vs. 14 SD 4;  $p < 0.001$ ). Independent T-Test exhibited insignificant difference in participants' understanding and clinical reasoning skills at baseline (lecture group 8.52 SD 2.9 vs. TBL group 9.7 SD 3.65;  $p = 0.178$ ). However, analyzing the post-scores yielded (lecture group 12.41 SD 2.65 vs. TBL group 14 SD 3.991;  $p = 0.07$ ).

**Conclusion:** Improvement in participant scores in both educational interventions was clearly noticed. We conclude that both problem-oriented lecture & task-based interventions were equally effective and resulted in statistically insignificant difference, so could be considered as vital teaching tools in continuing medical education. Indeed, TBL groups' some edge over lecture group in terms of post-test mean scores, favour TBL's further exploration in longitudinal studies in the context of CME.

**Keywords:** Task-based learning; problem-oriented lecture; Problem-based learning; General practitioners

**7.21****EVALUATING NEUROLOGY CME IN TWO EDUCATIONAL METHODS USING PATTON'S UTILIZATION FOCUSED MODEL TO INFORM PROVIDERS FOR DECISION-MAKING**

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**Objective:** Evaluating neurology CME in two educational methods, lecture vs. Task-based learning, using Patton's utilization focused model to inform providers for decision-making.

**Methodology:** This was an observational cross-sectional inquiry in which the evaluation results sought information on the short term and direct effects of the continuing educational interventions. The questionnaire evaluated the educational elements such as learning objectives met, content covered, presentations at the level of understanding, level of interaction, knowledge gained, time management, queries responded, organization, quality of learning material and overall grading of the educational event. General Practitioners were the key participants in this evaluation and consisted of 60 self-selected physicians distributed equally in both the TBL and lecture groups. Worthen et.al, *Management-oriented approach* seemed fit for this evaluation plan. Patton's utilization focused model was used to produce findings for effective decision making. The data was statistically analyzed using Mann-Whitney U test to know the value of the learning method that satisfied the most participants.

**Results:** The data was analyzed using IBM SPSS Statistics 19. A total of 58 evaluations were returned, twenty-nine from the TBL group and a similar number from the lecture, were included in the final analysis. Participants assigned an overall rating to ten elements using a five-point Likert scale. The analysis of the elements showed higher mean ranks for TBL method ranging between (32.2 -38.4) versus lecture (20.6 -26.8). Most of the elements that were assessed were statistically significant ( $p > 0.05$ ), except time management ( $p = 0.22$ ). However, elements as 'objectives of the activity met' ( $p = 0.07$ ), 'overall grading of the event' ( $p = 0.06$ ) and 'presentations at the level of understanding' ( $p = 0.06$ ) were at borderline. Of the 29 respondents in the TBL group, 75% rated all the elements of the program above very good. In the lecture group, 22 (75%) respondents out of 29 rated almost half of the elements above very good.

**Conclusion:** Majority (75%) of respondents in the TBL group rated all program elements as exceptional as compared to the lecture group in which only half of the elements were rated above very good. The results of nine elements were more or less significant except time management, with considerable difference in the mean ranks between the two groups. We conclude to inform CME providers that task-based learning method made the most impact on participants' satisfaction.

**Keywords:** Evaluation; Management-oriented; Task-based learning; Lecture;

### 8.1 ROLE OF CANCER-ASSOCIATED STROMAL FIBROBLASTS IN BREAST CANCER

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**Background & Objectives:** Tumor stroma plays critical role in human breast cancer progression. However, underlying mechanism between cancer and stromal cells interaction is still unclear. This study aims to develop an in vitro model of normal and cancer associated fibroblast (CAFs) isolated from breast cancer patients and to analyze epithelial cell proliferation in response to stromal cell secreted factors.

**Methodology:** We isolated CAFs from surgically removed breast cancer tissue and their properties were compared with normal mammary fibroblasts (NFs) isolated from the same patient. These cells were genotypically and phenotypically characterized using karyotyping, RT-PCR and Western blotting. Conditioned medium (CM) was collected from breast stromal fibroblasts (NFs and CAFs) and added to MCF-7 (breast cancer cell line) to evaluate the effect of CM on proliferation of breast epithelial cells using MTT assay. Expression of growth factor like fibroblast growth factor (FGF), transforming growth factor  $\beta$  TGF $\beta$ , and insulin like growth factor (IGF1) in CAF was analyzed by RT-PCR.

**Results:** Cancer associated fibroblasts are spindle-shaped cells which express vimentin and smooth muscle actin. Karyotyping revealed 46XX number of chromosomes. Higher rate of expression of TGF $\beta$ , IGF1 and FGF genes were observed in CAF as compared to normal fibroblasts. Conditioned medium from CAF enhanced proliferation of MCF-7 as compared to CM from normal fibroblasts.

**Conclusion:** CM from CAF significantly increased epithelial cell proliferation as compare to normal fibroblast providing a favorable microenvironment for cancer cells. Conclusively CAFs used in this study provide an additional model for enhancing our understanding of breast cancer pathogenesis including tumor stromal interactions.

**Keywords:** Breast Cancer, fibroblast, condition medium

### 8.2 AVENUES TO DETECT ORAL CANCER: AN EPIDEMIOLOGICAL APPROACH

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**Objective:** Warnakulasuriya (2010) reported that oral cancer is the 6th most common cancer worldwide. Bhurgr (2005) stated an increase in the age standardized incidence rates (ASIR) per 100,000 in Pakistani males from 9.1 to 15.3 and in females from 9.3 to 12.3 in a period of 8 years from 1995-2002. Purpose: To explore the magnitude, causation and early detection of oral cancer and correlate it with contemporary literature.  
**Method:** Systemic review of literature from 28 research articles

from 1999 to 2011 was conducted through electronic medium by using JPMA, SAGE and Google search engines. Furthermore, data from AKUH was also collected.

**Results:** In the Aga Khan University Hospital Karachi, Pakistan, since 2000 till date, 4,039 cases of oral cancers have been diagnosed. With 108 males and 37 females under 18 years of age, 26 males and 52 females at 35 years of age and 2,549 males and 857 females above 35 years of age. Literature supports that the possible risk factors include smoking tobacco, alcohol consumption, betel quid and areca nut chewing with or without tobacco, viruses, diet and deficiency states, and exposure to sunlight (Tanaka et al., 2011). In two studies conducted in Pakistan, and India and Srilanka, the relative risks for smoking were found to be 5.7 and 2.1 for men, and 12.9 and 11.5 for women, respectively (S. Carnelio et al., 2004).

**Conclusion:** Screening should be an ongoing method and not a once-in-a-while project. Warnakulasuriya (2010) suggested that screening for recurrences or second primary tumors is pivotal in the foremost five years preceding treatment. Most recently, the World Health Assembly (WHA) passed a resolution on oral health for the first time in 25 years (Petersen, 2009). This accentuates the requirement for framing policies and strategies for oral health in the 21st century, along with the objective prevention and control of oral cancer.

**Keywords:** Oral cancer, smoking, screening

### 8.3 BACTERIAL SEPSIS: A PROBABLE CAUSE OF HIGH INDUCTION MORTALITY IN PATIENTS WITH ACUTE LEUKEMIA

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**Objective:** Anecdotal experience suggests high rates of induction deaths in Pakistan. We aim to determine the possible clinical factors for death during induction in acute leukemic patients.

**Method:** We conducted a retrospective case series of patients presenting to AKUH (2006-2011) requiring treatment of acute leukemia. Death within 30 days of initiating induction therapy defined early death. Inclusion criteria included age >15, receiving remission induction therapy and death within hospitalization.

**Results:** During 2006-2011, 508 patients were admitted with acute leukemia at AKUH. 185 patients died during induction therapy. Median age was 40 (15-83) years and male: female ratio was 1.8:1. Patients coming from outside city limits had a significant delayed diagnosis of around 30 days (1-393 days). At the time of presentation, 17.8% had documented infection source, with 84% documented through blood culture and Gram-positive Cocci (GPC) (68.4%) being most common. During induction treatment, 31.3% had ongoing fever, with blood culture identifying 86.2% of the organisms. With GPC, (47.5%) and Gram-negative bacilli (GNB), 45% being most prevalent. 61.7% required transfer to step-up care, of which 50% required intubation, 35.9 % required vasopressors and 4.3% had withdrawal of support. The median time from induction to death was 24.5 days (0-777) in AML, and 60 days (7-505) in ALL groups. The overall mortality rate was 36%.

**Conclusion:** The mortality rate observed was similar to other developing countries. High rate of infections may have affected the hospitalization course and prompts further exploration by using a control group to analyze the mortality predictors and modifiers

**Keywords:** Acute Leukemia, early death, induction treatment

### 8.5

#### CARCINOID TUMOR OF THE LEFT MAIN STEM BRONCHUS TREATED WITH WIDE LOCAL EXCISION AND RE-IMPLANTATION OF THE DISTAL LEFT MAIN STEM INTO PROXIMAL BRONCHUS.

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**Case Report:** 35 year old woman with no previous co-morbidities presented with massive hemoptysis. On evaluation with bronchoscopy, it was found that she has a friable polypoidal mass in the left main stem bronchus 3 cm from the carina and this looked highly suspicious of carcinoid tumor. CT Chest showed a near completely occluding mass in the left main stem extending up to the bifurcation into upper and lower lobe bronchi. There was no evidence of any metastasis or lung masses. With these findings it was decided to proceed for urgent surgery and possible pneumonectomy. Using right sided double lumen tube, left postero-lateral thoracotomy was performed. Left hilar vessels and left main stem bronchus was approached and secured. The left main stem bronchus was opened transversely about 2.5 cm from the carina. Polypoid mass was identified distal to the opening of the bronchus. The mass was completely excised with margins and was sent to histopathology. The distal portion of the divided left main stem bronchus was then re-implanted into the proximal left main stem with 2 0 PDS figure of eight sutures. Hence we were able to resect the tumor without doing pneumonectomy. Patient had an uneventful post-operative recovery and histopathology showed complete resection of tumor with negative margins

**Conclusion:** Carcinoid tumors of the main stem bronchi usually require pneumonectomies. However, if possible technically, wide excision of the main stem bronchus and re-implantation can prevent removal of the entire lung

### 8.6

#### CISPLATIN INDUCED POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME AND SUCCESSFUL RETREATMENT IN A PATIENT WITH NON-SEMINOMATOUS GERM CELL TUMOR: A CASE REPORT

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**Objective:** Cisplatin is a platinum compound which has revolutionized the treatment of various solid organ tumors. Cisplatin is associated with a variety of side effects and has recently been indicted in the development of posterior reversible encephalopathy syndrome (PRES). PRES is a potentially reversible condition, with the mainstay of therapy being correction of the underlying cause and withdrawal of the offending drug.

However, there are no clear guidelines regarding the possibility of retreatment with the causative agent.

**Conclusion:** The occurrence of PRES after cisplatin use has been well reported in literature. We strongly believe that our patient also developed PRES secondary to cisplatin. The uniqueness of our case lies in the successful retreatment of the patient with the offending drug. To the best of our knowledge, this is the first instance when a patient was successfully retreated with cisplatin after having developed PRES. The excellent response to retreatment without recurrence of neurological symptoms in this case, provides insight into retreatment as an option in scenarios where treatment options are limited

**Keywords:** Cisplatin, PRES, Retreatment

### 8.7

#### CLINICAL OUTCOME AND PATTERNS OF FAILURE IN NASOPHARYNGEAL CARCINOMA TREATED WITH 3-DCRT AND CHEMOTHERAPY: 5-YEARS EXPERIENCE AT TERTIARY CARE HOSPITAL IN PAKISTAN

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Yasmin Abdul Rashid  
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**Objective:** To evaluate clinical outcome and patterns of failure in patients with nasopharyngeal carcinoma treated with 3-Dimensional conformal radiotherapy along with chemotherapy in a tertiary care hospital in Pakistan

**Method:** From Feb, 2006 to Aug, 2011, 68 newly diagnosed NPC patients were treated with 3-DCRT need to define abbreviation and chemotherapy at our tertiary care hospital. Among them, male to female ratio was 3:1, their ages ranging from 12-85 years (median: 43 years). 13.6% had stage II, 22.7% had stage III, 59% had stage IVA and 4.5 % had stage IVB disease

**Results:** Follow up ranged from 7-67 months (med: 32m). Radiological local complete response (CR) was achieved in 50 % but endoscopic CR was achieved in 95.5 %. Nodal CR was seen 95.5 %. Local failure was seen in 9 (13.5%) and nodal failure was seen in 6 (9%) patients. 12 (18.2%) had distant metastasis, time to distant metastases range from 6-32 months (med: 16 m). 3 (4.5%) died after local failure, 9 (13.5%) died after distant metastases, 6 (9%) died due to other causes. Kaplan–Meier survival analysis is as follows 1-year 2-year 3-year 4-year 5-year loco regional control rates (LRCR) 86.5 % 80.5 % 80.5 % 80.5 % 80.5 % Distant metastases free survival (DMFS) 91 % 86.5 % 82 % 82 % 82% Disease free survival (DFS) 77.5 % 68.5 % 68.5 % 68.5 % 68.5% Overall survival (OS) 86.5 % 77.5 % 73 % 73 % 73% Cause specific survival (CSS) 91 % 82 % 77.5 % 77.5 % 77.5%.

**Conclusion:** High loco regional control rates were seen even with locally advanced presentation of disease (50% T4). Our institutional results are comparable with international published literature. Distant metastases and local complete response is still the main predictor of overall survival in nasopharyngeal carcinoma

**Keywords:** Ca Nasopharynx, Patterns of failure, Concurrent chemo radiation



## 8.8

### CLINICAL OUTCOME OF NON-METASTATIC PRIMARY BREAST CANCER IN SHAUKAT KHANUM MEMORIAL HOSPITAL AND RESEARCH CENTRE

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Shaukat Khanum Memorial Cancer Hospital & Research Centre and Aga Khan University, Karachi

**Objective:** We report on prognostic factors and long-term survival of non-metastatic breast cancer patients treated at a Cancer Research Institute in Pakistan

**Method:** This retrospective cohort study is based on a review of 2829 pathologically confirmed non-metastatic breast cancer patients managed from January 1995 to May 2009. Median age was 45 years. Stage at presentation; stage I (9%), stage II (59%), stage III (32%). Infiltrating ductal carcinoma (92%) constituted the most prevalent histological subtype. ER, PR and Her2-neu were positive in 49%, 50% and 26%, respectively. Mastectomy was performed in 67% and conservative surgery in 33% of the patients. Post-operative radiotherapy was delivered in 85% of the cases. Ninety percent of the patients received chemotherapy and mainly consisted of Anthracycline-based regimens + Taxanes. Hormonal manipulation was done in ER/PR positive patients  
**Results:** The 5 and 10-year OS was 70% (95% CI: 68.2%-71.8%) and 54% (95% CI: 51.2%-56.8%), while DFS was 65% (95% CI: 63%-67%) and 52% (95% CI: 49.2%-54.8%), respectively. Recurrence following primary treatment was seen in 35% of the patients. On multivariate analysis T stage, number of axillary nodal involvement, tumor grade, ER status and family history, were found to be independent predictors for OS and DFS.  
**Conclusion:** Over 90% of non-metastatic breast cancer patients present with Stage II and III disease and a significant proportion develop distant metastasis accounting for overall long-term outcome inferior to developed countries. Efforts should be directed to raise the level of health awareness and screening programs to improve early detection in Pakistan.

**Keywords:** Breast Cancer, Survival, Developing country

## 8.9

### CORRELATION OF KI-67 INDEX WITH MORPHOLOGICAL VARIANTS OF MANTLE CELL LYMPHOMA

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**Objective:** To estimate the proliferation (Ki-67) index of Classic and Blastoid variants of a cohort of Mantle cell lymphoma. Suggest cut off values of Ki-67 proliferation index in Classic and Blastoid (aggressive) variants of Mantle cell lymphoma

**Method:** All mantle cell lymphoma cases diagnosed during 2008 to 2012 at Section of Histopathology, Department of Pathology & Microbiology, Aga Khan University Hospital, Karachi were included.

**Results:** A total of 90 cases of Mantle cell lymphoma were reviewed, including all the morphologic variants. Out of 90, 18 were female patients. Mean age + SD was 60.2 + 12.46 years and median age was 60 years. Non-Classic variants comprised

of 23 cases (25.5%). 22 cases were of extranodal sites. Of the extranodal sites 10 cases were involving gastrointestinal tract and rest included bone, spleen, abdomen, parotid, testis, paravertebral tissue and bronchus. Ki-67 mean + SD in classic & non-classic variant was 29.5 + 14.4 and 64.35 + 15.2 respectively.

**Conclusion:** In this study Ki-67 index show statistically significant difference between Classic & Blastoid variants. We propose <40 Proliferation index to be suggestive of Classic while >50% suggestive of Blastoid variant

**Keywords:** mantle cell lymphoma, lymphoma, proliferation index

## 8.10

### DEAD LINE CHANGED TO LIFE LINE BY AN ANGELIC HAND: NURSES ROLE IN BMT

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**Objective:** The bone marrow" which produce body's blood cell including red blood cell as oxygen carrier, white blood cells as germi shield commander and platelets as blood clotter. Malfunction of this bone marrow can create a radical change in the meaning of life. This malfunction creates exhaustion in patient where a nurse role is vital in the care of patient in all aspect.

**Method:** Literature review

**Results:** A bone marrow transplant is a physically, emotionally, and psychologically exhausting procedure for both the patient and family. A patient needs and should seek as much help as possible to cope with the experience. "Toughing it out" on your own is not the smartest way to cope with the transplant experience. In this condition a nurse role is very vital

**Conclusion:** Nurses play a vital role in the care of the patient undergoing bone marrow transplantation. Responsibilities include supporting patients through the procedure and the recovery phase, by monitoring changes in their condition and administering a range of therapeutic interventions (such as blood products or antibiotics). nurse is playing a two way supporter angel between the family and patient. The motto of the bone marrow transplant nurse is: "with the patient for the patient; a guardian angel in a form of nursing agent"

**Keywords:** Nurse, patient, bone marrow transplant

## 8.11

### DIHYDROTESTOSTERONE TREATMENT INCREASES STEM CELL-LIKE POPULATION IN DAR-19 PROSTATIC CELL LINE PROSTASPHERES

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**Objective:** Stem cells differentiate into cancerous cells and cancer stem cells, which have the capability of forming prostaspheres in vitro. Prostate cancer epithelial DAR19 cells

prostaspheres contain stem cell-like population which is used to evaluate the proliferative effect of Dihydrotestosterone (DHT) treatment on increase in stem cell population and hence this resulted in differential expression of stem cell markers at transcriptional and translational level from different passages. *Method:* DAR19 cells were cultured in DMEM containing 10 % FBS. After achieving confluence, cells were labeled using CD133 labeled Microbead kit (Miltenyi Biotech) followed by Magnetic Assisted Cell Sorting (MACS) as per manufacturer's instructions. The MACS was utilized to sort cells into CD133<sup>+</sup> and CD133<sup>-</sup> subpopulations. These subpopulations were cultured separately on Poly-HEMA coated 96 well plates in either serum free DMEM (SFM) or SFM containing B27, N2, EGF and FGF as supplements (SFMS) at a seeding density of 1000 cells/ml. Prostasphere formation was observed twice a week. Primary spheres (P<sup>0</sup>) were subcultured in SFMS on Poly-HEMA coated 24 well plates to generate secondary spheres P<sup>1</sup> which were further subcultured into secondary spheres P<sup>2</sup> and P<sup>3</sup> in similar conditions. Secondary spheres P<sup>3</sup> were treated with 1 nm and 2 nm DHT in SFMS with respective controls and without DHT treatment.

*Results:* DAR19 formed prostaspheres both in CD133<sup>+</sup> and CD133<sup>-</sup> subpopulation in SFMS after 15 days and in SFM after 40 days. After DHT treatment, prostaspheres population increased.

*Conclusion:* DAR19 increased prostasphere formation in CD133<sup>+</sup> and CD133<sup>-</sup> subpopulations on Poly-HEMA coated plates in SFMS which indicates the proliferation of stem cell-like population in the pool.

*Keywords:* Prostate cancer stem cell, prostaspheres, dihydrotestosterone

#### 8.12

##### DOXORUBICIN TREATMENT OF BREAST CANCER SINGLE CELL CLONES ENRICHES STEM-LIKE CELLS

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*Objective:* Hormonal therapy of breast cancer (BCa) brings about several challenges, of which recurrence being the leading one. It has been shown that recurrence is due to the presence of cancer stem cells (CSCs), a sub-population of cells residing within the tumor. The aim of this study was to develop cancer stem cell model by exploiting their properties of resistance to treatment with anti-cancer agents and to develop new therapeutic strategies for the elimination of CSCs.

*Method:* Single cell clones (SCC) were established in 96-well plates using DMEM containing 10% FBS. Isolation of CSCs was carried out by culturing SCCs in Serum-Deprived Medium (SDM) followed by the medium containing 2% serum (M2F) for six weeks. Spheres were passaged, dissociated and sub-cultured in stem cell medium. Sphere forming ability was assessed and further characterization of these clones was carried out by assessing the expression of differentiation. Expression of stem-cell markers was analyzed by semi quantitative RT-PCR. Results were compared with parental cell line. Doxorubicin-resistant clones were established and assessed for their growth and sphere forming ability

*Results:* Spheres formed in complete medium showed differentiation and grew as monolayer, also exhibiting differential expression levels of differentiation and stem-cell markers. When sub-cultured in stem-cell medium following dissociation to single cells, these clones retained sphere forming ability. Doxorubicin-resistant clone tend to grow in spheres when sub-cultured in stem-cell medium

*Conclusion:* Sub-clones of Breast cancer cell line exhibiting stem-like properties can be established in the lab using serum deprived culture conditions and resistance property of stem cells. These cell lines can be used as stem cell-like model and to unravel mechanisms of breast cancer recurrence attributed to CSCs

*Keywords:* Breast cancer, stem cells, doxorubicin

#### 8.13

##### EMERGENCY DILATATION AND CURETTAGE ALONG WITH HEMODYNAMIC INSTABILITY IN A PATIENT WITH BOMBAY RED BLOOD CELL PHENOTYPE.

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*Objective:* Bombay is a rare autosomal recessive phenotype within the ABO blood group. It is genetically suppressed A, B and H genes. When considering such patients for transfusion, only blood of identical Bombay type can be safely transfused. *Method:* We are reporting a patient having Bombay phenotypic blood, underwent emergency dilatation and curettage with active per vaginal bleeding.

*Results:* It becomes a real challenge for the anesthesiologist to manage such type patients without having units of red packed cell.

*Conclusion:* The Bombay type is very peculiar because in routine tests for blood grouping it is a O type, but during cross matching procedure donor's O-type cells get clumped with the serum of Bombay type recipient. In cases of elective surgeries preoperative autologous blood donation and acute normovolemic haemodilution is an option while in emergency surgeries the blood banks should have the names of the donor's with Bombay phenotype.

*Keywords:* Bombay phenotype, hemodynamic instability, dilatation and curettage

#### 8.14

##### ESTABLISHMENT AND CHARACTERIZATION OF A NOVEL BREAST CANCER CELL LINE

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*Objective:* Metaplasia is defined as a change from one cell type into another. Metaplastic carcinoma is a rare entity of breast cancer (BCa) characterized by transformation of infiltrating ductal carcinoma into non-glandular component such as mesenchymal phenotype. These tumors exhibit heterogeneity with spindle, squamous, chondroid or osseous differentiation. Management of these tumors is challenging as they are negative

for expression of estrogen, progesterone receptors and HER-2/neu amplification (ER, PR & HER-2/neu) hence limiting the use of targeted therapies. These tumors also exhibit chemoresistance. Appropriate invitro model is required to study signaling mechanisms of this unusual variety of BCa

*Method:* Primary cell line was established from wedge biopsy of a 65 year old Pakistani female patient diagnosed with T4N1M0 metaplastic carcinoma of breast. Specimen was procured in DMEM, processed under aseptic conditions by mincing and gentle pipetting followed by culture in DMEM supplemented with 10% fetal bovine serum. Epithelioid colonies were observed after 3 weeks of culture, which were subsequently passaged and propagated. Cell line was characterized using karyotyping, RT-PCR for various markers, immunocytochemistry & florescence insitu hybridization (FISH).

*Results:* We have established and characterized a BCa cell line from primary culture. Gene expression profiling has revealed negative expression of ER, PR and positive expression of Androgen receptor (AR) and HER-2/neu. Subsequent FISH analysis was negative for HER-2/neu amplification. Basal (cytokeratin 5, 14 & 19), luminal (cytokeratin 8 & 18) and myoepithelial markers (CD10, S100A7, p-cadherin, desmin, S100A4, S100A2 &  $\alpha$ -SMA) were expressed. This cell line exhibited low expression of E-cadherin and high expression of vimentin attributing it a mesenchymal phenotype. Karyotyping has shown modal number of chromosomes in the range of 70-94 & invasion assay has revealed this cell line to be non-invasive. *Conclusion:* We report a novel cell line model to understand AR signaling mechanisms which may provide additional therapeutic targets in BCa management.

*Keywords:* Metaplastic carcinoma, cell line, Breast cancer

### 8.15

#### EXTENDED ROLE OF HAEMATOLOGISTS IN LABORATORY PRACTICE – INTERPRETATION OF PERIPHERAL BLOOD FILMS SENT FOR HAEMOGLOBIN ELECTROPHORESIS

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*Objective:* Modern healthcare requires multidisciplinary approaches to patient centred management. One of the important contributions is made by the haematologist's approach of examining the peripheral blood film for complete blood counts. As a part of bringing continuous improvement in patient focused care, we also review peripheral blood films of patients who are referred for haemoglobin electrophoresis. The objective was to determine the frequency of diagnosing abnormalities other than haemoglobinopathy in samples sent for haemoglobin electrophoresis

*Method:* This was a retrospective study done at the Aga Khan University and Hospital from January 2011-August 2011. 5 ml EDTA venous blood samples sent during this period were included for complete blood counts, peripheral smear review and haemoglobin electrophoresis by HPLC. Frequency of results e.g. malaria, acute leukaemia, haematinic deficiency etc diagnosed on peripheral film were calculated

*Results:* A total of n=10844 samples were received. Out of these n=4164 were males and n=6680 were females. Diagnosis of malaria was made on n=104 samples while n=28 had acute leukaemia. Iron deficiency anaemia was seen in 31%. Other findings included B12/Folate deficiency (n=83), pancytopenia (n=46), enzymopathy (n=11) and autoimmune haemolytic anaemia (n=9).

*Conclusion:* Haematologist's review of peripheral smear is an essential component of proper patient care. This was also seen in our study as we diagnosed 34% abnormalities other than haemoglobinopathy by examining blood films prepared for haemoglobin electrophoresis.

*Keywords:* HPLC, malaria, acute leukemia

### 8.16

#### EXTENSIVE MARROW INFILTRATION IN EPIDURAL EWING'S SARCOMA

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*Objective:* Ewing's sarcoma is a malignant neoplasm of mesenchymal origin primarily arising in skeletal bones. Soft tissue is a very rare site where Ewing's sarcoma may arise. We here present two cases of primary extrasosseous Ewing's sarcoma (EES) involving epidural space.

*Method:* A 34 year old male presented with dyspnea, cough, vertigo and excruciating left leg pain since 3 months. MRI of pelvis revealed abnormal soft tissue masses within epidural spaces of L4-S1 vertebra. Mediastinal lymph node biopsy was consistent with Ewing's Sarcoma/Primitive Neuro-ectodermal Tumor. Staging bone marrow showed extensive marrow infiltration with clumped atypical mononuclear cells having basophilic vacuolated cytoplasm. Another case is of a 24 year old male who presented with complains of backache for three months. MRI imaging displayed fracture of 8th vertebra with a soft tissue mass having prevertebral and intraspinal components. Histopathology of laminectomy tissue showed Ewing's sarcoma. Staging bone marrow showed infiltration of tumour cells. *Results:* Ewing's sarcoma preferentially occurs in the medullary cavity of diaphysis of long bones. Only 141 primary spinal Ewing's sarcoma including 29 intramedullary lesions have been reported in medical literature till date. Most EES patients are between 10-30 years of age with the male predominance. The biological behavior and prognosis of EES are very similar to those of the skeletal examples. Tumors in both locations follow a rapid course with metastasis to lung and bone. *Conclusion:* A review of the literature indicates that EES is a rare tumor and particularly so in the epidural space which may metastasize to bone marrow.

*Keywords:* Extrasosseous Ewings sarcoma (EES), epidural space, bone marrow

**8.17****FREQUENCY OF COMPLETE CYTOGENETIC RESPONSE WITH NILOTINIB IN ADULTS WITH IMATINIB-RESISTANT PHILADELPHIA CHROMOSOME - POSITIVE CHRONIC MYELOID LEUKEMIA**

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*Objective:* Chronic myeloid leukemia constitutes 15% of adult leukaemias. In a follow up study (IRIS 7 Year Update) on patients who achieved complete cytogenetic response with Imatinib; 17% lost complete cytogenetic response, 3% progressed to AP/BC and 2% died from CML. To determine the frequency of complete cytogenetic response with Nilotinib therapy in adults with Imatinib resistant Ph-positive CML

*Method:* This study was conducted at The Aga Khan University Hospital, Karachi from September 2010 till December 2011. Eighty-four Imatinib resistant patients were started on Nilotinib at a dose of 400 mg twice daily. Before initiating therapy with Nilotinib, bone marrow cytogenetics or BCR-ABL translocation by FISH for the baseline evaluation of cytogenetic response was assessed on every patient. Subsequently, the cytogenetic response after completion of 6 months of therapy with Nilotinib was assessed

*Results:* The median age was  $39.4 \pm 12.3$  years and majority 63 (75%) were males. N=65 (77.5%) were in chronic phase while 16 (19%) and 4 (4.8%) were in accelerated and blast crises respectively. The median duration of treatment with imatinib was  $32.7 \pm 19.3$  months. N=81 patients fulfilled the inclusion criteria but cytogenetic response was analyzed after 6 months in n=41 patients. N=3 patients were loss to follow up and n=37 patients were unable to afford cytogenetics. The frequency of complete cytogenetic response in patients treated with Nilotinib is 46.3%

*Conclusion:* Frequency of complete cytogenetic response was approximately 46% in CML chronic phase. The response rates are higher in chronic phase as compared to accelerated phase. The response rate is better in our region compared to western countries

*Keywords:* Nilotinib, cytogenetic response, chronic myeloid leukemia

**8.18****HEMOLYSIS AND HEPATITIS**

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*Objective:* Viral hepatitis A is considered to be a self-limited disease without clinical sequel and rarely causes severe liver damage. Glucose-6-phosphate dehydrogenase (G6PD) deficiency is characterized with insufficiency of this enzyme in hepatocytes as well as in erythrocytes. This deficit may impede the repair of hepatocytes, damaged by viral hepatitis and may be associated with a more severe clinical presentation of hepatitis A.

*Method:* A 10 year old girl presented with drowsiness for 3 days

with associated fever, abdominal pain and dyspnea. She was febrile, jaundiced and arousable. Her hemoglobin was 8.7gm/dL, MCV 82.6fl, MCH 28.6pg, white cells 53.5X10<sup>9</sup>/L and platelets 266X10<sup>9</sup>/L. Blood film revealed polychromasia, nucleated red blood cells and numerous blister cells. Reticulocyte count was 25%, total bilirubin 45.8mg/dl with direct component of 22.5mg/dl, SGPT of 4329 IU/L, PT 15.8sec and serum creatinine 0.7mg/dl. The clinical diagnosis was hepatic encephalopathy while G6PD deficiency was suspected because of blister cells. Subsequent testing showed: reactive anti Hepatitis A IgM antibodies and G6PD enzyme of 0.5U/g Hb. Supportive care was initiated and she was discharged after a fortnight at bilirubin of 5.7mg/dl and hemoglobin of 10g/dl without any complications.

*Results:* Our patient had severe manifestation of hepatitis A because of G6PD deficiency while acute hemolysis was precipitated by infection. A handful of cases with interaction of fulminant hepatitis A and G6PD deficiency were described in literature.

*Conclusion:* The possible explanation was G6PD deficient hepatocytes with reduced glutathione were unable to withstand viral insult cumulating free radicals, delayed hepatocytes repair and a fulminant clinical course.

*Keywords:* hemolysis, G6PD, hepatic encephalopathy

**8.19****IDENTIFICATION OF MUTATION IN BCR-ABL KINASE DOMAIN OF CHRONIC MYELOID LEUKEMIA PATIENTS**

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*Objective:* In CML patients, fusion of BCR-ABL results in a chimeric gene, which codes for enzyme tyrosine kinase having deregulated activity. Tyrosine kinase inhibitors are beneficial for treatment of CML patients, but resistance can develop in 30%-50% patients due to mutation in kinase domain. Knowledge of mutation status is valuable information for physicians making therapeutic strategy.

*Method:* The complete ABL kinase domain of the BCR-ABL gene was analyzed using reverse transcriptase-polymerase chain reaction (RT-PCR) followed by direct sequencing using Dye Terminator Chemistry on Beckman Coulter genetic analysis system. The sequences obtained were analyzed by Mutation Surveyor Software v2.51 (Soft Genetics, USA).

*Results:* Blood samples from 11 CML patients who were resistant to imatinib therapy were included for sequencing analysis of ABL kinase domain. Out of 11 patients 10 were male. The mean age of patients was 52 years and it ranged between 28 and 97 years. Sequence analysis revealed following four mutations E355G, V379I, M351T, and E255K. On the other hand no mutation was detected in seven patients.

*Conclusion:* Our preliminary study shows presence of mutation in ABL kinase domain of CML patients. Large cohort studies are required to identify prevalence of common mutations and their association with imatinib resistance.

*Keywords:* BCR-ABL, CML, Mutations

## 8.20

### IMPLANTABLE PORT DEVICES IN PEDIATRIC ONCOLOGY PATIENTS: A CLINICAL EXPERIENCE FROM A TERTIARY CARE HOSPITAL

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**Objective:** To estimate the frequency of infection of Portacath retrospectively in children (=14 yrs) having malignant tumors and undergoing chemotherapy in our centre. To assess the association of Port infection with already known risk factors  
**Method:** A retrospective review conducted between Jan 2005 to Dec 2010 in Aga Khan University Hospital, Karachi. A questionnaire was designed to collect required data. A total of 67 children were included having portacath inserted for chemotherapy. We have excluded children in which portacath was inserted under local anesthesia in Radiology department, reinserted or inserted because of a reason other than childhood malignancy.

**Results:** Forty-six patients (67%) were males and majority of them 31 (46%) were between 6-10 year of age. 42 patients (63%) had leukemia, 7(11%) had lymphoma and 18(26%) had various solid tumors. 6 ports (8.95%) were removed due to infection. There is significant difference in infection and non infection groups, with respect to absolute neutrophilic count (ANC) levels ( $p$ -value < 0.001). ANC levels are significant at univariate and multivariable analysis. Positive association was found between low ANC level (=500) and occurrence of port infection.  
**Conclusion:** Port infection rate is higher in children with low ANC. We need to address this issue and may have to alter the timings of port insertion. To further evaluate the problem, we need to conduct a multicentre trial and change our port insertion criteria

**Keywords:** Portacath, malignant tumour, infection

## 8.21

### IN THE STORM: THE PSYCHOLOGICAL IMPACT OF STIGMA IN PEOPLE WITH CANCER

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**Objective:** Cancer is itself a word that corrodes an individual slowly and further believes to spoil one's identity and gradually brings psychological destruction in patients. We observed impacts of stigma related to cancer patients, its causes and psychological impact that are self-image, fear, emotional and psychological distress associated with cancer related stigma in both males and female cancer patients

**Method:** An integrative review of the literature done to examine the relationship among cancer associated stigma and its impact on cancer survivors

**Results:** (1) Stigma associated with cancer was higher in female than male. A patient with relapsed disease has more psychological impacts. And (3) patients with altered body image associated with cancer treatments has found to have more psychological issues.

**Conclusion:** Stigma creates psychological impacts on cancer patients. This may penetrate recovery of patient and hence can

lead to rising trends of stigma in other individuals. Patients should be encouraged to verbalize their feelings and to encourage having their normal activities to limit or decrease the negative impacts

**Keywords:** Cancer, stigma, psychological distress

## 8.22

### IS SUPPORTIVE CARE IS ALWAYS A SOFT OPTION FOR PATIENTS AND THEIR FAMILIES?

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**Objective:** Supportive care is a broad umbrella term focused to bring the improvement in the quality of life of cancer patients. The supportive care given to the cancer patients are expected not only to improve medical, psychological, personal comforts, mental relief, financial aspects of patients but of family too. The familial integration of supportive care should be focused equally as of cancer patients

**Method:** An integrative review of the literature examined the relationship among supportive care, quality of life of cancer patients and responses of family members toward the supportive care option. A supportive care professional development framework was used to organize literature for review  
**Results:** To date, the use of supportive care option for cancer patients were clear but the same supportive care option for family of cancer patients remain unclear.

**Conclusion:** Future research should investigate the interaction among supportive care, quality of life of cancer patients and responses of family members toward the supportive care option.

**Keywords:** Supportive care, family, patient

## 8.23

### MALIGNANT MEDIASTINAL MASS IN CHILDREN

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**Objective:** The aim of this study was to determine the clinical spectrum and management outcomes of these high risk patients in a developing country.

**Method:** We retrospectively reviewed the medical records of all cases of mediastinal masses in children diagnosed and treated over a 5-year period (2007-2011) at the AKUH, Karachi to determine the pattern of presentation, histopathological diagnosis, radiologic findings and management outcomes.  
**Results:** A total of 37 patients of mediastinal masses were identified, and malignancy were found in 32 (86%) cases. Most of these were hematologic cancers (n=31; 97%). The median age at diagnosis was 8.8 years. According to their origins, lymphoma (72%) was the most common diagnosis followed by T-cell leukemia (25%). Common tumors of anterior, middle and posterior location were leukemia, lymphoma and neuroblastoma, respectively. Eight (25%) patients were asymptomatic. Nonspecific symptoms such as fever (81%), cough (47%) and

dyspnea (37%) constituted the most commonly presenting complaints. Lymphadenopathy (69%), visceromegaly (44%), airway compression or deviation (59%), superior vena caval compression (19%), pleural effusion (53%) and pericardial effusion (22%) were the clinical and radiological findings. All patients received chemo reduction (i.e. steroids) with or without surgical interventions. Twenty two patients underwent surgical procedures (complete/partial resection of mass), local lymph node biopsy was performed in 5 cases and CT or ultrasound-guided biopsy was done in 2 patients. Twenty seven (84%) patients were admitted in PICU for supportive care and assisted ventilation was required in 20 (63%) patients. The mean length of hospital stay was 9.3 + 6 days. None of our patients died due to complications related to mediastinal mass or diagnostic procedure.

**Conclusion:** Although mortality was reduced significantly with refinements in the management protocols, a high index of suspicion and comprehensive multidisciplinary approach is crucial to improve the morbidity.

**Keywords:** Mediastinal mass, lymphoma, leukemia

#### 8.24

##### MECP2 SILENCING IN HIGH GRADE BLADDER CANCER DERIVED HTB-5 CELL LINE AFFECTS PROMOTER METHYLATION IN TUMOR SUPPRESSOR GENES, AND THEIR PHENOTYPE

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**Objective:** DNA methylation patterns are altered in different human neoplasms and include genome-wide hypomethylation and focal gain in DNA methylation. It is now a well-established fact that promoter hypermethylation negatively regulates gene expression but the role played by different methyl binding proteins remains to be eluded

**Method:** The HTB-5 cell line was obtained from ATCC and was maintained in Eagle's minimum essential medium. Cells were transfected with a mock plasmid and psiMeCP2. Phenotypic assays were employed to assess any difference between the proliferation, invasion and migration abilities in the control and MeCP2 silenced cells. Tumor suppressor genes promoter methylation array was done to determine any effect on promoter methylation due to gene silencing

**Results:** MeCP2 silencing resulted in reduced cell proliferation, migration and invasion when compared to the control cells. Furthermore, the degree of promoter hypermethylation in nine out of twenty four genes tested was lower in MeCP2 silenced cells.

**Conclusion:** The results of our study suggest that MeCP2 protein appears to be involved in cellular processes and its silencing affects the promoter methylation status of a distinct set of tumor suppressor genes in the HTB-5 cell line

**Keywords:** DNA methylation, Tumor suppressor gene, Methyl binding protein

#### 8.25

##### METAPLASTIC CARCINOMA OF THE BREAST. A CLINICOPATHOLOGIC AND HORMONE RECEPTOR

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**Objective:** Metaplastic Breast Carcinoma is a distinct and rare type of cancer accounting for less than 1% of invasive breast tumors. The metaplasia is in the form of epithelial or mesenchymal cell population. These tumors are usually classified as matrix producing carcinomas, spindle cell carcinomas and squamous cell carcinomas. The intermixed nonepithelial elements vary a lot including spindle cells, bone, cartilage, myxoid stroma, and anaplastic stroma with giant cells. Osseous metaplasia and anaplastic stroma with giant cells are exceptionally rare components in metaplastic breast carcinoma. The determination of pathogenesis and clinicopathological features has been quite difficult owing to its rarity. When compared with typical breast carcinoma, metaplastic carcinomas have a worse disease-free survival, and a significantly decreased overall survival. **Objective:** To determine the clinicopathological characteristics including hormone receptor status of metaplastic breast carcinomas **Method:** All diagnosed cases, including mastectomies, lumpectomies, trucut and wedge biopsies of Metaplastic breast carcinoma from August 2005 to July 2012, at Aga Khan University Hospital were included

**Results:** Total 112 cases were retrieved. Mean age + SD was 49.43 + 13.04 years. Mean tumor size was calculated to be 5.70 + 2.95 cm (n=75). Squamoid differentiation was most common, seen in 89 cases (Fig. 1), followed by Spindle cell metaplasia accounting to 23 cases (Fig. 2), mostly with squamoid differentiation. Chondroid metaplasia was seen in 9 cases, with one case having osseous differentiation as well (Fig. 3 & 4). All cases of chondroid metaplasia also exhibited squamoid differentiation. Among immunohistochemical stains, CK 5/6 was most commonly used for squamoid differentiation, vimentin and cytokeratin AE1/AE3 for spindle cell variant and S-100 for chondroid metaplasia. ER status was positive in 19 (39.5%) and negative in 29 (60.4%) (n=48). PR status was positive in 17 (36.9%) and negative in 29 (63%) (n=46). Her2/neu status was positive in 20 (57.14%) with only 2 cases showing strong 3+ positivity

**Conclusion:** Metaplastic breast carcinoma is a rare and intriguing entity and its clinicopathologic features are still to be well established. Majority of the cases are ER and PR negative so conventional hormone therapy therefore does not prove to be very beneficial and better treatment options are needed

**Keywords:** Metaplastic, breast carcinoma, hormone receptors

### 8.26

#### MONITORING TRANSFUSION HAZARDS AS A QUALITY INDICATOR OF BLOOD UTILIZATION COMMITTEE

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**Objective:** Blood transfusion is an essential and life-saving therapeutic option. However, blood transfusion had never been absolutely safe and has been associated with significant risks. Timely reporting of a transfusion reaction is of utmost significance to ensure its prevention in future. The major risks of blood transfusion are transmission of infections and acute hemolytic transfusion reactions which may become fatal. Recently, the risk of transmission of infectious agents by transfusion was minimized by improvements in donor screening and infectious disease testing. The objective of this study was to observe the frequency of reported blood transfusion reactions in the hospital and root cause analysis of any wrong blood transfusion.

**Method:** Study was conducted during January 2011 to September 2012. The transfusion reactions were reported by the nurses and doctors monitoring patients during transfusions. Each reported transfusion reaction was thoroughly worked up in the blood bank while hematology resident verifies the information from medical chart. The final opinion regarding the nature of transfusion reaction was made by attending. The system revolves around identification, reporting, investigation and analysis of serious hazards of transfusion (near miss events and transfusion reactions). Corrective and preventive measures were taken from time to time at our institution to minimize wrong transfusions. Besides, a wrong transfusion is considered as a sentinel event and root cause analysis is not only done but reported to and discussed with the hospital medical director. Gaps identified are bridged through reinforcement of existing guidelines and in-service training under the supervision of Blood utilization committee (BUC). The outcome measures included frequency of transfusion reaction.

**Results:** During the study period, 104876 blood units were transfused. 125 reactions were reported with a computed frequency of 1.18 reactions per 1000 blood units transfused. Only one ABO mismatched blood transfusion was observed with a calculated frequency of 0.009/1000 blood products. Most frequent reactions included allergic reactions [n=66 or 52.8%] and febrile non hemolytic transfusion reaction [n= 37 or 29.6%]. Other reactions included TRALI, TACO and TAD. The root cause analysis of wrong blood transfusion showed several gaps in blood sampling including wrong addressograph.

**Conclusion:** Main transfusion reactions included febrile and allergic reactions. Other hazards being less frequent in our institute.

**Keywords:** Blood transfusion, hazards, transfusion reaction

### 8.27

#### MORPHOLOGICAL PATTERN AND FREQUENCY OF INTRACRANIAL TUMORS IN CHILDREN

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**Objective:** To determine the age, sex, location, and histologic diagnosis of intracranial tumors in children less than 17 years of age.

**Method:** A retrospective study of 75 children who were admitted in the pediatric ward of The Aga Khan University Hospital, Karachi between 2007 and 2011 was performed. Charts were reviewed to extract information about demographics, location, and histopathological diagnosis of tumors. The frequency distribution of brain tumors by age and sex, location, and histopathology was calculated.

**Results:** According to the gender, 52% (39 cases) of the tumors occurred in males and 48% (36 cases) in females. Of all the tumors, 42% (32 cases) were situated in the supratentorial compartment and 58% (43 cases) in the infratentorial compartment. The mixed five most common histological diagnosis in patients were astrocytoma (33.3%), followed by medulloblastoma (18.7%), brainstem glioma (14.7%), Ependymoma (10.7%), oligodendroglioma (10.7%) and primitive neuroectodermal tumor (PNET) (9.3%). The cases were divided into three age groups (1st group contained patients less than 5 years of age, 2nd group contained 5-10 years old and 3rd contained more than 10 years old ones). The greatest number of cases was in the 2nd age group (34 cases, 45.3%), followed by the 3rd age group (24 cases, 32%) and then 1st age group (17 cases, 22.7%). The mean age was 6 years.

**Conclusion:** Males were slightly more affected than females. A significant male predominance was observed in medulloblastoma. The current study is a single institution study and needs cautious interpretation. Population-based studies are required to determine the cancer burden due to pediatric malignancies of the brain in this population and for the morphological categorization of brain tumors in Karachi.

**Keywords:** Intracranial tumors, demographics, cancer burden

### 8.28

#### NOTTINGHAM PROGNOSTIC INDEX IN BREAST CANCER IN YOUNG WESTERN WOMEN VERSUS PAKISTANI WOMEN

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**Objective:** Breast cancer is considered as aggressive disease with less favorable outcome in developing countries. Late diagnosis may be a main factor, but different biology of disease is another possibility. The Nottingham prognostic index (NPI) is a widely

used clinico-pathological staging system for breast cancer prognostication. We conducted this study to test the hypothesis breast cancer in Pakistani women is more aggressive than in UK.

**Method:** We conducted a collaborative study between Civil Hospital Karachi, Pakistan and University Hospital of North Tees, United Kingdom(UK) from 2009-2010. Patients under 50 years were included, histopathology reports were reviewed to collect data including tumor details and ER/PR/Her2 status. Statistical analysis performed using SPSS:16.

**Results:**Total of 54 patients under 50 years from Pakistan and 43 from UK were diagnosed. A statistically significant difference (p-value < 0.0001) was found in two groups,Pakistani patients 4 years younger (median age 40 years) than UK ( 44 years). The mean tumour size in Pakistani series was 56mm (15-100mm) compared with 37 mm (5-125mm) from UK. Tumours in patients from Pakistan were more likely to be ER negative and lymph node positive than those in UK (p-value <0.05). Interestingly in Pakistan 89% tumours were grade I/II compared to 72% grade III tumours in UK. Overall 40% of breast cancer from Pakistan were in worst Nottingham prognostic index group compared to 23% from UK.

**Conclusion:**Breast cancer in Pakistani women is more aggressive with worse NPI compared to women in UK. The factors influencing this, could be younger age and biologically different disease.

**Keywords:** Breast cancer, young women, Nottingham Prognostic Index(NPI)

### 8.29

#### OUTCOME OF AUTOLOGOUS STEM CELL TRANSPLANTATION IN PATIENTS WITH HAEMATOLOGICAL MALIGNANCIES

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**Objective:** Intensive chemotherapy followed by autologous stem cell transplant is the treatment of choice for patients with haematological malignancies. The objective of this study was to evaluate the outcome of patients with suffering from lymphoma, Ewing's sarcoma and multiple myeloma after autologous stem cell transplant.

**Method:** Pre-transplant workup consisted of complete blood count, evaluation of liver, kidney, lung, infectious profile, chest, paranasal sinus roentgenograms and dental review. For lymphoma, all patients who achieved 25% - 50% reduction in the disease after salvage therapy were included in the study. Mobilization was done with Cyclophosphamide followed by G-CSF 300µg twice daily. The conditioning regimens included Carmustine, Etoposide, Cytarabine and Melphalan.  
**Results:**A total of n=153 transplants were done from April 2004 – December 2011. Out of these n=102 were Allogeneic transplants and n=51 were autologous. For autologous transplants, n= 39 were males and n=12 were females. Twenty one patients underwent transplants for Hodgkin's lymphoma. In the non-Hodgkin's group, there were n=17 patients. We transplanted n=8 and n=4 patients with multiple myeloma and Ewing's

sarcoma respectively. Median age ± SD was 32 years ±13.4 (range: 4-55 years). A mean of  $4.7 \times 10^8 \pm 1.7$  mononuclear cells/kg were infused (range: 2.2-10x10<sup>8</sup>/kg). The median time to WBC recovery was 17.3 days (range: 12-32 days). Transplant related mortality was present in n=6 patients. After a median follow up of 32.3 months n=12 (34.2%) were alive.  
**Conclusion:**High dose chemotherapy followed by autologous stem cell transplant is an effective treatment option in patients with haematological malignancies, allowing further consolidation of response.

**Keywords:** Autologous transplants, outcome, haematological malignancies

### 8.30

#### PROBING THE METHYLATION STATUS OF DIFFERENT TUMOR SUPPRESSOR GENES IN BLADDER CANCER PATIENTS OF PAKISTANI ORIGIN

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**Objective:**Bladder cancer is the second most common urological malignancy in men, with a high recurrence rate in superficial disease and a bad prognosis associated with the muscle invasive cancer at initial diagnosis. Promoter methylation induced silencing of tumor suppressor genes has been implicated for various genes in bladder cancer. We analyzed the promoter methylation in a panel of tumor suppressor genes involved in apoptosis, DNA repair, cell cycle control and progression in non-invasive and invasive bladder cancer.

**Method:** Promoter hypermethylation was investigated in RASSF1a, APC, MGMT, p16 and p15 in 43 non-invasive & low grade, 33 invasive & high grade bladder cancer and 10 cases with normal bladder mucosa/benign urologic disease using real time methylation specific pcr with SYBR green. In addition to the 86 tissue samples methylation analysis was also done in 16 plasma samples from patients with invasive high grade bladder cancer

**Results:**Promoter hypermethylation was frequently observed in RASSF1a, APC and MGMT genes (p-value<0.001) and was predominant in the invasive high grade bladder cancer when compared to the non-invasive low grade group (p-value<0.001) and normal bladder mucosa p-value=0.04(RASSF1a), 0.000(APC), 0.003(MGMT). When the results of 16 plasma samples were compared to the corresponding tissue samples only APC (p=0.006) and p16 (p=0.011) showed significant results in paired-T test.

**Conclusion:**The results suggest that promoter methylation analysis can serve as a valuable tool for monitoring the progression and assessing the spread of bladder cancer. Although the data on plasma samples is preliminary but it has opened new avenues for future research with more genes on larger number of samples

**Keywords:** Bladder cancer, tumor suppressor genes, DNA methylation



### 8.31 PROGNOSTIC IMPLICATION OF LYMPHOVASCULAR INVASION IN TRIPLE NEGATIVE EARLY BREAST CANCER

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**Objective:** Triple negative breast cancer (TNBC) accounts for 10 to 20% of all breast carcinomas in Asian and Western populations. Triple negativity is associated with aggressive histology, poor prognosis, and unresponsiveness to the usual endocrine therapies and HER2/neu targeted therapy. In several reports, triple-negative carcinomas show a specific pattern of distant metastasis with high ratio of visceral metastases such as to the brain and lung. Lymphovascular invasion (LVI) is considered to be present when tumor cells are detected in an endothelial cell – lined channel in the periphery of the invasive carcinoma. Recently, vascular invasion was included as a new risk factor for patients who have undergone surgery for breast cancer at the St Gallen consensus meeting, and the presence of peritumoral vascular invasion may be a predictor of postoperative prognosis. To date, the presence of lymphovascular invasion has not been included in decision-making tools provided to assist clinicians in selecting breast cancer patients who should be treated with adjuvant therapies. Primary objective is to assess the prognostic role of lymphovascular invasion in triple negative breast cancer in term of locoregional recurrence. Secondary objective is to determine the disease free survival (DFS) and overall survival (OS)

**Method:** This retrospective cohort study was conducted at Breast and General Surgery Unit, Aga Khan University Hospital (AKUH). Prospectively collected data of nearly 90 triple negative early breast cancer patients was reviewed between 2004-2011, data was extracted from individual clinical files and Histology reports or slides review. Patients with T4 breast cancer, received neoadjuvant chemotherapy, bilateral disease, and any personal history of cancer including *in situ* breast cancer were excluded from the study. For histologically confirmed triple negative breast cancer cohort, formalin fixed paraffin embedded samples will be reviewed by the histopathologist to confirm the lymphovascular invasion by hematoxylin and eosin staining. Lymphovascular invasion will consider to be present when tumor cells will detect in an endothelial cell – lined channel in the periphery of the invasive carcinoma. Record files also reviewed for follow up data. Association between LVI and clinicopathological data was derived. multivariate analysis was done using the patients age, tumor size, tumor grade and LVI.

**Results:** Total 1,120 patients were registered with breast cancer in AKUH between 2004-2011. 122(11%) patients had triple negative breast cancer from which 74 patients fulfilled the eligibility criteria for the study. Our study population contained 64% node negative early breast cancer and 35% had node positive disease. Twelve (16.2%) patients had LVI positive disease while 62 (83.8%) had no lymphovascular invasion. The mean age in our study was 51 years and mean follow up was 3.5 years

**Conclusion:** Pattern of LVI in our study is comparable to other international studies. Lymphovascular invasion is one of the

factor that dictate the prognosis in Triple negative advance breast cancer but it is not an independent prognostic factor in early breast cancer--

**Keywords:** Triple negative, early breast cancer, lymphovascular invasion

### 8.32 RISK FACTORS FOR COMPLICATED-VARICELLA INFECTION IN PEDIATRIC ONCOLOGY PATIENTS AT A TERTIARY HEALTH CARE FACILITY IN PAKISTAN

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**Background:** Varicella zoster infection (VZI) is well recognized as a potential cause of morbidity and mortality in immunocompromised oncology patients. The purpose of this study was to describe the clinical profile risk factors for complications and outcome of varicella in pediatric oncology patients treated with acyclovir.

**Method:** Medical records of all pediatric oncology patients with discharge diagnosis of VZI over a period of 7 years (2005-2011) were retrieved and reviewed by using hospital information management system. The demographic features, underlying malignancy, risk factors for varicella infection, complications and outcomes were recorded.

**Results:** During the 7 year period, 36 pediatric oncology patients with VZI were identified, 2 secondary cases were excluded. Leukemia was the most common underlying malignancy (n=20, 58.8%), followed by lymphoma (n=7, 20.6%) and solid organ tumors (n=7, 20.6%). Most (41%) cases were observed in children under 5 years of age. All patients were treated with acyclovir. Varicella-related complications developed in 10 (29%) patients. Most frequent complication was bloodstream infection (n=3, 8.8%), followed by pneumonia (n=2, 5.9%), skin infection (n=2, 5.9%), hepatitis, renal failure and encephalitis. Identified risk factors associated with development of complications were age <5 years, weight for age < 5th percentile, delay in seeking care (> 7 days after onset of symptoms) and severe neutropenia (ANC < 500/cm). One child died secondary to varicella encephalitis

**Conclusion:** This study describes risk factors for complications of varicella in pediatric oncology patients. Although antiviral treatment has improved the outcomes, but vaccination against varicella is the key to prevention of the disease especially for all household contacts of immunocompromised children and caregivers who have negative history of varicella infection or shingles.

**Keywords:** Varicella, oncology, complications

**8.33****SINONASAL TERATOCARCINOSARCOMA: A CLINICOPATHOLOGICAL AND IMMUNOHISTOCHEMICAL STUDY OF SIX CASES**

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**Objective:** Teratocarcinoma (TCS) is a rare and unusual malignant neoplasm of the sinonasal tract with a heterogeneous morphology and an aggressive behavior. Patients are exclusively adults with a male predominance. The aim of this study was to describe clinicopathologic and immunohistochemical features of six cases of TCS.

**Case Report:** The ages ranged from 18 to 67 years (mean 33 years) with a male to female ratio of 5:1. Most tumors were located in the nasal cavity. Nasal obstruction and epistaxis were the common presenting symptoms. Histologically, all tumors exhibited a heterogeneous morphology with varying proportions of benign and malignant epithelial, mesenchymal and neuroepithelial elements. Adenocarcinoma was the malignant epithelial component in all cases. The mesenchymal elements were comprised of benign to malignant spindle cells. Osteosarcomatous areas were seen in two cases and rhabdomyosarcoma in one case. Rhabdoid differentiation was also seen in one case. Immunohistochemical stains CKAE1/AE3 and CK Cam 5.2 were positive in the epithelial elements, vimentin in mesenchymal and CD56 and NSE were positive in neuroepithelial elements. Follow up was available in 4 patients and ranged from 21 to 41 months (mean 31 months). Lung and dura metastasis were seen in two patients. However all four patients are alive and free of disease to date. In conclusion, TCS is a rare but highly malignant tumor with aggressive behavior characterized by benign and malignant epithelial, mesenchymal and neuroepithelial components. Two patients in our series were younger than 20 years. The occurrence of rhabdoid differentiation and osteosarcomatous component seen in our series were rarely described in literature.

**Conclusion:** To summarize TCS is a rare but highly malignant tumor with aggressive behavior. It is characterized by benign and malignant epithelial, mesenchymal and neuroepithelial components. For correct diagnosis adequate sampling and experience with the entity is required. Recognition of all the components is crucial. The occurrence of rhabdoid differentiation and osteosarcomatous component seen in our series were rarely described in literature. Complete surgical removal and postoperative adjuvant chemo and radiotherapy seem to be the treatment of choice for patients with TCS.

**Keywords:** Nasal cavity, teratocarcinoma, sinonasal

**8.34****SPERMATOCYTIC SEMINOMA; A RARE TESTICULAR GERM CELL NEOPLASM: ROLE OF HISTOLOGY, SPECIAL AND IMMUNOHISTOCHEMICAL STAINS IN DIAGNOSIS.**

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**Objective:** Spermatocytic seminoma is a rare testicular germ cell tumor of older men. Accounting for 1-4% of all seminomas, spermatocytic seminomas have distinct pathogenesis, histological features, immunohistochemical profile, genetic features and clinical behavior which distinguishes them from other germ cell tumors, especially classic seminoma. In few cases, histology of these tumors mimics with classic seminomas and immunohistochemical markers including PLAP and CD 117 are routinely employed to confirm the diagnosis. **Objective:** To evaluate the utility of CD 117 immunostain along with other immunohistochemical stains and histological features in distinguishing Spermatocytic seminomas from classic seminomas. **Method:** All seminomas (spermatocytic and classic) diagnosed during 1993 to 2012 at Section of Histopathology, Department of Pathology & Microbiology.

**Results:** Total 15 cases of Spermatocytic seminomas were reviewed including 03 case received for second opinion. The median age at presentation was 66 years and average tumor size was 9.9 cms. Capsule (Tunica vaginalis) was breached in 02 cases. Microscopically, all of the cases showed presence of edema and absence of lymphocytic infiltrate. While Intratubular germ cell neoplasia (IGCN) was seen only in one case. PAS special stain was positive in 01 out of 12 cases. Placental alkaline phosphatase (PLAP) immunostain was positive in 09 out of 12 cases. CD 117 was positive in all 05 cases. LCA was negative in all 12 cases (n=12). CD 30 and Cytokeratins were negative in all 04 and 05 cases respectively (n=4 and n=5). **Conclusion:** CD 117 is of limited utility in differentiating the spermatocytic seminoma from classic seminoma as it is expressed in significant number of spermatocytic seminomas. However, apart from clinical behavior and histological features, Periodic Acid Schiff special stain and PLAP immunostain are quite helpful in distinguishing these two entities

**Keywords:** Spermatocytic seminoma, seminoma, testicular tumors

### 8.35

#### SPLENECTOMY FOR IDIOPATHIC THROMBOCYTOPENIC PURPURA IN ADULTS: A JOURNEY OF TEN YEARS AT A TERTIARY CARE HOSPITAL

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**Objective:** To determine the outcome of open and laparoscopic splenectomy done in adult patients of ITP over a period of 10 years and, secondarily, to determine the predictors of complete response to therapy.

**Method:** This is a retrospective review of adult patients (i.e. age more than 14 years) who underwent open or laparoscopic splenectomy for ITP at our institute in ten years (from January 2000 to December 2010). The files were reviewed in January 2011 by a surgical resident. Outcome was the response to splenectomy for ITP as per new definition of response set by American Society of Hematology 2011 evidence based practice guidelines for ITP. Assessment of response was done within 1 to 2 months of splenectomy and after withholding concomitant treatment.

**Results:** Twenty seven patients operated for ITP were found eligible. Of these, two (7.4%) were males and 25 were females (92.6%) with a mean age at the time of splenectomy were 30.8 years (range: 15 years to 55 years). Out of 27 cases, 23 patients underwent open splenectomy, three laparoscopic and one had laparoscopic converted to open splenectomy. Complete response was achieved in 20 patients (74.1%), whereas rest were found to have response (n=5) or no response (n=2). None of the predictors of response to splenectomy were found significant.

**Conclusion:** Splenectomy remains the single best treatment of choice in adult ITP patients who are refractory to medical therapy as seen by the response in our study. Minimally invasive procedures like laparoscopic splenectomy should be encouraged here.

**Keywords:** Splenectomy, Idiopathic Thrombocytopenic Purpura, Response

### 8.36

#### SPORADIC EARLY ONSET COLORECTAL CANCER: CLINICAL AND MOLECULAR CHARACTERISTICS

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**Objective:** Colorectal cancer (CRC) is one of the most commonly diagnosed cancers worldwide. Recently, a peak increase in incidence has been noted in economically transitioning countries. 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. Given the alarming increased incidence of early onset CRC patients in Pakistan, we seek to study the clinical and molecular characteristics of sporadic, early onset colon cancer in Pakistan.

**Method:** 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. A panel of five markers is being used to determine microsatellite instability (MSI) status through PCR and sequencing. Additionally, clinical data is being collated through retrospective chart review of the selected cases and control using a predesigned, coded tool.  
**Results:** From 2006-2011, we have identified 183 patients with early onset and 1137 patients with typical onset CRC patients. Till date, we have selected 121 early onset CRC patients with adequate tumor tissue for molecular analysis and clinical data. DNA isolation and PCR optimization of MSI markers and clinical analysis is in progress.

**Conclusion:** Upon completion, this study will yield useful information regarding the MSI status and clinical characteristics of sporadic early onset colon cancer in Pakistan.

**Keywords:** Colorectal cancer, Microsatellite instability, polymerase chain reaction

### 8.37

#### T(1;14) AND TRISOMY 4 - A NOVEL KARYOTYPE IN PATIENT WITH ACUTE MYELOID LEUKEMIA AND CONCOMITANT T CELL ACUTE LYMPHOBLASTIC LYMPHOMA

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**Objective:** Cytogenetic abnormalities have long been recognized as the genetic basis of the occurrence of various malignancies. Specific cytogenetic abnormalities have shown to occur recurrently in particular subtypes of leukemias and lymphomas. t(1;14) is an infrequently occurring recurrent chromosomal translocation that has been described in the past to be associated with hematological malignancies. Various breakpoints have been documented in literature. Trisomy 4 is another rare genetic abnormality. It has also been reported in association with both acute myeloid and lymphoid leukemias. The concomitant occurrence of a myeloid malignancy in association with a lymphoproliferative disorder is a distinctly unusual phenomenon  
**Results:** A 27 year old lady presented to us from an outside hospital with the history of generalized lymphadenopathy (cervical, occipital, axillary and inguinal) for 3 months. Her routine baseline laboratory parameters at presentation, demonstrated normochromic anemia with anisocytosis and poikilocytosis. Her hemoglobin was 11.9 gm/dl and she had leukocytosis with 95% blast cells on peripheral film. An excisional lymph node biopsy was performed and was consistent with a diagnosis of precursor T cell lymphoblastic Lymphoma/Leukemia. A bone marrow biopsy revealed results consistent

with AML however. A cytogenetic analysis of the bone marrow showed a complex karyotype -- 47,XX,t(1;14)(p34.1;q24),+4[12]/46,XX,t(1;14)(p34.1;q24)[3]/46,XX[10] (25 cells were counted -- 12 harboring 47 chromosomes and 13 showing 46 chromosomes). BCR/ABL was negative by fluorescent in situ hybridization (FISH). It was then decided to treat her as AML and she was started on induction therapy. She responded very well to treatment with a quick resolution of the palpable adenopathy and clearance of blasts from peripheral blood by day 8 of her induction therapy. On day 12 she began complaining of pleuritic chest pain, hemoptysis and fever. A chest X-Ray showed left sided lower zone infiltrates. Respiratory distress and hemodynamic compromise worsened over the next 12 hours and she had to be supported by mechanical ventilation. She was diagnosed with septic shock secondary to acinetobacter species resulting from bilateral pneumonia. She progressively deteriorated over the next 3 days and died on day 16 of induction chemotherapy.

**Conclusion:** Trisomy 4 is also a rare genetic abnormality. It can be seen in both acute myeloid [10] and lymphoid leukemias [11]. In AML, it does not appear to have any prognostic significance unless it is also associated with kit mutations but appears to be a good prognostic marker in ALL [12]. t(1;14), either as a sole abnormality or with another genetic mutation, has never been shown to be associated with a concomitant myeloid and lymphoid malignancy in literature. We believe that the patient described here is the first such case. Secondly, although the translocation t(1;14) has been described in association with hematologic malignancies in the past, the breakpoints described in literature are different from the novel t(1;14) breakpoints of our patient. Our patient was found to have a t(1;14) along with trisomy 4 and we believe that this is the first reported case of such a karyotype.

**Keywords:** Recurrent chromosomal translocations,t(1;14), trisomy 4

### 8.38

#### THE OUTCOME OF PATIENTS WITH PREGNANCY ASSOCIATED BREAST CANCER: RETROSPECTIVE REVIEW

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**Objective:** Pregnancy associated breast cancer (PABC) has been defined as breast cancer diagnosed during pregnancy or within one year of delivery. It is believed that pregnancy itself is a poor prognostic factor that affects survival as compared to non pregnant women

**Method:** A retrospective case-control study was conducted among patients treated at Aga Khan University Hospital from 1988-2011 to compare the 5-year survival outcome for PABC with women treated for breast cancer who were not pregnant. Total 156 patients were selected. 52 was pregnant and 104 were non pregnant (control). Overall survival (OS) and disease-free survival (DFS) were estimated by the Kaplan-Meier method, and log rank tests were used to assess the associations between

OS, DFS, pregnancy status, HER-2 status, ER/PR status, nodal status & LVI.

**Results:** After adjusting for age and stage, there are more Stage III patients in the pregnant group than non pregnant group (40% vs. 15%). PABC patients had higher risk of both death (p = 0.01) and distant recurrence compared with non pregnant controls. Women with PABC had significantly shorter OS (82.7% vs. 91.3%) and DFS compared with non pregnant age and stage-matched controls

**Conclusion:** pregnancy associated breast cancer is different entity independently associated with poor survival and outcome .

**Keywords:** Pregnancy, breast cancer

### 8.39

#### HAEMOVIGILANCE IN TRANSFUSION MEDICINE AT A TERTIARY CARE HOSPITAL

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**Objective:** To evaluate the contribution of haemovigilance system in blood safety at Aga Khan University Hospital in transfusion reactions; to identify the existing gaps and to build strategies and plans to address these gaps

**Methods:** A retrospective review of all reported transfusion reactions, the data collected (adverse reactions, errors, and near miss errors) during last two years period (2010- 2011) was done .All reactions reported to the Blood Bank were clinically evaluated and reviewed by the Blood Bank physician.

**Results:** In total, 140/79252 reactions were reported during the study period. Out of these 127 (90.7 %) were allergic reactions [n=80(57%)], febrile transfusion reactions were [n=43(30.7%)], non-specific reactions [n=2(1.4%)], bacterial contamination [n=1(0.7%)], and circulatory overload [n=1(0.7%)]. Hemolytic reaction due to erroneous administration was noted as having an overall frequency as 3(2.1%). Half of these events occurred outside the blood bank. Isolated blood bank errors including testing of the wrong specimen, transcription errors, and issuance of wrong unit were 10%. Many events involved multiple errors and the most common was failure to detect at the bedside that an incorrect unit had been issued. However, 10 (7.1 %) reactions were not evaluated due to incomplete data.

**Conclusion:** Availability of haemovigilance data has given transfusion services a clear understanding of problems associated with transfusion that need to be solved. Although our country have made considerable progress in enhancing blood safety in the recent past, nationally coordinated haemovigilance systems are lacking and haemovigilance systems should be established in enhancing blood safety in the region.

**Keywords:** Haemovigilance, transfusion, adverse reactions, errors, near miss errors

#### 8.41 FREQUENCY OF RED CELL ANTIBODIES DURING PREGNANCY

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**Objective:** To determine the frequency of various red cell antibodies and observe the outcomes during pregnancy  
**Methods:** We retrospectively analyzed data from January 2006 to December 2008 for red cell antibodies during pregnancy. Outpatients and cases with incomplete information were excluded. Parameters studied included age, parity, history of transfusion, type of antibodies, viability of fetus, anemia, jaundice, phototherapy and exchange transfusion in babies.  
**Results:** During the study period, 80 women were analyzed with positive red cell antibodies screening. Their age ranged from 20-38 years. There were 26 primigravidas and 54 multigravidas. 35 patients were D-negative and 45 patients were D-positive. History of transfusion was present in 13, while anti-D immunoglobulin was received by 6 women in previous pregnancy. The antibodies identified were D, C, E, Kell, M and Cw. There were 76 live births, 1 still birth and neonatal death reported while jaundice was present in 27 babies. Phototherapy was required in 24 and exchange transfusion in 4 babies. Age at jaundice was  $2\pm 0.73$  days.

**Conclusion:** Red cell antibody screening in pregnant women showed a variety of red cell antibodies that was not confined to D-negative pregnant women. Jaundice was a frequent manifestation in neonates.

**Keywords:** Red cell antibodies, pregnancy

#### 8.42 IMPACT OF BLOODSTREAM AND CENTRAL LINE ISOLATES FROM 97 HAEMATOPOIETIC STEM CELL TRANSPLANT RECIPIENTS – 2004 TILL 2011

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**Objectives:** The objective of this study was to determine the frequency and outcome of bacterial and fungal isolates from patients undergoing allogeneic haematopoietic stem cell transplant.

**Methods:** This study was conducted at the Aga Khan University & Hospital's bone marrow transplant unit. All patients who underwent an allogeneic stem cell transplant with matched sibling/parent donor were included. Study period ranged from April 2004 – September 2011. Transplantation was performed according to institutional protocols. All patients were admitted in single rooms with positive pressure and HEPA filters. Ciprofloxacin, Fluconazole and Valaciclovir were used for standard prophylaxis which was started at the time of

conditioning. All blood cultures were obtained at clinical suspicion of systemic infection mainly documented as fever (temperature of  $>38.5^{\circ}\text{C}$ ). Blood stream and line infections were defined as isolation of bacterial or fungal pathogen from at least one blood/central line culture.

**Results:** N=92/97 patients developed febrile neutropenia. There were n=229 documented febrile episodes in 92 patients. Culture positive episodes were n=35 while culture negative episodes were n=194. Of these n=35 culture positive episodes, n=17 patients had bloodstream isolates and n=18 had central line isolates. The mean $\pm$ SD day of febrile episodes was  $4.8\pm 2.0$  (range: 3.1-8.3). The most common blood stream isolate was E coli (n=7) followed by staphylococcus epidermidis (n=3). One patient developed Fusarium infection. In central line infections, staphylococcus epidermidis was the most common organism (n=11). In one patient with central venous catheter, Candida albicans was the isolate. Transplant related mortality due to sepsis was seen in 9%.

**Conclusion:** E coli were mainly responsible for blood stream infections while gram positive organisms dominated catheter related febrile episodes. Transplant related mortality due to sepsis was 9%.

**Keywords:** Stem cell transplant, infections, E.Coli

#### 8.43 DETECTION OF HEMOGLOBIN E (B26, GAG-AAG, GLU- LYS) THROUGH RFLP-PCR

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**Objective:** Hemoglobin E (HbE) is variant hemoglobin with a mutation in  $\beta$  globin gene causing substitution of glutamic acid for lysine at position 26 of  $\beta$  globin chain. Hb E is common in South East Asia. It results in a heterogeneous group of disorders whose phenotype ranges from asymptomatic to severe. Our objective was to determine the frequency of HbE mutation using restriction fragment length polymorphism-polymerase chain reaction (RFLP-PCR).

**Methods:** The study was conducted prospectively from July 2009 to October 2010. Blood samples submitted to hematology department for chromatographic analysis by HPLC that showed hemoglobin A2 = 20% (retention time 3.65 to 3.7 minutes) were included. These samples were analyzed further through RFLP-PCR utilizing MnlI restriction enzyme for hemoglobin E mutation.  
**Results:** Out of 12045 chromatograms, A2 = 20% was detected in 34 (0.28 %) samples. Out of these 34 samples, Hb E mutation was detected in 26 samples (76.4%) by PCR-RFLP. Male: female ratio was 1.1:1. Median age was 13 years. Mean Hb=9.59 gm/dl, MCV=73.13 fl and MCH=22.7 pg.  
**Conclusion:** Hb E was detected in n=34 samples (0.28%). In our study the prevalence of Hb E is low as compared to international data.

**Keywords:** Hemoglobin E, variant hemoglobins, RFLP-PCR

**8.44****A REVIEW OF PLATELET THERAPY IN A TERTIARY CARE HOSPITAL***Huma Mansoori, Bushra Moiz**Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Objective:** To assess the appropriateness of utilization of platelet transfusion with reference to British Committee for standard in Hematology guidelines (BCSH)

**Methods:** A retrospective review of transfusion episodes of platelet therapy in the month of June 2011 was carried out. We reviewed medical charts of all patients who received platelet transfusion. The records were evaluated for indications for appropriate/inappropriate therapy, primary diagnosis, trigger for transfusion and discipline. Patients receiving therapy in emergency were excluded because of incomplete information.

**Results:** There were 188 episodes of platelets transfusion during this period. Adults were the main users which comprise 90.3% (n=169) of all episodes. Patients admitted under the department of medicine were the major recipients for platelets comprising 29.8% of all episodes followed by hematology (19.1%). Percentage for prophylactic transfusion was 76.6% while for therapeutic transfusion it was 19.7%. The main indication for platelet transfusion was prophylaxis before invasive procedure/operation (29%).

**Conclusion:** The audit demonstrated a low rate of adherence to adapted transfusion policy. It was found that the indications for platelet transfusions were inappropriate in 44.8% of episodes. As for prophylactic transfusion 43.1% was incorrect whereas for therapeutic transfusion 1.7% was wrong.

**Keywords:** Platelet transfusion, audit, indications

**8.45****CHROMOSOMAL ABNORMALITIES IN ACUTE LYMPHOBLASTIC LEUKEMIA IN PAKISTANI POPULATION PERFORMED BY CONVENTIONAL CYTOGENETICS***Muhammad Shariq, Sarwar Ali, Zahida Khilji, Muhammad Khurshid, Salman Naseem Adil, Mohammad Usman Shaikh*  
*Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Objective:** To see the pattern of chromosomal abnormalities in patients with acute lymphoblastic leukemia

**Methods:** A retrospective analysis of all the cases of acute lymphoblastic leukemia received at Aga Khan University Laboratory for cytogenetic analysis from January 2006 to June 2011 was performed. Cytogenetic analysis was performed in all cases using a trypsin-Giemsa banding technique. Karyotypes were interpreted using International System for Cytogenetics Nomenclature criteria.

**Results:** A total of 854 samples were received during the study period. Three hundred and six (35.8%) were received with the diagnosis of acute lymphoblastic leukemia. There were 228 males and 78 females. 54.12% (n=138) of these cases had normal cytogenetics whereas, 45.88% (n=117) had abnormal

cytogenetics. Most of the abnormal cases showed hyperploidy. **Conclusion:** Translocations were more common in older age group (>30years) whereas, hyper-diploidy were more common in younger population (<30years).

**Keywords:** Chromosomal abnormalities, ALL, Pakistan

**8.46****CYTOGENETIC ABNORMALITIES IN ACUTE MYELOID LEUKEMIA***Sarwar Ali, Muhammad Shariq, Farrukh Ali, Muhammad Khurshid, Salman Adil, Muhammad Usman, Zahida Khilji, Farzana Murad**Department of Pathology & Microbiology, Aga Khan University, Karachi*

**Objectives:** To study the pattern of chromosomal abnormalities in acute myeloid leukemia using conventional cytogenetics in Pakistan

**Methods:** A retrospective & prospective analysis of cytogenetic studies was carried out in patients who were diagnosed as AML of all age groups. Cytogenetic analysis was performed using a trypsin-Giemsa banding technique. Karyotypes were interpreted using International System for Cytogenetics Nomenclature.

**Results:** A total of n=301 patients with AML were evaluated. Cytogenetic results were available in n=242 patients; out of which n=160 were males and n=82 were females. n=146 patients (60%) were found to have a normal karyotype while n=96 patients (40%) with abnormal karyotype. The most common abnormal karyotype was translocation n=54 (22%) with high incidence of t (8; 21). Trisomy 8 was common among the trisomies.

**Conclusion:** Cytogenetic studies should be part of the initial work up of every patient with AML. Larger scale studies will help refine our understanding of the less common chromosomal patterns and conduct multivariate analysis to define the relative prognostic value of karyotypic results.

**Keywords:** Chromosomal abnormalities, AML, Pakistan

**8.47****EXPRESSION OF PAX-5 IN B-CELL LYMPHOMA***Muhammad Rahil, Naila Kayani, Arsalan Ahmed*  
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**Introduction:** Mature B-cell neoplasms comprise >90% of all lymphoid neoplasms. Together with precursor B lymphoblastic lymphoma / leukemia and Hodgkin lymphoma, these tumors are composed of neoplastic B cells exhibiting a wide range of differentiation from precursor B cells early in the B cell maturation pathway with only partial expression of pan-B-cell antigens to late-stage B cells undergoing plasma cell differentiation. Diagnosis of B lymphoma is therefore greatly dependent on immunohistochemistry. There are Pan-B-cell antigens routinely used for the diagnosis of B-cell lymphoma, include CD19, CD20, CD22 and CD79a. PAX-5 protein, also known as B-cell-

specific activation protein is a B-cell-specific transcription factor essential for commitment and functional maintenance it is also expressed in reed Sternberg cells of Hodgkin lymphoma. *Objective:* The objective of this study is to determine the frequency of PAX-5 expression in B-cell lymphomas through immunohistochemistry in order to improve the diagnosis of B cell lymphoma.

*Method:*

- Study setting: This study was conducted at The Aga Khan University Hospital, Karachi.
- Study duration: One year.
- Study design: Cross-sectional descriptive.
- Sampling technique: Non probability consecutive sampling.
- Sample size: Estimated sample size will be 125 patients.

*Results:* Total 125cases which includes 64 cases of Hodgkin lymphoma and 45 cases of non-Hodgkin lymphoma and 16 cases of precursor B lymphoblastic lymphoma all show moderate to strong PAX- 5 positivity.

*Conclusion:* This study demonstrates that all the cases of B cell lymphoma (Hodgkin and non-Hodgkin) show consistent PAX-5 positivity. PAX-5 is the most sensitive and reliable immunohistochemical marker for B-cell malignancies. Lack of PAX-5 expression correlates with the presence of plasma cell differentiation.

*Keywords:* PAX-5, B cell Hodgkin and non-Hodgkin lymphoma

#### 8.49

##### EPITHELIAL MALIGNANCIES ARISING IN OVARIAN TERATOMAS: A CLINICOPATHOLOGIC STUDY OF 11 CASES

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*Department of Pathology & Microbiology, Aga Khan University, Karachi*

*Objective:* To describe clinicopathologic features of epithelial tumors arising in ovarian teratomas

*Methods:* We retrieved 11 cases of epithelial malignancies arising in ovarian mature cystic teratomas (MCT), reported during 2006 to 2012 in the Section of Histopathology, Aga Khan Hospital.

*Results:* A total 831 cases of MCTs were diagnosed during the study period. Eleven (1.3 %) of them showed epithelial malignancies. The age ranged from 32 to 55 years (mean 42 years). Almost all presented with history of abdominal pain and mass. The size of the ovarian tumors ranged from 9 to 21 cm (mean 16 cm). Almost all the tumors were predominantly cystic, filled with sebaceous material and hair along with Rockitansky's protuberance and few solid areas. Histologically, squamous cell carcinoma (SCC) was the most common tumor and seen in six cases. Adenocarcinoma, adenosquamous and poorly differentiated carcinoma was seen in one case each. Two cases of papillary carcinoma of thyroid was seen arising in the background of struma ovarii.

Follow up was available in 8 cases. Three out of four cases with SCC received radiation and none of them is alive, while one received chemotherapy and is alive to date. The patients with adenosquamous and papillary thyroid carcinoma received chemotherapy and all are alive.

*Conclusions:* Malignancy occurring in a MCT is an extremely rare entity and squamous cell carcinoma is the most common malignant transformation.

*Keywords:* Ovarian teratoma, malignant transformation, squamous cell carcinoma

#### 8.50

##### EPITHELIOID HEMANGIOENDOTHELIOMA OF VULVA – A CASE REPORT

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*Introduction:* Epithelioid hemangioendothelioma (EHE) is a rare neoplasm vascular origin that occurs mostly in soft tissue, lung and liver. Localized vulvar occurrence is extremely rare.

*Case:* A vulvar biopsy of a 36 year old female was received with a clinical history of unilateral ulcerated vulvar swelling for 1 year. Morphological features were of a vascular lesion consistent with epithelioid hemangioendothelioma. On immunohistochemistry the tumor cells were positive for vascular markers, CD31 and CD34. Focal positivity for cytokeratin AE1/AE3 was also noted.

*Conclusion:* Epithelioid hemangioendothelioma is a rare soft tissue vascular tumors of endothelial origin with a clinical course intermediate between benign hemangioma and angiosarcoma with reported recurrences and rare metastasis. Only four cases of localized vulvar region tumors have been reported in the English literature. We hereby describe the fifth case of vulvar epithelioid hemangioendothelioma with its immunohistochemical findings.

*Keywords:* Vulva, sarcoma, epithelioid hemangioendothelioma.

#### 8.53

##### METAPLASTIC CARCINOMA OF THE BREAST, A CLINICOPATHOLOGIC AND HORMONE RECEPTOR STUDY OVER A PERIOD OF 7 YEARS

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*Background and Objective:* Metaplastic Breast Carcinoma is a distinct and rare type of cancer accounting for less than 1% of invasive breast tumors. The metaplasia is in the form of epithelial or mesenchymal cell population. These tumors are usually classified as matrix producing carcinomas, spindle cell carcinomas and squamous cell carcinomas. The determination of pathogenesis and clinicopathological features has been quite difficult owing to rarity. The 5-year survival is generally less than infiltrating ductal carcinoma. Different studies have also shown that MBC is mostly negative for hormone receptors. The objective was to determine the clinicopathological characteristics including hormone receptor status of metaplastic breast carcinomas.

*Methods:* All diagnosed cases of Metaplastic breast carcinoma from August 2005 to July 2012, at AKUH were included.

**Results:** Total 112 cases were retrieved. Mean age+ SD was 49.43 + 13.04 years. Mean tumor size was calculated to be 5.70 + 2.95 cm (n=75). Squamoid differentiation was most common, followed by Spindle cell and Chondroid metaplasia. Among Immunohistochemical stains, CK 5/6 was most commonly used for squamoid differentiation, vimentin and cytokeratin AE1/AE3 for spindle cell variant and S-100 for chondroid metaplasia. ER status was positive in 19 (39.5%) and negative in 29 (60.4%) (n=48). PR status was positive in 17 (36.9%) and negative in 29 (63%)(n=46). Her2/neu status was positive in 20 (57.14%) with only 2 cases showing strong 3+ positivity. It was negative in 15 (42.8%) (n=35).

**Conclusions:** Metaplastic breast carcinoma is a rare and intriguing entity and its clinicopathologic features are still to be well established. Majority of the cases are ER and PR negative so conventional hormone therapy therefore does not prove to be very beneficial and better treatment options are needed.

**Keywords:** Metaplastic carcinoma, spindle cell carcinoma, breast carcinoma.

#### 8.54

##### SPERMATOCYTIC SEMINOMA; A RARE TESTICULAR GERM CELL NEOPLASM: ROLE OF HISTOLOGY, SPECIAL AND IMMUNOHISTOCHEMICAL STAINS IN DIAGNOSIS.

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**Background and Objective:** Spermatocytic seminoma is a rare testicular germ cell tumor of old men. Accounting for 1-4% of all seminomas, spermatocytic seminomas have distinct pathogenesis, histological features, immunohistochemical profile, genetic features and clinical behavior which distinguishes them from other germ cell tumors, especially classic seminoma. In few cases, histology of these tumors mimics with classic seminomas and immunohistochemical markers which are routinely positive in classic seminoma cases such as PLAP and CD117 are employed to confirm the diagnosis. The objective was to evaluate the utility of CD 117 immunostain along with other immunohistochemical stains and histological features in distinguishing Spermatocytic seminomas from classic seminomas

**Methods:** All spermatocytic seminomas diagnosed during 1992 to 2012 at Section of Histopathology, Department of Pathology & Microbiology, Aga Khan University.

**Results:** Total 15 cases of Spermatocytic seminomas were reviewed. Median age was 66 years and average tumor size was 9.9 cms. Tunica vaginalis was breached in 02 cases. Microscopically, all of the cases showed presence of edema and absence of lymphocytic infiltrate. Intratubular germ cell neoplasia was seen only in one case. Cytoplasmic glycogen was negative in all 12 cases, where applied. Placental alkaline phosphatase immunostain was negative in 11 cases. CD 117 was positive in 6 out of 7 cases.

**Conclusion:** CD 117 is of limited utility in differentiating the spermatocytic seminoma from classic seminoma as it is expressed in significant number of spermatocytic seminomas. However,

different histological features, PAS special stain and PLAP immunostain are significantly helpful in distinguishing these two entities.

**Keywords:** Spermatocytic seminoma, CD-117 immunostain, testicular cancer

#### 8.55

##### SEX CORD-STROMAL TUMOURS OF THE OVARY; A CLINICOPATHOLOGICAL SPECTRUM; 20 YEARS' EXPERIENCE

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**Background and Objective:** Sex-cord-stromal tumors of the ovary are rare neoplasms and they differ from the common surface epithelial tumors in clinical and morphological features leading to many important issues in differential diagnosis. Most of the tumors have better prognosis than epithelial neoplasms and present at early stage I, however occasionally metastasis and recurrence is seen. The objective was to see the various histomorphological patterns and clinical features along with follow-up in our set-up

**Method:** All reported cases of sex cord stromal tumors of ovary in the Section of Histopathology AKU during 1992 to 2012 were retrieved and slides were reviewed. Clinical and pathological features were noted.

**Results:** A total of 484 cases of sex cord stromal tumors were retrieved. The age ranged from 1 to 92 years with mean + SD was 44.3 + 16.8 years. The right ovary was involved in 199 cases (55.1%) and left in 162 cases (44.9%), Bilaterality was observed in 4 cases (n=361). Of the different types of sex-cord stromal tumors, most common was adult granulosa cell tumor 211(43.5%). 24 Juvenile granulosa cell tumors were retrieved (4.9%). Other types were fibromas 98 (20.2%) with 13/98 mitotically active and cellular fibromas, fibrothecomas 47(9.7%), thecomas 26(5.3%), sertoli-leydig cell tumors 34(7%) and sclerosing stromal tumors 26(5.3%). 10 cases of steroid cell tumor and 4 cases each of sex cord tumor with annular tubules and gonadoblastoma. The mean size was 10.54 cms. Immunohistochemical studies were also applied. 94% of the tumors were stage I at the time of diagnosis.

**Conclusions:** Sex cord stromal tumors are uncommon ovarian tumors with wide age range and diverse histological types having better prognosis than epithelial tumors. Immunohistochemical markers overlap with epithelial tumors so there is need to distinguish these two.

**Keywords:** Ovarian cancer, sex cord stromal tumors, rare.



**8.57**  
TUMOR WITH PERIVASCULAR MYOID  
DIFFERENTIATION PRESENTING AS SUB AREOLAR  
LUMP - A CASE REPORT

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**Introduction:** Tumors with perivascular myoid differentiation are a group that includes adult type myofibromatosis, glomangiopericytomas and myopericytomas. These categories were first described by Granter et al. and the common denominator is the presence of perivascular myoid differentiation. **Case report:** A tumor with perivascular myoid differentiation in a 15 year old boy presenting as a subareolar breast lump is being reported. The lesion was well circumscribed but unencapsulated and it exhibited compressed thin walled capillary size vessels lined by single layer of flattened endothelial cells. In areas branching vessels with open lumina (hemangiopericytoma like vascular pattern) were also seen. Between these compressed vascular channels, there was proliferation of plump cells with moderate to abundant cytoplasm. Nuclei were vesicular, oval to spindle shaped with blunt ends. In some areas nuclei appeared to be arranged in palisades around vessels imparting a pseudorosette appearance. Significant nuclear pleomorphism, infiltrative growth pattern, or increase in mitoses was not noted.

On immunohistochemistry the lesional cells showed diffuse positivity for smooth muscle marker (ASMA) and were negative for CD34 immunostain. Hemangiopericytoma like vasculature, characteristic whorled arrangement seen in myopericytoma or round cell population resembling cells of glomus tumors were not noted.

**Conclusion:** The above described case is the first to be reported in the subareolar region of breast in an adolescent boy. These tumors usually present as subcutaneous nodules primarily in distal extremities. Complete local excision is curative in most cases but in view of reported local recurrences and rare malignant transformation, cases where excision is marginal or incomplete, close clinical follow-up should be recommended.

**8.58**  
PEDIATRIC RENAL CELL CARCINOMA; REPORT OF  
THREE CASES WITH DISTINCT HISTOLOGY:  
TRANSLOCATION XP11.2 / TFE3 EVALUATION IS  
NECESSARY OR ANCILLARY?

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**Introduction:** Renal carcinoma associated with Xp11.2 translocation/ *TFE3* gene fusions has been recently identified and added to the recent World Health Organization (WHO) classification. These are rare tumors predominantly affecting children (1/3<sup>rd</sup> cases of RCC), but it may occur in adult patients. To date, there have been approximately 160 reported cases of

this subtype. The mean age in published cases is approximately 25 years; the median age is 20 years. Microscopically, the tumor typically consisted of clear and eosinophilic/oncocytic voluminous cells arranged in papillary, trabecular, and nested/alveolar patterns. Hyaline nodules and numerous psammoma bodies are commonly present.

Immunohistochemically, Cytokeratin AE1/AE3 and cytokeratin CAM-5.2 are focally and weakly positive.

In recent years three cases were reported in patient aged 2.5, 12 and 7 year old respectively with the same distinct morphology and Immunohistochemical features as that of translocation carcinoma.

**Conclusions:** Demonstration of translocation may not be required in every case with distinct morphology and *TFE3* immunohistochemistry may be less reliable than reported in the literature with numerous false positives. Lack of, or minimal, cytokeratin and EMA expression may be the most helpful immunophenotypic findings. Debate still goes on regarding the biological behavior of the translocation RCC in children and young adults. Whereas some series have suggested a good prognosis when RCC is treated with surgery alone despite presenting at a higher stage (III/IV) than *TFE3*-RCC, a meta-analysis reports that these patients have poorer outcomes. Recurrences have been reported 20 to 30 years after the initial resection of the translocation-associated RCC.

**Keywords:** Pediatric cancer, renal cell carcinoma, translocation

**8.59**  
LYMPHANGIOMA CIRCUMSCRIPTUM: A  
CLINICOPATHOLOGICAL SPECTRUM AT A TERTIARY  
CARE HOSPITAL

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Naila Kayani, Khurram Minhas, Zubair Ahmed, Shahid Pervez,  
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**Background and Objective:** Lymphangiomas are malformations of abnormal lymphatic channels which may be localized or generalized, congenital or acquired. They account for 4% of vascular tumors in children. They arise anywhere on skin, subcutaneous tissue or mucous membranes. The classical types are: a) Lymphangioma simplex b) lymphangioma circumscriptum (LC) c) cavernous lymphangioma and d) cystic hygroma. The term LC was first coined in 1889, presenting as multiple clusters of clear, pink or red vesicles or recurrent cellulites. The objective was to see the clinico pathological spectrum of LC. **Study design:** Retrospective

**Place and period of study:** Department of Pathology & Microbiology AKUH Karachi 2002 – 2012

**Methods:** All reported cases of LC were retrieved, clinical and pathological features were noted.

**Results:** The patients' age ranged from 06-66 years (mean 24 year), sixteen males and eleven females. The commonest sites was anal/perianal region (22%) followed by extremities and genital area (18%). Four cases were described on tongue & two

on trunk. Vesicles with erosions and bleeding and localized growth were the usual clinical presentations. Five of the patients had congenital swelling.

Microscopic examination revealed acanthotic squamous epithelium with papillomatosis. The sub epithelial areas had collections of lymphatic channels composed of ectatic dilated vessels with serum and inflammatory cells in their lumina. The lymphatic channels were seen in deeper layers along with lymphocytic aggregates.

**Conclusion:** Lymphangioma circumscriptum is a malformation of abnormal lymphatic channels with feeding cisterns in subcutaneous tissue. It is a benign lesion with surgical excision as preferred mode of treatment. It has high recurrence rate if excised incompletely.

**Keywords:** Lymphangioma circumscriptum skin

### 8.60

#### NEUROBLASTOMA, GANGLIONEUROBLASTOMA AND GANGLIONEUROMA - FROM IMMATURE TO MATURE

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**Background and Objective:** Neuroblastoma, ganglioneuroblastoma, and ganglioneuroma are tumors of shifting maturity and these are originated from the primordial neural crest cells that make up the sympathetic nervous system. These cells may be undifferentiated as neuroblasts or may mature to ganglion and Schwann cells. A tumor composed principally of neuroblasts is referred to as neuroblastoma, which represents 10% of all pediatric tumors. The presence of immature tissue in NB and GNB indicates malignant or potentially malignant behavior; the objective was to determine the clinicopathological characteristics of the neuroblastic tumors, including Neuroblastoma, ganglioneuroblastoma and ganglioneuroma

**Methods:** A retrospective study from 2002 till 2012, including all cases of neuroblastoma, ganglioneuroblastoma and ganglioneuroma

**Results:** Total 184 cases were retrieved and out of these 110 were neuroblastomas (59.8%), 55 were ganglioneuromas (29.9%) and 19 (10.3%) were ganglioneuroblastomas. Two ganglioneuromas were associated with paraganglioma and one was in gastrointestinal tract presenting as ganglioneuromatosis. Male gender was predominant with n=110 (59.8%). Common sites were adrenal glands, abdomen (retroperitoneum), paraspinal region, pelvis, brain and posterior mediastinum etc. Lymph node metastasis was also frequently seen (31 cases) mostly in neuroblastomas (n=29).

**Conclusions:** Neuroblastoma, ganglioneuroblastoma, and ganglioneuroma are more frequently seen in male children with most of the cases during first decade of life. Metastasis is also frequently seen in neuroblastomas, and a search for blastomatous component should be sought for in these tumors due to significantly bad prognosis.

**Keywords:** Ganglioneuroma, ganglioneuroblastoma, neuroblastoma.

### 8.61

#### PATHOLOGY AND EPIDEMIOLOGY OF ESOPHAGEAL CANCER

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**Objective:** To determine epidemiological and pathological features of esophageal malignancies

**Methods:** One hundred and twenty one esophageal primary malignancies diagnosed in 2009 and registered from different regions of Pakistan were randomly selected using the AKUH pathology-based cancer registry data-base. These were biopsy specimens (97.5%) and esophagectomy specimens (2.5%). The data of these retrieved cases was reviewed, validated and patients were actively followed to determine disease progress and survival. The cases were diagnosed on the basis of hematoxylin eosin (H&E) stain. Special stains and immunohistochemistry were used additional diagnostic tools.

**Results:** Esophageal malignancies were predominantly observed in the seventh decade of life (25.7%), though approximately half (56.2%) the cases were seen at or below 50 years of age. The mean age of all patients was 50.4 years. The predominant morphology was squamous cell carcinoma (77.7%), adenocarcinoma (20.6%), and adenosquamous carcinoma (1.7%). Thirty six percent of the patients were residents of Karachi, whereas 43% hailed from Quetta, Baluchistan. The gender distribution was 56 (46.3%) males and 65 (53.7%) females. A third (33.3%) of the patients were alive at the end of the first year.

**Conclusions:** The predominant morphology of esophageal cancer was squamous cell carcinoma, with a higher preponderance in females and those originating from Quetta, Baluchistan

**Key word:** Esophageal cancer

### 8.62

#### DOG1 IN THE DIAGNOSIS OF GASTROINTESTINAL STROMAL TUMORS - A COMPARATIVE STUDY

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**Objectives:** To compare the immunohistochemical expression of DOG1 with the expression of KIT on a cohort of GIST cases

**Methods:** A total of 35 cases of GIST were retrieved and stained by a monoclonal antibody against DOG 1. Positive and negative controls were run in parallel.

**Results:** The ages ranged from 22 to 85 years (Mean 53 years). Twenty two (22) were males and 13 were females. The location of GISTs were, stomach 10, mesentery 11, small intestine 7, large intestine 6, anal canal 1. The size of the tumor ranged from 3.5 cm to 27 cm (mean 14.7cm). Mitotic activity ranged from 3 to 45/50HPFs (Mean 8.6). High risk GISTs were 26, Intermediate 3 and Low was 1. Risk stratification was not possible on 4 cases. Twenty five (25) cases were spindle cell type, 5 were epithelioid & 5 were mixed. Comparison of CD117 with DOG1. In 31/35 (88.5%) CD117 positive GISTs, DOG 1 was positive in 28/35 (80%) of cases.

Out of the 4 (11.4%) CD117 negative GISTs, DOG1 was strongly positive in 1 (25%) case.

In 4 cases, DOG 1 staining was diffuse and strong as compared to weak and focal staining of CD117.

*Conclusions:* DOG 1 is more sensitive IHC marker for GIST than KIT so DOG 1 is a surrogate marker in the diagnosis of GISTs.

*Keywords:* GI stromal tumor, DOG 1, CD117

### 8.63

#### PRENATAL DIAGNOSIS FOR B -THALASSEMIA MAJOR DETECTS NEW AND RARE MUTATIONS IN PAKISTANI POPULATION

*Toheed Kausar, Azra Samreen, Lamia Altaf, Nazneen Islam, Mohammad Khursheed, Zahra Hasan, Tariq Moatter*  
*Department of Pathology & Microbiology, Aga Khan University, Karachi*

*Background & Objective:*  $\beta$ -thalassemia is one of the most common autosomal single-gene disorder in Pakistan. Approximately 5% of the Pakistani population carries  $\beta$ -thalassemia trait and every year more than 6000 new children are born with the disease. A possible solution to this problem is prenatal diagnosis. The objective was to study  $\beta$ -globin gene mutations in chorionic villus Samples of  $\beta$ -thalassemia minor parents.

*Methods:* Fetal cells obtained from chorionic villus sampling or amniocentesis was used as source of fetal DNA for mutation analysis. Most common mutations were screened by the Amplification Refractory Mutation System. Linkage analysis was done for uncharacterized mutations and DNA sequencing was performed for unknown mutations by cycle sequencing method using Beckman Coulter genetic analysis system.

*Results:* A total 383 families were tested using a panel of 13 common and rare mutations by ARMS-PCR. Out of 13 mutations IVS1-5 (G-C), Codon 8/9 (+G) and 619bp deletion accounted 71% of the total mutations detected. Four unidentified samples were confirmed by DNA sequencing in which -88 (C-T), -90 (C-T) and codon 59 (+T) were identified. These mutations were first time reported in the Pakistani patients. In addition, 19.2% fetal samples were normal, 52.3% heterozygous and 26.4% were thalassemia Major.

*Conclusions:* Our study presented distribution of  $\beta$ -thalassemia mutations in Pakistani patients and describe some new and rare mutations in major ethnic groups. The prenatal diagnosis and carrier screening represents an effective approach for prevention of  $\beta$ -thalassemia in Pakistan.

*Keywords:*  $\beta$ -thalassemia, ARMS-PCR, mutation, prenatal diagnosis, CVS

**9.3****ACUTE BACTERIAL MENINGITIS IN CHILDREN – FINDINGS FROM THE EMERGENCY DEPARTMENT OF A TERTIARY CARE HOSPITAL**

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**Objective:** Acute bacterial meningitis (ABM) is a leading cause of childhood febrile illnesses. The World Health Organization estimated that annually BM causes at least 1.2 million cases worldwide and of those 135,000 result in deaths. ABM is among the top 10 causes of infection-related deaths worldwide

**Objectives:** 1) To determine the signs and symptoms of ABM in different age group of pediatric population 2) To determine the role of CT scan in children with acute bacterial meningitis (ABM)

**Results:** Total 192 patients had been admitted with ABM. Fever was the presenting complaint in 165 (86%) of patients. Vomiting was present in 93(48.43%), among them 49(52.68%) were more than 5 years of age. Irritability was present in 54 (28.12%) among them 27(50%) were less than 1 year of age. Fits were present in 47 (24.47%) of patients out of which 21(44.68%) were less than 1 year of age. Neck stiffness and sign of meningeal irritation (kerning's sign and brudzinski's sign) were present in 53(27.60%) , 26 (13.54%) and 18 (9.3%) respectively. These signs are more common in children more than 5 years of age i.e. 29(54.7%), 16(61.5%) and 11 (61.11%) respectively. Headache on presentation was found in 77(40.10%) among which 56(72.72%) were more than 5 year. CT-scan was done in 114 (59.4%) of patients. Positive finding on CT scan were present in 24 (21.0%) which showed cerebral edema in 16(66.66%), hydrocephalus in 2 (8.3%) and cerebral infarct in 6 (25%) of patients. Majority of patients 151 (78.6%) patients were admitted in ward while 40(20.8%) were admitted in HDU/critical care units. Adverse outcome were observed in 6 (3.12%) of patients.

**Conclusion:** Younger children with ABM presents with nonspecific signs and symptoms. Headache and sign of meningeal irritation are commoner findings in children more than 5 years. CT-scan may have a beneficial role in ABM

**Keywords:** Acute bacterial meningitis, emergency department, Pakistan

**9.4****ANTIBACTERIAL ACTIVITY OF NAJA KARACHIENSIS (BLACK COBRA)**

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**Objective:** Infectious diseases remain a significant threat to human health, contributing to more than 17 million annual deaths thus indicating an urgent need to identify novel molecules for antimicrobial chemotherapy. The search for new antibacterial compounds from novel natural sources is an important research area. We hypothesize that animals living in polluted environments

are potential source of novel antimicrobials. Therefore in this study we used crude extracts prepared from different organs of *Naja karachiensis*.

**Method:** Various 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 antibacterial activity of extract was tested against neuropathogenic *Escherichia coli* K1 and methicillin-resistant *Staphylococcus aureus* (MRSA).

**Results:** For the first time, the findings revealed that gall bladder and liver extracts of *N. karachiensis* exhibited potent antibacterial activity against neuropathogenic *E. coli* K1 and MRSA in a concentration dependent manner

**Conclusion:** In the light of our results it can be stated that gall bladder and liver extracts of *N. karachiensis* exhibited potent antibacterial activity against neuropathogenic *E. coli* K1 and MRSA.

**Keywords:** Antibacterial activity, Naja Karachiensis

**9.5****ANTIBIOTICS FOR THE TREATMENT OF DIARRHEA IN CHILDREN**

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**Objective:** Diarrhea is a major cause of childhood morbidity and mortality in developing countries and responsible for more than 1.3 million deaths annually. The incidence of cholera has been increasing steadily, with a case-fatality rate of 2.38% and its burden remains highest in children aged less than 5 years. The mainstay of therapy in cholera is rehydration while antibiotics are recommended by WHO for severe cases. Shigella is a relatively common cause of dysentery in children. A number of antibiotics are currently in use for treatment of shigella dysentery, depending upon variations in resistance patterns by region. *Cryptosporidium* diarrhea, caused by an intracellular protozoan parasite is an important cause of persistent diarrhea in children. It may result in a fatal illness in immune-compromised children if not treated. Currently there is a dearth of literature exploring the effectiveness of antibiotics for diarrheal diseases in children. Our aim was to systematically review and analyze relevant material on the subject.

**Method:** We reviewed literature reporting the effect of antibiotics for the treatment of diarrhea due to cholera, Shigella and *Cryptosporidium* in children. We used a standardized abstraction and grading format and performed meta-analyses to determine the effect of the treatment with various antibiotics on mortality and rates of clinical and bacteriological/parasitological failure. The ChERG Standard Rules were applied to determine the final effect of treatment with antibiotics on diarrhea morbidity and mortality.

**Results:** For shigella; there was no data on mortality; either all-cause or cause specific, hence we used clinical failure rates as a proxy for shigella deaths. Treatment for Shigella dysentery with antibiotics can result in a 82% reduction in diarrhea mortality due to Shigella. For cryptosporidiosis; there was data on all-cause mortality but the evidence was weak hence we used clinical failure rates as a proxy for mortality to estimate that antimicrobial

treatment of diarrhea due to cryptosporidiosis can result in a 54% reduction in mortality.

*Conclusion:* There is evidence to recommend antibiotic use for reduction of morbidity and mortality due to cholera, shigella and cryptosporidium. We recommend that more clinical trials should be conducted to evaluate efficacy and safety of first- and second- line drugs currently in use for treatment for diarrhea and dysentery in both developing and developed countries.

*Keywords:* Antibiotics, children, diarrhea

## 9.6

### ASSOCIATION OF HIV PROGRESSION WITH VIRAL GENOMIC VARIABILITY AND SUBTYPE, AND WITH PATIENT'S HLA TYPE

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*Objective:* The progression of human immunodeficiency virus (HIV) infection is influenced by a number of host and virus factors. The aim of this study was to analyse the mutual association of various disease parameters, namely, disease progression, HIV genomic variability and subtype, and patients' HLA.

*Method:* The study was performed in a Kenyan cohort of 50 HIV-infected individuals. Hypermutation and genomic variability analysis was performed on HIV gag sequences using Hypermut and Shannon's entropy analysis tools, respectively. The same sequences were also used to assign viral subtypes. HLA typing was based on the patients' DNA sequences of the HLA-A, -B, and -C loci.

*Results:* A linear trend was observed between HIV genomic variability, and high viral load and low CD4 count. While subtype D was equally distributed among the high and low-intermediate viral load groups, subtype C was predominantly represented in the former whereas subtype A was more frequently found in the latter group. HLA C\*07 was found to be the predominant allele in patients infected with HIV-1 subtype A and D, while patients infected with subtype C mostly exhibited HLA A\*02 and A\*68.

*Conclusion:* Similar analyses on larger cohorts can help in establishing correlations among various disease parameters. Such studies will help in determining the outcome of HIV infection in various populations.

*Keywords:* HIV, Genomic variability, HLA

## 9.7

### CHANGING TREND OF MALARIA INFECTIONS IN PAKISTAN.

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*Objective:* A systematic understanding of malaria parasite population is crucial in order to evaluate new tools and treatment

options for the future. Regional studies are necessary to get better estimates on the prevalence of malaria parasites including early and accurate diagnosis of malaria infections to improve treatment outcomes. We aim to present comprehensive information on current status of malaria from Pakistan. *Method:* This was a retrospective cross sectional study, conducted at The Aga Khan University. Data on malaria positive cases on microscopy were extracted from the computerized information system of the hospital and transferred to the statistical software SPSS version 19.0 for analysis.

*Results:* During study period (1990-2006) 11615 samples were found positive for malaria parasite. Of which 4897 (42%) were infected with *P.falciparum* whereas 6640 (57%) were infected with *p.vivax*. less than 1% mixed infections were observed in our study. Over the span of 25 year decline in prevalence of *P.falciparum* was observed.

*Conclusion:* Prevalence of *P.vivax* is increased over the years with more cases of severe vivax malaria in this region. The changing trend in prevalence of malaria species presents challenges which require evidence based research and innovative control strategies to combat this disease.

*Keywords:* Malaria, *P.falciparum*, *P.vivax*

## 9.8

### COMPARISON OF IMMUNOGENICITY OF TYPE 1 MONOVALENT ORAL POLIO VACCINE ADMINISTERED AT SHORT INTERVALS WITH TYPE 1 MONOVALENT AND TYPE 1&3 BIVALENT ORAL POLIO VACCINE GIVEN AT STANDARD INTERVALS IN PAKISTAN: A RANDOMIZED TRIAL

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*Objective:* Pakistan is not meeting polio eradication targets, and is the only endemic country with increasing number of cases. Of new strategies needed for polio eradication in Pakistan, one strategy may be rapid, shorter interval rounds of supplementary immunization activities (SIAs) with mOPV1 or bOPV1&3 in areas of persistent transmission. Typically, SIA rounds are separated by an interval of ~30 days. It is possible that the same level of immunogenicity could be attained by shorter interval spacing between OPV doses as compared to the 30 day interval would allow multiple SIA rounds to be conducted quickly to eradicate WPV circulation in a very short time period of a few weeks and allow multiple "sweep throughs" in areas of high transmission in a short period of time, increasing the chance of vaccinating children missed in previous rounds. *Objective:* 1. To demonstrate the non-inferiority of mOPV1 vaccine given at shorter intervals (7 or 14 days) apart compared to mOPV1 vaccine given at customary interval (30 days) 2. To demonstrate the non-inferiority of mOPV1 vaccine given at shorter intervals (7 or 14 days) apart compared to bOPV13 given at customary interval (30 days) 3. To demonstrate the non-inferiority of mOPV1 vaccine given at standard intervals (30 days) apart compared to bOPV13 given at customary interval (30 days) *Method:* Design: This is a randomized clinical trial which will be conducted in 5 low-income areas in and around Karachi (4

peri-urban, contiguous coastal villages outside Karachi, and one urban squatter settlement) where the Aga Khan University's Department of Paediatrics & Child Health has well-established demographic surveillance with all pregnancies and new births in the area captured through the system. The study participants will be enrolled from birth until 100 days. No additional follow-up is planned. Subjects will be randomized to one of Four trial arms. Selection of cases: Infants born healthy (= 2.5 kg birth weight, immediate cry, no neonatal danger signs as per IMNCI) at the study sites (home or health facility births assisted by study-Trained Birth Attendants/other health personnel) and not planning to travel away during the entire study period (birth-102 days) will be eligible to be enrolled in the study. Sampling: Consecutive sampling will be done. Trial Procedure: If eligible, a birth dose of trivalent OPV will be administered to all subjects post informed consent and baseline cord/peripheral blood collection (1ml peripheral blood, 3 ml cord blood). Blood will be collected in vacutainer gel tubes and labelled appropriately. At 6 weeks, all enrolled consenting infants will undergo a second eligibility screen and will be randomized to one of 4 groups at the PHCs; Groups 1-3 receiving the first mOPV1 dose at 7, 14, or 30 days after the day 42 mOPV1 dose, Group 4 receiving bOPV13 first dose at day 42 (6 weeks) of life. The randomization will be carried out at AKU's Clinical Trials Unit (CTU). After the 42 day visit, subjects and their mothers will be accompanied by local study staff (Community Health Workers-CHWs) to the CTU for all subsequent visits as per group protocol to ensure high quality GCP for this study. Questionnaires will be filled at each visit (first at birth; second at day 42; third at day 49, 56 or 72 as per study group; fourth at day 79, 86 or 102 as per study group; fifth at day 107, 114 or 130 as per study group). Blood will also be collected at the fourth study visit for polio antibody measurement. All routine immunizations other than OPV will be provided at the study visits 1-3. Routine trivalent OPV will be provided to all study groups at end of study at visit 4-5. *Results:* Progress so far will be presented as a flow diagram as per CONSORT guidelines on request.

*Keywords:* Equivalence, short interval, oral polio vaccine

### 9.9

#### DETECTION OF METALLO-BETA LACTAMASES (IMP, VIM, NDM) AND KPC CARBAPENEMASES IN CARBAPENEM RESISTANT ENTEROBACTERIACEAE

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*Objective:* Emergence of enterobacteriaceae with resistance to carbapenem due to New Delhi metallo- $\beta$ -lactamase 1 (NDM-1) has recently been reported as a major global health problem with potential spread from Indian subcontinent. The purpose of this study was to assess the extent of the burden of carbapenemases including NDM-1 among the enterobacteriaceae from different centers of Pakistan. Background: Emergence of enterobacteriaceae with resistance to carbapenem due to New Delhi metallo- $\beta$ -lactamase 1 (NDM-1) has recently been reported as a major global health problem with potential spread from Indian subcontinent. The purpose of this study was to assess the

extent of the burden of carbapenemases including NDM-1 among the enterobacteriaceae from different centers of Pakistan. *Method:* 114 carbapenem resistant enterobacteriaceae (CRE) isolated from different clinical samples from 19 hospitals of major provinces of Pakistan were prospectively collected over the period from June 2009 to July 2010. MICs for meropenem were determined by E-test. Presence of gene for carbapenemases class A KPC enzymes and class B metallo-beta lactamase (blaNDM-1, blaIMP-1, and blaVIM-1) were detected using PCR. Variable number tandem repeats (VNTR) assay was performed on selected Klebsiella pneumoniae isolates yielded from Sindh on 12 loci to assess clonality.

*Results:* Enterobacteriaceae isolates yielded from clinical samples received from different hospitals throughout the country from 10 hospitals of Sind, 2 from Punjab, one from Baluchistan were included in the study. Majority of clinical isolates were yielded from blood cultures 57.9% (n=62). Neonates and patients greater than 60 years were most frequently affected patients. Gene for NDM-1 enzymes was detected in 94% (n=107) of clinical isolates. Among the bacterial pathogens 63.55% were Klebsiella pneumoniae (n=68) followed by E.coli 30.8% (n=33). MIC of meropenem tested by E-test strip on isolates positive for NDM-1 was detected to be resistant in >32 $\mu$ gm/ml in 33 isolates. None of the clinical isolates were found positive for blaIMP, blaVIM and blaKPC enzymes.

*Conclusion:* NDM-1 is the most common enzyme responsible for carbapenem resistance among the enterobacteriaceae in Pakistan

*Keywords:* NDM-1, Pakistan, carbapenem resistant enterobacteriaceae

### 9.10

#### DEVELOPMENT OF SIRNA PROBES AGAINST BALAMUTHIA MANDRILLARIS DIFFERENTIATION.

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University, Karachi*

*Objective:* Balamuthia mandrillaris is known to cause serious cutaneous infections and fatal encephalitis involving the central nervous system, with a case fatality rate of more than 95%. A key factor that contributes to the high mortality is our incomplete understanding of its pathogenesis and pathophysiology. Current methods of treatment include a combination approach, where a mixture of drugs is administered, and even then the outcome remains extremely poor. A significant challenge in the successful treatment of Balamuthia mandrillaris infections is the ability of this organism to transform into a dormant cyst form that is resistant to physiological conditions and pharmacological therapy. The carbohydrate linkage analysis of cyst walls of B. mandrillaris revealed sugar residues, including xylofuranose/xylopyranose, 4 linked glucopyranose, mannopyranose and galactopyranose. These sugars may play a protective role by acting as a permeability barrier against antimicrobial compounds. Thus, we hypothesize that targeting cellulose synthase and xylose isomerase pathways by designing siRNA may block encystation in B. mandrillaris. *Method:* The siRNA were synthesized against the conserved region of cellulose synthase and xylose isomerase using

representative gene sequences of various species. The effects of siRNA, inhibitors and exogenous sugar on *B. mandrillaris* differentiation were assessed through encystation assays. *Results:* The preliminary findings revealed that the inhibition of both enzymes using siRNA against xylose isomerase and cellulose synthase but not scrambled siRNA attenuated *B. mandrillaris* metamorphosis, as demonstrated by arrest of encystation of *B. mandrillaris*. Neither inhibitor nor siRNA probes had any effect on viability of *B. mandrillaris*.

*Conclusion:* Further work is in progress to determine whether cellulose synthase and xylose isomerase activities are crucial for the differentiation of *B. mandrillaris*.

*Keywords:* *Balamuthia mandrillaris*, xylose isomerase, RNA interference.

### 9.11

#### DISEASE SEVERITY AND PRESENTATION IN CHILDREN WITH RECENT MEASLES EPIDEMIC: KARACHI, PAKISTAN

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*Objective:* Measles is an important vaccine preventable infection. Despite immunization the reported measles related deaths are increased globally. An estimated 164 000 people died from measles in 2008 – mostly children under the age of five. *Objective:* To determine the clinical features and disease severity of measles in children during recent epidemic, presenting to emergency department

*Method:* The study was conducted at Emergency department (ED) of Aga Khan University (AKU) from February 2012 to August 2012. The charts of the patients with the diagnosis of “measles” or “suspected measles” were reviewed retrospectively. Data was collected on variables like age, gender, duration of illness, vaccination status and history of contact with index measles case. All the signs and symptoms like fever, rash, vomiting, irritability, drowsiness, and decrease intake will be recorded. The duration of hospital stay, complications (i.e., pneumonia, gastroenteritis, secondary infection, hospitalization, encephalitis etc.) were recorded. Data would be entered and analyzed using SPSS version 19.0.

*Results:* During the study period total 170 children presented to emergency department with suspected measles. The median age of presentation was 22 months, with mostly children (76%) who are more than 9 month of age. Males were 53.5% with peak in the month of May (27%). More than half were unvaccinated (53%). History of contact with measles was positive in 9.4% of children. Fever (67%) and cough (22.4%) were the most common presenting complaints. From the ED 77% got admitted, with 15% being admitted in high dependency unit. Complications observed were acute gastroenteritis (48%), pneumonia (31.6%), otitis media (3%) and encephalitis (2.2%) respectively. *Conclusion:* Measles is still a common reason for Emergency department visits in children. Improving vaccination in children can prevent morbidity and mortality related to this communicable disease

*Keywords:* Measles, Emergency Department, epidemic

### 9.12

#### DISSEMINATED NEOSCYTALIDIUM INFECTION IN AN IMMUNOCOMPETENT HOST.

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*Department of Medicine, Aga Khan University, Karachi*

*Method:* Young girl presented with visual loss and headaches for four months with no improvement with antituberculous therapy. Radiological imaging of head, chest and abdomen showed space occupying lesion in the head, nodular masses with cavitations in lungs and nodular opacities in kidneys. KOH smear from lung and kidney biopsy showed septate hyphae with fungal growth on Sabouraud’s dextrose agar after five days. Lactophenol mount appearance was suggestive of neoscytalidium species. Histopathology of kidney and lung also revealed septate hyphae.

*Conclusion:* Disseminated neoscytalidium infections are rare, to date only eleven cases have been reported, mostly in transplant patients. Overall mortality is 50% but with CNS disease it is 100% fatal. Such cases are treatment dilemmas since therapy is not well described in literature. Although, literature review supports the use of voriconazole and amphotericin for neoscytalidium infections based on low MICs in research labs. Our patient was treated initially with amphotericin and later voriconazole but did poorly and finally succumb to illness within a month of establishing diagnosis.

*Keywords:* Invasive mold, neoscytalidium, disseminated neoscytalidium

### 9.13

#### EARLY MARKERS OF ACUTE KIDNEY INJURY IN MALARIA.

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*Objective:* Acute kidney injury (AKI) is a well-known complication of malaria and a grave marker of disease severity and prognosis. We assessed risk factors (RF) associated with AKI on presentation in patients with malaria.

*Method:* We conducted a retrospective case control study on patients admitted with malaria between (2010 -2011) at AKUH. Malarial patients developing AKI, based on the RIFLE criteria represented the cases with controls not developing AKI. Variable analysis was carried out using univariate and Multi-logistic regression (MLR) techniques.

*Conclusion:* Renal failure in malaria if managed early may prevent significant morbidity. The study reports detrimental associations of advance age, severe parasitemia, acidosis and anemia. Early stratification of patients based on the above factors for close renal monitoring and institution of preventive therapy may have favorable outcomes.

*Keywords:* Acute kidney injury, malarial complication, risk factors

**9.14****EARLY SECRETED ANTIGEN TARGET 6 KDA - INDUCED SOCS1 MRNA EXPRESSION DIFFERS BETWEEN HEALTHY INDIVIDUALS AND THOSE WITH TUBERCULOSIS**

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**Objective:**Suppressor of cytokine signaling (SOCS)-1 inhibits responses to IFN- $\gamma$ . SOCS1 is increased in patients with tuberculosis (TB). We investigated the association between ESAT6-induced IFN- $\gamma$  and -SOCS1 mRNA expression in healthy controls as compared with TB patients.

**Method:** Healthy asymptomatic controls were classified using tuberculin skin test (TST) and stratified into TST negative (n=16) and TST positive (n=13) individuals based on a 10 mm induration cut-off. Also, they were divided into ESAT6-induced IFN- $\gamma$  positive (EC IFN- $\gamma$  (+), n=5) or negative responders (EC IFN- $\gamma$  (-), n=24). TB patients (n=51) included pulmonary (PTB, n=21) and extra-pulmonary (ETB, n=30) TB. ESAT6-induced IFN- $\gamma$  secretion was measured and SOCS1 and IFN- $\gamma$  mRNA expression were determined in purified peripheral blood mononuclear cells (PBMCs) 18 h post-stimulation. Statistical tests used were Wilcoxon Rank test and Mann Whitney U test.

**Results:**ESAT6-induced IFN- $\gamma$  mRNA levels were raised in EC IFN- $\gamma$  (+) as compared with EC IFN- $\gamma$  (-) (p=0.0193). ESAT6-induced SOCS1 mRNA expression was increased in TB as compared with EC IFN- $\gamma$  (-) (PTB, p=0.0009; ETB, p<0.0001) and as compared with EC IFN- $\gamma$  (+) (PTB, p=0.0229; ETB, p=0.0037). ESAT6-induced IFN- $\gamma$ /SOCS1 ratio was decreased in TB patients as compared with EC IFN- $\gamma$  (-) (PTB, p=0.0338; ETB, p=0.0007) and EC IFN- $\gamma$  (+) (PTB, p=0.0056; ETB, p=0.0020).

**Conclusion:**M. tuberculosis infection therefore results in up-regulation of SOCS1 expression but the differential balance between IFN- $\gamma$  and SOCS1 activation differentiates between latent and active disease. A decreasing IFN- $\gamma$ /SOCS1 ratio could shift the balance from latent to active disease with the resulting inability of host to control clinical disease.

**Keywords:** ESAT6, SOCS1, tuberculosis

**9.16****EFFECTIVENESS OF SIMPLE STRATEGIES IN REDUCING MULTIDRUG RESISTANT BLOODSTREAM INFECTIONS IN THE NICU OF A TERTIARY CARE HOSPITAL IN KARACHI, PAKISTAN**

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**Objective:**Nosocomial infections in the neonatal intensive care unit (NICU) are a cause of increased mortality, length of stay and cost of management. There is limited data on strategies for reducing these infections from developing countries. Therefore we report the reduction in transmission of multidrug resistant organisms (MDRO) from the NICU of a developing country after implementation of simple risk reduction strategies. To evaluate the effectiveness of implementation of six strategies in reducing the rate of nosocomial bloodstream infections (BSI) due to MDRO in the NICU.

**Method:** Using a pre and post design, the study was carried out (from June 2010- Dec 2011) at the NICU of the Aga Khan University, a tertiary care hospital with a 12-bed, level III NICU. The intervention comprised of hand washing certification for all NICU staff, use of chlorhexidine instead of povidone iodine for skin preparation, use of non-sterile gloves for diaper change, implementation of barrier nursing for clinically suspected and culture proven infections, provision of separate intubation & central line trolley for each room and limiting the use of umbilical catheters to 7 days. Within unit transmission of multidrug resistant acinetobacter, pseudomonas, vancomycin resistant enterococcus (VRE), extended spectrum  $\beta$  lactamase producer (ESBL) and methicillin resistant staphylococcus aureus (MRSA), were used as markers for nosocomial BSI. Data is reported for 3months pre-intervention period, implementation phase and for 3months post intervention. Average number of admissions within the unit was used as denominator. Data for 12 months post implementation are reported to show sustainability

**Results:**The average pre intervention rates of BSI due to ESBL, Acinetobacter, Pseudomonas and MRSA were 4.7, 3.3, 1.2 and zero respectively. In the implementation phase the BSI rates for all organisms dropped except for ESBL. A significant reduction in rates was observed in the post implementation period (ESBL 2.73, Acinetobacter 1.3, no case due to Pseudomonas and MRSA). No case of BSI due to VRE was reported during the entire study period. The average number of admissions during the 3 phases was almost similar (49, 46 and 53 respectively). There was sustained reduction in rates for all organisms, 12months after the intervention period.

**Conclusion:**Nosocomial transmission of MDRO within the NICU can be effectively reduced by adoption of simple strategies

**Keywords:** NICU, Multidrug resistant organisms, BSI, Pakistan



**9.18**

**ENCYSTMENT IS A POTENTIAL TARGET TO DESIGN THERAPEUTIC POTENTIALS AGAINST ACANTHAMOEBA INFECTIONS**

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*Objective:* A key challenge in the successful treatment of *A. castellanii* infections is its ability to transform into a dormant cyst form that is resistant to physiological conditions and pharmacological therapies resulting in recurrent infections. The carbohydrate linkage analysis of cyst walls of *A. castellanii* showed variously linked sugar residues, including xylofuranose/xylopyranose, 4 linked glucopyranose, mannopyranose and galactopyranose. These sugars may play a protective role by acting as a permeability barrier against antimicrobial compounds. Hence, targeting cellulose synthase and xylose isomerase pathways involved in cyst wall biosynthesis through siRNA, inhibitors and exogenous sugars may block encystation in *A. castellanii*.

*Method:* siRNA were synthesized against the conserved region of cellulose synthase and xylose isomerase using gene sequences available at the Baylor college of medicine website. The effects of siRNA, inhibitors and exogenous sugar on *A. castellanii* differentiation were assessed through encystation assays. Zymographic analysis was performed to determine the effect of siRNA on the extracellular proteolytic activity of *A. castellanii* during encystation.

*Results:* In this study, it is shown that the exogenous xylose reduced significantly *A. castellanii* differentiation in encystation assays ( $P < 0.05$  using paired T-test; one-tailed distribution). Inhibition of both enzymes using siRNA against xylose isomerase and cellulose synthase but not scrambled siRNA attenuated *A. castellanii* metamorphosis, as demonstrated by arrest of encystation of *A. castellanii*. Neither inhibitor nor siRNA probes had any effect on viability and extracellular proteolytic activities of *A. castellanii*. This indicates that cellulose synthase and xylose isomerase activities are crucial for the differentiation of *A. castellanii*.

*Keywords:* Acanthamoeba, xylose isomerase, cellulose synthase

**9.19**

**ENRICHMENT OF T CELLS IN SKIN LESIONS FROM LEPROSY PATIENTS DURING ENL REACTION**

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*Objective:* Leprosy is associated with a diverse clinical spectrum with increased Th1 response towards the localized tuberculoid disease and augmented Th2 response in disseminated lepromatous (LL) disease. Erythema Nodosum Leprosum (ENL) is a reactional complication which occurs towards the lepromatous pole (lepromatous LL and Borderline lepromatous BL). Clinically, ENL reaction is associated with painful crops of dermal nodules, with fever, anorexia and malaise. At the disease site, lymphocyte infiltration and upregulation of antibody responses have been reported previously. In the current study, we report an infiltration of CD3 + T cells in ENL lesions with clinical and histological evidence of disease. The objective of this study was to compare T cell infiltration in ENL lesions with clinical suspicion (ENL1) and one year follow up sample (ENL 2) with clinical/histological evidence of ENL reaction. *Method:* Leprosy patients (LL=1; BL=2) were on standard chemotherapy for leprosy during 2 episodes of ENL reaction (n=3). Frozen biopsies (5µm) were sectioned on glass slides and fixed with cold acetone. Tissue was stained with primary mouse anti human CD3 (Dako) antibody, followed by secondary biotinylated horse anti mouse antibody. The color reaction was developed with peroxidase system kit (AEC, vector). The images were taken by Leica microscope, and analysis was performed by Image J software.

*Results:* After one year standard chemotherapy, a 4 fold high CD3+ T cells were present at the reactional site, indicating recovery of T cell responses in leprosy patients.

*Conclusion:* Study of T cell subsets and gene expression profiling should confirm the type of T cells in ENL.

*Keywords:* Leprosy, T-cells, immunohistochemistry

**9.20****FREQUENCY OF ROTAVIRUS INFECTION IN HOSPITAL AND COMMUNITY SETTINGS IN PAKISTAN**

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**Background:** Rotavirus is the commonest cause of diarrhoea in infants and young children worldwide leading to 25 million outpatient visits and 2 million hospitalizations annually. Diarrheal deaths attributable to rotavirus infection are 453 000, among them more than half of all occur in five countries including Pakistan, where 39,144 (9%) deaths reported yearly. **Objective:** This study is aimed at determining the frequency of rotavirus infection in children with watery diarrhoea and healthy controls < 5 years of age in different clinical settings in Pakistan. **Methods:** Qualitative testing for Group A rotavirus was done using ELISA Prospect T kit (Oxoid) in stool of children aged <5 years in the following clinical settings: (a) Healthy controls from household surveillance of a population in rural Sind (b) Healthy controls identified from an existing list of all children within the established demographic surveillance system in a peri-urban community (c) cases of moderate to severe diarrhoea (defined as 3 or more abnormally loose stools during the previous 24 hours and signs of dehydration) of < 7 days seen in primary health care clinics in a peri-urban community (d) cases of acute watery diarrhoea (3 or more abnormally loose stools for <7 days) seen at a rural secondary care hospital where the child stayed for 2 hours for rehydration (e) cases of acute watery diarrhoea of <7 days with dehydration, were hospitalized overnight in a diarrhoea treatment unit (f) all cases of diarrhoea identified through a household surveillance in a population in rural Sindh. Frequency of rotavirus in the various clinical settings is reported.

**Results:** Overall 13974 stool samples were analyzed for rotavirus, of which 4268 were from healthy controls and 9706 from diarrhoea cases. The frequency of rotavirus was highest 30.5% in stool specimen of cases hospitalized for IV rehydration in a diarrhoea treatment unit. This was followed by 24.3% in those cases where child was given rehydration therapy at a secondary care hospital and 19.4% in cases of moderate to severe diarrhoea at primary health care clinics in a peri-urban community. The lowest frequency of 1.3% was seen in the stool sample of healthy controls from household surveillance of a rural population. **Conclusion:** Rotavirus is a cause of severe diarrhoea leading to dehydration and is therefore, over represented in studies done in hospital settings, in other clinical settings, it is a less common cause of diarrhoea.

**Keywords:** Diarrhoea, hospitalization, Group A rotavirus

**9.21****FUNGAL INFECTION OF VENTRICULAR SEPTAL DEFECT PATCH AFTER TETRALOGY OF FALLOT REPAIR WITH ACROMONIUM SPECIES**

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**Case Report:** We report a case of infected ventricular septal defect patch after tetralogy of fallot repair in a 21 year old male with *Acromonium* species, admitted to our hospital with septic emboli to lungs, kidneys, spleen and liver. He underwent surgery and tissue from vegetations on VSD repair patch was positive for *Acromonium* species with an MIC of >32 ug/mL and 1.5 ug/mL against amphotericin B and voriconazole respectively. He was treated initially with intravenous Amphotericin deoxycholate at 1mg/kg/day that was later changed to oral voriconazole. He responded well to therapy with resolution of symptoms. Voriconazole was discontinued after 3 months and based on clinical remission. However after a month of stopping therapy, patient had recurrence of symptoms along with vegetation on pulmonary valve. Two sets blood cultures became positive for *Acromonium* species with similar antifungal susceptibilities. Voriconazole was restarted and surgical excision of pulmonary valve was performed two months later with growth of same fungus. After 1 month of surgery his follow up blood cultures are negative with clinical improvement in the patient. This case reports an iatrogenic cardiac infection with a rare fungus and highlights the importance of both surgery and prolonged systemic therapy to treat such infections. **Acknowledgement:** This project is supported through grants from the Higher Education Commission and United States Agency for International Development (HEC/USAID).

**9.22****GIANT HYDATID CYST PRESENTING AS MASSIVE HEMOPTYSIS**

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**Case Report:** 30 year old woman presented with intermittent massive hemoptysis and shortness of breath. On radiological evaluation, a giant left lower lobe hydatid cyst was identified with compression of the heart. Via left thoracotomy, the hydatid cyst was removed completely. Multiple bronchial leaks were identified which were closed with interrupted 4/0 prolene. Patient had an uneventful postoperative recovery

**Conclusion:** Patients with hydatid cysts presenting with hemoptysis is a rare finding. However the reason is erosion into bronchial vessels due to delay in diagnosis. Parenchymal sparing Surgical excision of the cyst is the treatment of choice.

**Keywords:** Hydatid, hemoptysis, surgery

### 9.23

#### HIGH DOSE ORAL AMOXICILLIN ATTAINS PHARMACOKINETIC EFFICACY ENDPOINTS IN NEONATES (0-27 DAYS) AND YOUNG INFANTS (28-59 DAYS) WITH SUSPECTED SEPSIS - A POPULATION PHARMACOKINETIC PILOT STUDY

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**Objective:** To determine if pharmacokinetic 'surrogate' for efficacy ( $=50\% T > MIC_{2.0}^t$ ) of oral amoxicillin can be achieved in neonates (0-27 days) and young infants (28-59 days) with suspected sepsis when given at a dose of 75-100mg/kg/dose twice daily and To describe disposition kinetics of oral amoxicillin in newborns and young infants suspected of sepsis in primary health-care settings in Karachi, Pakistan.

**Method:** A pilot study using a population pharmacokinetic approach with a minimum of three blood samples per subject was considered optimal to determine serum levels of amoxicillin in sick newborns and young infants in Karachi. The timepoints for sparse sampling were 0 (before index dose), 2-3 and 6-8 hours (after index dose). Blood samples were shipped to Department of Clinical Pharmacology, Childrens Mercy Hospital, Kansas, MO to assess amoxicillin concentrations by HPLC with mass spectrometric detection.

**Results:** Amoxicillin levels were determined in 129 sera samples collected from 60 young infants enrolled in this study. Sixteen participants were excluded from the final analysis; 12 in whom only baseline samples were collected and 4 in whom the samples were mishandled. The remaining 44 infants contributed blood at =2 of 3 specified timepoints. Mean amoxicillin levels at 2-3 hours ( $11.6 \pm 9.5$  mg/L,  $n=44$ ) and 6-8 hours ( $16.4 \pm 9.3$  mg/L,  $n=20$ ) following the index dose exceeded the susceptibility breakpoint for amoxicillin (2.0mg/L) against resistant *S.pneumoniae* strains. Graphical plotting of individual data points in the 20 infants with 3 serum levels showed a classic dose-exposure profile in 7 and a profile consistent with delayed excretion in 13. Pharmacokinetic parameters (eg. half life, elimination constant) were estimated in the former 7 children. For 2 of these 7 children, an atypically prolonged half life unexplained by gestational age and weight, was observed. In remaining children, patient-specific PK parameters could not be determined. Two of 24 had clinical treatment failures. Six of 60 infants had a positive blood culture with predominance of gram positive organisms.

**Conclusion:** This pilot study generated observational data showing that oral amoxicillin concentrations in newborns following oral administration exceed the susceptibility breakpoint for  $>50\%$  of a 12-hour dosing interval. There was a predominance of gram-positive sepsis in our babies, emphasizing the need to describe a gram positive antibacterial such as amoxicillin's disposition in this population. A powered study to look into reasons for delayed excretion of oral amoxicillin in our young infants should follow.

**Keywords:** Amoxicillin, pharmacokinetics, young infants

### 9.24

#### HIGH ISONIAZID RESISTANCE RATES IN RIFAMPICIN SENSITIVE MYCOBACTERIUM TUBERCULOSIS PULMONARY ISOLATES FROM PAKISTAN

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**Objective:** Rapid new diagnostic methods (including GeneXpert MTB/RIF) use rifampicin resistance as a surrogate marker for multidrug resistant tuberculosis. Patients infected with rifampicin sensitive strains are prescribed first line anti-tuberculosis therapy. Roll out of such methods highlight a concern that strains with resistance to other first line anti-tuberculosis drugs will be missed. To evaluate implications of using such methods, a review of resistance data from high burden settings is essential. **Objective:** To determine resistance to first line anti-tuberculosis drugs amongst rifampicin sensitive pulmonary Mycobacterium tuberculosis isolates from Pakistan.

**Method:** Data of pulmonary Mycobacterium tuberculosis strains isolated in our laboratory (2009-2011) was retrospectively analyzed. Antimicrobial susceptibility profile of rifampicin sensitive isolates was evaluated for resistance to isoniazid, pyrazinamide, ethambutol and streptomycin.

**Results:** A total of 4183 rifampicin sensitive Mycobacterium tuberculosis strains were studied. Resistance to at least one of the first line drug was seen in 27% ( $n:1133$ ) of isolates. Overall isoniazid resistance was 15.5% ( $n:649$ ) with an isoniazid mono-resistance rate of 4% ( $n:174$ ). Combined resistance to isoniazid, pyrazinamide and ethambutol was noted in 1% ( $n:40$ ), while resistant to isoniazid, pyrazinamide, ethambutol and streptomycin was observed in 1.7% ( $n:70$ ) of strains.

**Conclusion:** Our data suggests that techniques (including GeneXpert MTB/RIF) relying on rifampicin sensitivity as indicator for initiating first line therapy will miss patients with Mycobacterium tuberculosis strains resistant to other first line drugs (including isoniazid). Roll out of these techniques must therefore be accompanied by strict monitoring ensuring early resistance detection to increase chances of improved patient outcomes.

**Keywords:** Tuberculosis, isoniazid monoresistant TB, DRUG RESISTANCE IN TB

### 9.25

#### HOW DID NEUROPATHOGENIC ESCHERICHIA COLI BECOME A PATHOGEN?

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**Objective:** *Escherichia coli* K1 is the leading cause of neonatal bacterial meningitis, affecting from 0.5 to 5 per 10,000 live births in developed countries, with far greater numbers in developing countries. It has a case fatality rate of up to 30 - 40%. The morbidity and mortality associated with *E. coli* K1 meningitis has remained significant despite advances in

antimicrobial chemotherapy. The *E. coli* K1 genome has been largely sequenced and shown to possess approximately 5.31Mb with 500 kbp that is absent in the non-pathogenic K-12. The pathogen-specific DNA is clustered on the K1 chromosome in so-called "pathogenicity islands", while a 20 kbp is missing on the K1 chromosome. This 20 kbp DNA is specific to K-12 and is considered as a "non-pathogenicity island".

**Method:** We constructed *E. coli* K1 mutant strain in which the non-pathogenicity island DNA (specific to the non-invasive K-12) has been cloned into K1. To determine the effect of non-pathogenicity island on K1 virulence, we performed bacterial interactions with the human brain microvascular endothelial cells, which constitute the blood-brain barrier, using adhesion, invasion and survival assays by inoculating  $5 \times 10^6$  bacterial CFU with brain endothelial cells grown in 24-well plates.

**Results:** The results suggest that the addition of K-12 specific 20 kbp DNA into K1, reduced K1 association with brain microvascular endothelial cells at levels similar to the non-invasive K-12 suggesting that non-pathogenicity island encode genes important for bacterial non-virulence. In contrast the mutant strain had no effect on bacterial invasion of and survival in brain microvascular endothelial cells.

**Conclusion:** The addition of 20kbp DNA fragment from K12 to K1, rendered the mutant to have reduced association with brain microvascular cells, suggesting the genes carried on that DNA fragment is implicated in bacterial interaction with brain endothelial cells.

**Keywords:** *Escherichia coli*, HBMEC, neonatal meningitis

## 9.26

### HUMAN CYTOMEGALOVIRUS SEROEPIDEMIOLOGY IN SUBGROUPS OF THE POPULATION IN SINDH, PAKISTAN

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**Objective:** Human Cytomegalovirus (HCMV) is a common virus affecting 40-100% of the adult population worldwide. Epidemiology of HCMV infection varies among the different socio-economic groups of the population. To date, no large studies have been conducted in Pakistan to determine the seroprevalence and associated factors of HCMV infection. Our objective was to determine seroprevalence and socio-demographic profile of HCMV infection in subgroups of population living in Sindh province of Pakistan.

**Method:** We recruited 1001 participants from hospitals in Karachi and communities in the suburbs of Karachi during 2010 to 2012. Socio-demographic information was obtained using a questionnaire. A commercial ELISA kit was used to detect HCMV IgG and IgM antibodies. Data analysis was performed using SPSS version 19.

**Results:** The HCMV-IgG and IgM seroprevalence was 93.2% and 4.4% respectively in individuals = 18 years old. Among chronically infected individuals, 4.19% were found positive for IgM. An association between HCMV IgG seroprevalence and

increasing age was observed ( $p=0.002$ ). Females showed higher IgG seroprevalence than males ( $p=0.001$ ). HCMV IgG seroprevalence was higher in married individuals ( $p=0.007$ ). HCMV infection was highly prevalent in lower social class ( $p<0.01$ ). The HCMV IgG seropositivity was higher in married women and increased with gravidity ( $p<0.001$ ). A statistically significant association was observed between IgM seroprevalence and household size. ( $p=0.009$ ).

**Conclusion:** This study provides valuable information about the status and trends of HCMV infection in our population. Our findings indicate that HCMV infection is common that varies considerably among different socio-economic groups in Pakistan.

**Keywords:** Cytomegalovirus, seroprevalence, Pakistan

## 9.27

### IMMUNO-EVOLUTION OF HIV-1 SUBTYPE A IN NEW DIRECTIONS

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**Objective:** In response to selection pressures from the host immune system, the human immunodeficiency virus (HIV) mutates rapidly to amplify escape mutations that are competent in a given host milieu. In a global perspective, this cross-talk between the host immunity and the virus is observed as population-specific amplification of particular HIV subtypes, recombinant forms, or mutation variants. The aim of our study was to examine the course of time-dependent evolution of HIV-1 subtype A on a global level, especially with respect to the dynamics of immunogenic epitopes.

**Method:** For this analysis, we used a total of 1909 HIV-1 subtype A gag sequences representing a timeline from mid 1980s to late 2000s, as well as 19 different countries of Africa, Europe and Asia. Across time, the diversity of subtype A in different countries was analyzed through phylogenetic networks and Bayesian Skyline plots, whereas the genomic variability of subtype A was measured in terms of G->A substitutions and Shannon entropy. Finally, the time-dependent evolution of HIV subtype A Gag epitopes, and their correlation with patients' HLA types was examined.

**Results:** We observed that the HIV subtype A diverged around mid-90s from Kenya, exhibiting an upward trend in genomic variability, which showed a gradual increase that started in the mid-80s, and peaked in the last 5 years (2005-2010). A similar trend was also observed in Gag epitopes, where point mutations gave rise to novel Gag epitopes, evolving especially in the last 5 years.

**Conclusion:** In summary, it appears that as the HIV subtype A epidemics travel around the world, changing population immunogenetic pressures have steered the evolution of this subtype in new directions. This trend is particularly apparent in the genomic and epitope diversity of HIV-1 subtype A Gag sequences.

**Keywords:** HIV evolution, genomic variability, epitopes

### 9.28

#### IMMUNO-MODULATORY EFFECT OF VITAMIN D AND CATHELICIDIN (LL37) IN DONORS WITH DEFICIENT VITAMIN D LEVEL.

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**Objective:** Vitamin D deficiency is highly prevalent in our population and is used as a supplement in both non disease and disease conditions. In this study, we investigated the immunomodulatory role of vitamin D [1,25(OH)2D3] and an antimicrobial peptide cathelicidin (LL37) peptide on secretion of pro-inflammatory (IFN gamma) and down regulatory (IL-10) cytokines in a case control study

**Method:** Cytokine secretion was assessed in whole blood supernatants [pulmonary TB patients (n=22) and healthy controls (n=17)] after 1-3 days of culture in the presence or absence of vitamin D or LL37 peptide. Vitamin D LL37 levels were estimated using ELISA based kits while cytokines were assessed using an in-house Elisa protocol.

**Results:** A high proportion (71.7%) of study participants had deficient (<20ng/ml) plasma vitamin D level (N= 39). Disease stratification [TB(15/22) 68%; EC (13/17) 76%] had no effect on mean plasma vitamin D level (p>0.05). Exogenous stimulation of Vitamin D deficient donors with vitamin D (0.1um) showed opposite cytokine profiles with high IL10 and low IFN $\gamma$  in the presence of vitamin D. Exogenous stimulation with LL37 (20ug/ml) showed a similar effect with IL10 (MWU; p=0.03). Rank order analysis indicated an absence of direct relationship between vitamin D and LL37 in circulation (Wilcoxon sign rank test; p=0.00005).

**Conclusion:** In conclusion, both metabolites possess anti-inflammatory activity in whole blood stimulation assay suggesting a role in reducing pathology of TB infection. These results may have important implications for vitamin D intervention studies in the presence or absence of TB disease.

**Keywords:** Vitamin-D, cathelicidin (LL37), cytokines

### 9.29

#### INCREASED EXPRESSION OF SOCS1 IN EXTENSIVE CASEOUS LYMPH NODE LESIONS FROM PATIENTS WITH TUBERCULOUS LYMPHADENITIS

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**Objective:** The Suppressor of cytokine signaling (SOCS) 1 negatively regulates IFN- $\gamma$  responses through inhibition of STAT1 activation. SOCS3 controls STAT3 activation through different cytokine receptors. The expression of SOCS1 and SOCS3 is altered in tuberculosis but the association between SOCS molecules and effective granuloma formation remains

unexplored. We analyzed the expression of SOCS1, SOCS3 and CXCR3 in tuberculous lymph nodes (LN) with extensive (e-LNTB) and focal (f-LNTB) necrosis and in normal reactive lymph nodes.

**Method:** SOCS1, SOCS3, CD3, CD68 and CXCR3 (a chemokine receptor and marker of Th1 cells) were stained by immunohistochemistry (IHC) in LN from TB patients (n=18) with extensive (e-LNTB, n=8) and focal (f-LNTB, n=10) necrosis and compared with reactive LNs (r-LN, n=8) from control subjects.

**Results:** SOCS1 was highly expressed in patients with tuberculous lymphadenitis with extensive caseation as compared to r-LN. SOCS1 and CXCR3 levels were higher in sections of e-LNTB as compared to f-LNTB. Instead, SOCS3 expression in sections with focal and extensive necrosis was similar.

**Conclusion:** Increased SOCS1 expression in granulomas with extensive caseous necrosis might hamper IFN- $\gamma$  mediated responses, and the bacterial control at the site of infection.

**Keywords:** SOCS1, tuberculosis, granuloma

### 9.30

#### INCREASED PLASMA CONCENTRATIONS OF ICAM-1, VCAM-1 AND E-SELECTIN IN SEVERE PLASMODIUM VIVAX MALARIA PATIENTS AND ITS ASSOCIATION WITH DISEASE SEVERITY

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**Objective:** Plasmodium vivax is the prevalent malarial species accounting for 70% of malaria burden in Pakistan. Though considered benign, severe malaria cases are consistently being reported from this region. However, mechanism of pathogenesis associated with severe vivax malaria is still unknown. Several soluble intracellular adhesion molecules, such as intracellular cell adhesion molecule-1 (ICAM-1), vascular cell adhesion molecule-1 (VCAM-1) and endothelial leukocyte adhesion molecule-1 (E-selectin) have been proposed to be associated with disease severity via leukocyte extravasation into the underlying organs causing organ dysfunction. The goal of this study was to compare the levels of the endothelial activation markers between uncomplicated, complicated and healthy controls to determine its association with disease severity.

**Method:** During January 2010-December 2011, a total of 280 blood samples (80= complicated cases, 100=uncomplicated cases and 100=healthy controls) were collected from patients at the Aga Khan University Hospital, Karachi. The three groups were well defined according to WHO criteria. For both complicated and uncomplicated cases, thick and thin blood smears and PCR was performed to confirm Plasmodium vivax mono-infection. Healthy controls were tested similarly to exclude the presence of infection. Enzyme Linked Immunosorbent assay (ELISA) was performed to measure the levels of ICAM-1, VCAM-1 and E-selectin in complicated, uncomplicated and healthy controls. Kruskal Wallis test was used to determine the significant difference between the three groups. P value <0.05

were considered to be statistically significant. The study was approved by the ethical review committee of AKUH (1811-Pat-ERC-10).

**Results:** The results showed significantly increased plasma concentrations of ICAM-1, VCAM-1 and E selectin in patients with severe malaria compared with those with uncomplicated malaria and healthy controls ( $P < 0.0001$ ) indicating the possible role of these adhesion molecules in causing disease severity in vivax malaria.

**Conclusion:** This is the first study from Pakistan to determine the role of intracellular adhesion molecules in causing severe disease symptoms in vivax malaria. The significance of this study is that it provides an insight into the proposed mechanisms of pathogenesis in vivax malaria and may be helpful for conducting studies targeting these intracellular molecules for therapeutic purpose against malaria.

**Keywords:** Plasmodium vivax, severe vivax malaria, ICAM-1, VCAM-1, E-selectin-1

### 9.31

#### INFANT PULSE OXIMETRY IN PAKISTAN: UTILITY AND FEASIBILITY OF INTEGRATING PULSE OXIMETRY INTO THE ROUTINE ASSESSMENT OF YOUNG INFANTS AT FIRST-LEVEL CLINICS IN KARACHI, PAKISTAN

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**Objective:** Hypoxemia is a frequent finding in sick young infants 0–59 days of age in low-resource settings. Recognition of hypoxemia influences acute medical management decisions. Hypoxemia in young children cannot be reliably detected on the basis of clinical examination alone. Current clinical protocols for the classification of sick young infants have limited accuracy. Triage of young infants may be improved by the integration of simple, low-cost technologies

**Primary:** 1. To estimate the burden of hypoxemia ( $SpO_2 < 90\%$ ) in the study population (prevalence and distribution) 2. To compare the sensitivity and specificity of the existing 7-sign IMNCI algorithm versus the 7-sign algorithm plus PO for prediction of physician-diagnosed severe disease

**Secondary:** 1. To evaluate the between-device concordance for 'spot-check' PO measurements obtained by two different devices used simultaneously or within a short timeframe by first-level health workers. 2. To explore the practical aspects of routine PO implemented by first-level health workers, by assessing usability (the extent to which a device is accepted by target users and applied correctly and efficiently) 3. As an additional aspect of PO usability, efficiency (how fast personnel can obtain a correct single PO measurement) will also be assessed.

**Method:** All 0–59 day old young infants visiting Primary Health Care (PHC) clinics run by AKU's Department of Pediatrics & Child Health in Bilal Colony and Bhains Colony underwent an IMNCI examination and Pulse oximetry measurements from two oximetry devices by up to two different observers. Hypoxemic babies ( $SaO_2 < 90\%$ ) were offered hospital referral

and in case of refusal were offered echo services at AKU.

**Results:** Of a total of 1530 pulse oximetry readings taken over a 5 month period, 19 (1.2%) hypoxemic events were observed by the gold standard device MASIMO alone whereas 71 hypoxemic events were observed by either of two devices used at two centers (Masimo-device A; Nellcor or Tuffsatt-device B). Sensitivity and specificity of Nellcor in comparison to gold standard masimo was 66.66% and 99.37%; that of tuffsatt device was 13.79% and 99.64%. Reliability between community health worker and research assistant for PO with masimo was 100% sensitive and 99.67% specific; that for nellcor was 85.7% sensitive and 100% specific; for tuufsatt it was 100% sensitive and 94.78% specific. The 19 hypoxemic episodes accounted for eight children of whom 3 had serious heart and lung disease; one critical pulmonary stenosis (tetralogy of fallot), second coarctation of aorta and third cystic adenomatoid malformation of lung. All three were operated at AKU and 2 recovered uneventfully. One expired due to complicated post-op course.

**Conclusion:** We found a low frequency of hypoxemia in our kids however, the proportion of hypoxemic kids with serious heart and lung disease requiring intervention was alarmingly high. We are planning a second phase of this study whereby we will screen all sepsis treatment failures in our community clinics for non-infectious co-morbidities like heart and lung conditions requiring intervention.

**Keywords:** Routine pulse oximetry, young infants, feasibility

### 9.32

#### INTEGRATED COMMUNITY-BASED INTERVENTIONS FOR THE PREVENTION AND CONTROL OF INFECTIOUS DISEASES OF POVERTY

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**Objective:** More than 70% of countries and territories affected by Neglected Tropical Diseases (NTDs) are low or lower middle-income countries. Tuberculosis, malaria and HIV/AIDS account for nearly 18% of the disease burden in the poorest countries and can be controlled by simple measures and educational interventions. The purpose of this review was to evaluate the effectiveness of community-based interventions for preventing and controlling IDoP.

**Method:** We considered all available randomized, quasi-randomized and before/after studies on the impact of community-based strategies and interventions on IDoP. IDoP included malaria, tuberculosis and NTDs. Two review authors independently assessed the study quality and extracted data. Results were synthesized by delivery strategies.

**Results:** Community based interventions significantly improved serostatus and ovitrap index for dengue; incidence of cutaneous Leishmaniasis, mean hemoglobin concentration and anemia prevalence for soil transmitted infections, active trachoma and prevalence of schistosomiasis. When comparisons were made for integrated versus non-integrated strategies, non-integrated

interventions were effective in reducing house index, ovitrap index and positive serostatus for dengue. For trachoma and chagas, both integrated and non-integrated strategies were equally effective in reducing the incidence. However, for leprosy, non-integrated strategies were more effective. For tuberculosis, integrated delivery showed improvements in cure (RR: 2.42, 95% CI: 1.69-3.46) and success (RR: 2.82, 95% CI: 1.67-4.76) when compared to non-integrated delivery. For malaria, non-integrated delivery is associated with significant improvements in all-cause mortality (RR: 0.59, 95% CI: 0.49-0.71), and malaria prevalence (RR: 0.35, 95% CI: 0.17-0.70) as compared to integrated delivery.

**Conclusion:** Overall community based interventions were found to be more effective against most of the NTD's. Non-integrated, vertically targeted programs have shown to improve the outcomes better as compared to integrated strategies.

**Keywords:** Infectious diseases, children

### 9.33

#### INVASIVE CANDIDIASIS IN PAKISTAN: CLINICAL CHARACTERISTICS, SPECIES DISTRIBUTION AND ANTIFUNGAL SUSCEPTIBILITY

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**Objective:** Surveillance data on prevalent species and antifungal susceptibility responsible for invasive candidiasis (IC) from Pakistan can contribute to empiric selection of antifungals and monitor resistance trends globally. The objective was to document the epidemiologic data of invasive *Candida* isolates from Pakistan, including species identification and antifungal susceptibility, and risk factors for IC.

**Method:** Identification and antifungal susceptibility of 188 *Candida* isolates against fluconazole, itraconazole, voriconazole, echinocandins and amphotericin were confirmed at Centers for Disease Control and Prevention, USA. Medical records of 96 patients registered with AKUH were reviewed, frequencies of risk factors and their association with adult and pediatric age groups calculated.

**Results:** *Candida tropicalis* was the most common species in adults and children. In children, *C. albicans*, *C. tropicalis* and *C. parapsilosis* predominated. Most isolates had low MICs to fluconazole. Use of health-care devices and stay in special care were the principal risk factors. Significant associations were *C. albicans* IC with paediatric age, and use of beta-lactam inhibitor combinations and vancomycin with adults.

**Conclusion:** Fluconazole can be used as empiric therapy for IC for now but there is need for continued surveillance. Strict antibiotic stewardship and infection control measures may reduce candidemia rates.

**Keywords:** Candidiasis, antifungal susceptibility, risk factors

### 9.34

#### KNOWLEDGE, ATTITUDES AND PRACTICES OF YOUNG ADULTS REGARDING THREE RECENT EPIDEMICS IN PAKISTAN

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**Objective:** An epidemic's outcome is determined by society's reaction to it. Young adults having a significant exposure to data can spread correct information. Little is known about their knowledge and accuracy of information sources. We wanted to ascertain their knowledge, attitudes and practices regarding three recent epidemics; Swine Flu, Avian Flu and Dengue. **Method:** A cross-sectional study was carried out encompassing 426 participants, aged 18 to 25 years, from 5 undergraduate institutions of Karachi. Their knowledge, attitudes and practices were determined using a questionnaire. A scoring criterion, developed with the help of an Infectious Diseases expert, determined accuracy of knowledge of diseases. Questions were ranked according to the importance and awarded 5, 3, and 1 points for correct and 0 for incorrect answers. If their total score was above a pre-set score, the participant was considered knowledgeable.

**Results:** Of 426 participants, 185(43.4%) were males. Mean age was 20.4±1.7 years. 251(58.9%) knew the correct definition of an epidemic. The number of participants with correct knowledge of modes of spread, symptoms and prevention, respectively, for Swine Flu were: 137(32.1%), 210(49.3%) and 227(53.3%); Avian Flu: 113(26.5%), 91(21.4%) and 86(20.6%); Dengue: 390(91.5%), 43(10.1%) and 203(47.7%). 272(63.8%) of the participants helped in spreading information about epidemics. Television and newspapers were identified by 334(78.5%) and 318(74.6%) of the participants as their top sources of information. **Conclusion:** Many young adults do not have accurate knowledge about these epidemics, but a significant percentage helped in spreading information. We recommend educating youth through various sources to enable them in spreading accurate information.

**Keywords:** Swine Flu, Avian Flu, Dengue

### 9.35

#### MANDIBULAR OSTEOMYELITIS CAUSED BY NON-TUBERCULOUS MYCOBACTERIUM IN AN IMMUNOCOMPETENT YOUNG GIRL

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**Objective:** Non-Tuberculous Mycobacterium (NTM), free living organisms are rarely a pathogen in immunocompetent humans; nonetheless, the involvement of mandible in by NTM itself is also very uncommon.

**Method:** We are reporting a case of young girl with mandibular osteomyelitis caused by NTM who presented with left mandibular swelling and painful jaw movement. Bone biopsy showed chronic

granulomatous inflammation and later on cultures grew NTM. She was treated successfully with isoniazid, rifampicin, and azithromycin.

*Results:* NTM is rare in immunocompetent individuals and disseminated infection is usually associated with impaired cell mediated immunity. certain parameters i.e., isolation of NTM from sterile sites (cerebrospinal fluid, bronchoalveolar lavage, pleural fluid); recurrent isolation of same species from a draining sinus has high chance of true NTM disease rather than contamination. approach to therapy depends on species, sensitivities, patient immune status and site of infection. *Conclusion:* Mandibular osteomyelitis because of NTM is extremely rare in immunocompetent. High index of suspicion is needed. Even in-vitro resistance to novel ATT drug does not take into account as majority of patient showed good clinical response.

*Keywords:* Non-Tuberculous Mycobacterium, Mandibular osteomyelitis, In-vitro resistance to ATT

### 9.36

#### MIXED SALMONELLA INFECTION: A CASE SERIES FROM PAKISTAN

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*Objective:* Enteric fever remains a major health problem with high incidence in Pakistan. Poor sanitation and hygienic conditions is the major culprit. Salmonella infection with different strains in the same patient is an unusual finding and has rarely been reported previously. *Objectives:* Reporting two cases of mixed Salmonella infections

*Method:* CASE1: Five year old child presented to local practitioner with fever and vomiting of one week duration. His blood culture was positive for Gram negative rods. Single morphotype of non-lactose fermenting colonies was observed on MacConkey's agar while direct antimicrobial susceptibility from blood culture bottle showed double zone of inhibition around nalidixic acid. On further identification one strain was identified as Salmonella Paratyphi A while other strain was identified as Salmonella Typhi. Both Salmonella serotypes were different in antimicrobial susceptibility. CASE2: Three year old boy, a visitor from Canada to Pakistan presented with high grade fever and weakness for five days. Blood culture grew two strains of Salmonella species. Both have different biochemical profile and sensitivity pattern.

*Conclusion:* In highly endemic area one must be aware of mixed Salmonella infections. As treatment failure may occur due to inappropriate diagnosis and therapy.

*Keywords:* Salmonella, mixed Salmonella infection, Salmonella in Pakistan

### 9.37

#### MIXED SALMONELLA INFECTIONS CAUSED BY TWO SEROTYPES: A CASE SERIES

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*Introduction:* Enteric fever remains a major health problem with high incidence in developing country like Pakistan. Salmonella infection with different strains in the same patient is an unusual finding and has rarely been reported previously.

*Method:* Reporting two cases of mixed Salmonella infections  
*Study Design:* Case report

*Results:* Case 1: Five year old child presented to local practitioner with fever and vomiting of one week duration. His blood culture was positive for Gram negative rods. Two types of non-lactose fermenting colonies observed on MacConkey's agar. Direct antimicrobial susceptibility from blood culture bottle showed double zone of inhibition around nalidixic acid. On further identification one strain was identified as Salmonella Paratyphi A while other was Salmonella Typhi. Both Salmonella serotypes, were different in antimicrobial susceptibility (shown in table). Case 2: Three year old boy, a visitor from Canada to Pakistan presented with high grade fever and weakness for 5 days. Blood culture grew two strains of Salmonella species. Both had different biochemical profile and sensitivity pattern (shown in table).

*Conclusion:* Salmonellae cause a broad range of infections, including gastroenteritis, enteric fever, bacteremia and complications including endovascular infection, osteomyelitis, small intestine perforation etc. Literature search showed very few cases of mixed simultaneous Salmonella infections due to different Salmonella serotypes; Mixed Salmonella infections are frequently missed, particularly in developing countries where disease is endemic. Probably this is due to failure to pick organisms on plate, first due to prior antibiotic therapy and secondly over reliance on serological test. *Conclusion:* In highly endemic area one must be aware of mixed Salmonella infections as treatment failure may occur due to inappropriate diagnosis and therapy

*Keywords:* Salmonella, mixed infection, Pakistan

### 9.38

#### NEONATAL SEPSIS FOLLOWING PROLONGED RUPTURE OF MEMBRANES IN A TERTIARY CARE HOSPITAL OF KARACHI

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*Introduction:* Prolonged rupture of membrane (PROM) is an important modifiable risk factor for early onset neonatal sepsis (EONS) and associated with increase morbidity and mortality among neonates worldwide. *Objective:* The aim of this study was to determine the incidence and PROM associated risk factors for culture proven EONS.



**Method:** We retrospectively reviewed medical records of all neonates born at Aga Khan University Hospital, Karachi over a period of 5 years (2007-2011) with PROM (>18 hours). Data was collected on maternal and neonatal risk factors for EONS. Adjusted logistic regression analysis was applied to assess the association.

**Results:** Incidence of PROM in this neonatal birth cohort was 2.7/100 live birth. A total of 17 (4.0%) cases with blood culture proven bacterial sepsis were identified. *Klebsiella pneumonia* (29.4%) and *Pseudomonas aeruginosa* (23.5%) were the commonest isolates. Maternal fever ( $p < 0.001$ ; adjusted Odds Ratio (AOR) 36.6), chorioamnionitis ( $p < 0.001$ ; AOR 4.1), PROM >48 hrs. ( $p < 0.001$ ; AOR 8.2), neonatal prematurity <34 weeks ( $p < 0.001$ ; AOR 4.1) and low birth weight <1500 grams ( $p < 0.001$ ; AOR 9.8) along with neonatal thrombocytopenia and raised CRP were found as independent risk factors associated with culture proven EONS in PROM. Overall mortality rate was 15 (3.5%).

**Conclusion:** Our data describes PROM associated risk factors for culture proven EONS in Karachi. Preventive measures should focus at recognition of these high-risk infants to improve outcomes. Such approach would have been a safe and cost-effective strategy especially in developing countries.

**Keywords:** neonatal sepsis, prolonged rupture of membranes, blood culture

### 9.39

#### OPIOID RECEPTORS ARE POTENTIAL TARGET IN THE RATIONALE DEVELOPMENT

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**Objective:** *Acanthamoeba* is a free-living protist pathogen that can cause vision-threatening keratitis and fatal amoebic encephalitis. One of the distressing aspects is the limited availability of effective drugs in the successful prognosis of *Acanthamoeba* infections. Here, the effects of loperamide, an opioid mu-receptor agonist were tested on axenically grown *Acanthamoeba* as well as in vitro using human brain microvascular endothelial cells. *Acanthamoeba castellanii* trophozoites were axenically grown at 25°C in peptone-yeast extract glucose (PYG) medium. The trophozoites were incubated with various concentrations of drugs in 24-well plates for up to 48 h.

**Method:** Parasites were observed for cell death using haemocytometer counting and Trypan blue exclusion assays and HBMEC cytopathic effects by measuring lactate dehydrogenase release.

**Results:** The findings revealed that loperamide exhibited potent amoebistatic and amoebicidal effects in a dose-dependent manner. At micromolar concentration, loperamide inhibited *Acanthamoeba*-mediated HBMEC death, while drug alone exhibited minimal HBMEC cytotoxicity.

**Conclusion:** Our preliminary findings suggest that opioid receptor agonist, loperamide, selectively exhibit amoebicidal and

amoebistatic effects and may hold promise in the treatment of *Acanthamoeba* infections.

**Keywords:** *Acanthamoeba* treatment, Opioid receptors, Protists, *Acanthamoeba*

### 9.40

#### PATHOGENS AND MORTALITY OF BLOOD STREAM INFECTION IN NEONATAL INTENSIVE CARE UNIT OF A DEVELOPING COUNTRY.

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**Objective:** Incidence and outcomes of primary BSI have been studied before. However, the data from developing countries, particularly Pakistan remains under-investigated. These countries remain worst-struck in mortality of neonates as they contribute to 98% of 3.9 million annual neonatal deaths worldwide. In her review in 2005, Zaidi et al suggested that neonatal infections in developing countries are particularly high due to poor infection control practices during pregnancy and after birth of the child. While tertiary level care is available it cannot be assumed to be similar as that in a high income country. Therefore a study on the epidemiology and immediate outcomes of blood stream infections was conducted in a neonatal intensive care unit (NICU) of a tertiary hospital in Pakistan.

**Method:** This is a retrospective cohort study conducted over a period of one year ending on 31st December 2010 in the NICU of Aga Khan University Hospital, Karachi, Pakistan. Study populations were all the admission in the NICU from 1st January to 31st December 2011. Blood stream infection (BSI) was defined according to the criteria of CDC/NHSN Surveillance Definition of Healthcare-Associated Infection for children < 1 year of age. Charts were retrieved to identify clinical signs and symptoms of infection, confirm presence of true BSIs and to gather information regarding outcomes. Data was extracted by one of the authors onto a structured questionnaire. Incidence of BSIs, pathogens and outcomes were reported. Statistical analysis was done to calculate incidence proportions and rates. Unadjusted and adjusted hazards of mortality were computed using Cox regression in SPSS version 19.0.

**Results:** There were a total of 492 admissions in the study period. 2 files could not be retrieved. A total of 59 episodes of true blood stream infections among 44 patients (incidence 119 per 1000 live births or 2.7/100 patient days) were recorded. Median time to culture positivity was 8 days (IQR 5-11 days). Majority of infections were caused by gram negative organisms, 43 (69.4%) followed by gram positives 10 (16.1%) with yeasts primarily *Candida albicans* 9 (14.5%) comprising the remaining. 4 (6.8%) infections were poly-microbial. The hazard ratio of mortality in patients with any BSI was 4.7 (95% CI 1.5-14.8) times that of patients without BSI after adjusting for weight at admission. A 1000 g increase in weight was associated with a decreased hazard of mortality by 0.34 (95% CI 0.16-0.8).

**Conclusion:** Concurrent to studies from developing countries the burden of BSI in NICU in terms of numbers and mortality

is high in a tertiary care centre. Unlike NICUs in developed countries, there is a high burden of gram negative infections.

**Keywords:** Blood stream infections, mortality, neonatal

#### 9.41

##### PATHOGENS IN THE STOOL SAMPLES OF CHILDREN LESS THAN 5 YEARS OF AGE WITH MODERATE-TO-SEVERE DIARRHEA (MSD) AND LESS SEVERE DIARRHEA (LSD) IN LOW INCOME SETTLEMENTS OF KARACHI.

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**Objective:** Diarrheal disease remains a leading cause of mortality worldwide, accounting for 4 to 6 million deaths per year. Diarrheal disease is ranked as second most common cause of mortality among children under 5 years of age in developing countries. Most deaths are in young children in developing countries. **Method:** A single, fresh, stool specimen =5 gram was collected and inoculated in Carry Blair medium (CB) and Buffer Glycerol Saline medium (BGS). For the detection of bacterial pathogens the specimens were plated on specific microbiological culture media (XLD, SS, Mac Conkey and TCBS) Alkaline peptone Water (APW) and Selenite F broth tubes were also inoculated. The bacterial pathogens identified included Salmonella, Shigella, Campylobacter, Aeromonas and Vibrio species.

**Results:** A total of 2125 stool samples were collected and analysed. Out of 904 samples from children with MSD, 424 (46.90 %) were culture positive. Campylobacter spp was the most common (51.88%) pathogen isolated, followed by Aeromonas (20.75%), Shigella spp (16.27%), Vibrio spp (5.89%) and Salmonella (5.18%). Out of 1221 samples from children with LSD, 475 (38.90%) were culture positive. Campylobacter was the most common (61.05%) pathogen in this group also, followed by Aeromonas (19.36%) Shigella spp (10.73%) Salmonella (4.63 %) and Vibrio spp. (4.21%).

**Conclusion:** Campylobacter, Aeromonas and Shigella are the commonest pathogens in the stool sample of children with diarrhoea in low income settlements in Karachi.

**Keywords:** MSD, LSD, diarrhea

#### 9.42

##### POPULATION-SPECIFIC EVOLUTION OF HIV GAG EPITOPES IN KENYAN AND PAKISTANI COHORTS

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**Objective:** Under the host selection pressure HIV evolves rapidly to override crucial steps in the antigen presentation pathway. Selection pressures on HIV can be unique depending on the

immunogenetics of host populations. It is therefore logical to hypothesize that the virus evolving in a given population will carry signature mutations that would allow it to survive in that particular host milieu. The aim of this study was to perform a comparative analysis of HIV-1 Gag subtype A sequences from two genetically diverged populations, namely, Kenyan and Pakistani

**Method:** Twenty-nine Kenyan and seventy-four Pakistani samples from HIV-1 subtype A-infected patients were used in this study. The HIV-1 gag region p24 and p2p7p1p6 was sequenced and mutations affecting proteasomal degradation, TAP binding, HLA binding and CTL epitope generation, were analyzed using the in silico tools based on Artificial Neural Network (ANN), Support Vector Machine (SVM) and Quantitative Matrices (QM) algorithms.

**Results:** We found certain mutations unique to either Pakistani or Kenyan cohort that affected the sites for proteasomal degradation, TAP binding, and HLA binding. As a consequence of these mutations, epitope pattern in each of these cohorts was altered.

**Conclusion:** Unique selection pressures can steer the direction of viral epitope evolution in the host populations. Population-specific HIV epitopes have to be taken into account while designing treatment as well as vaccine for HIV.

**Keywords:** HIV evolution, Antigen presentation pathway, Immune escape mutations

#### 9.43

##### PSEUDOMONAS NECROTIZING FASCIITIS IN AN OTHERWISE HEALTHY INFANT

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**Objective:** Necrotizing fasciitis [NF] is a severe soft tissue potentially fatal bacterial infection. It frequently affects a previously healthy children results in significant rate of mortality as well as morbidity if there is any delay in diagnosis and treatment. We are reporting here a case of a six month old female infant who was previously well, diagnosed as Necrotizing Fasciitis secondary to Pseudomonas aeruginosa - rare cause of NF in an otherwise healthy infant. A Six months old female infant presented with the 7 days history of high fever and rashes over the both thighs. Local examination revealed erythema fulminans measuring 5 X 5 cm over right leg and left thigh (3x5cm) with well circumscribed margins and surrounding blisters. Blood culture grew Pseudomonas aeruginosa sensitive to meropenem. X-ray thigh showed extensive hyperemic changes in the soft tissues with blurring of the inter-muscular plains. Magnetic resonance imaging lower limbs revealed extensive edema of skin, subcutaneous tissue and deep fascia. There were multiple areas of negative enhancement in the deep subcutaneous fascia of both lower limbs representing small collections. Drains were placed on both thighs which were removed after 5 days. I/V meropenem were continued for three weeks along with daily wound care. Child was discharged subsequently in a stable state with planning of skin graft in the future.

**Conclusion:** NF is a life-threatening condition. Its early and correct diagnosis is important in order to improve outcome. Antibiotics and surgical debridement are important part of its management.

**Keywords:** Necrotizing fasciitis, infant, pseudomonas aeruginosa

#### 9.44

##### RAPID DETECTION OF CRIMEAN-CONGO HEMORRHAGIC FEVER VIRUS IN PAKISTAN

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**Objective:** To present 6 year data (2007-2012) of CCHFV detection at Aga Khan University Hospital and to underscore the utility of real-time PCR based diagnosis. 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. Rapid diagnosis is important for management of CCHF disease transmission.

**Method:** A total of 195 samples were tested for CCHFV RNA by PCR at the AKUH during 2007-2012 (Aug). Viral RNA was extracted, reverse-transcribed and complementary DNA was amplified using PCR primers targeting the S segment of the CCHF genome. The nested PCR method allows detection of CCHFV RNA and reporting within 48 h. The real-time PCR allows reporting within 24h.

**Results:** A total of 195 samples were tested for CCHFV RNA by PCR of these, 25 (13%) were found to be positive. The number of positive cases were 0/26 in 2007; 1/9 in 2008; 3/33 in 2009; 7/62 in 2010; 5/35 in 2011 to 10/30 in 2012 (up until August). Based on the nested PCR method used from 2006-2011 (May) we reported a positivity rate of 8%. Using the real-time PCR method from June 2011 – August 2012 we reported 22% to be positive for CCHFV RNA.

**Conclusion:** We observe an increase in CCHFV samples received and in CCHF positive cases at AKUH. Rapid diagnosis serves an important need for rapid differentiation of viral hemorrhagic fevers in Pakistan

**Keywords:** CCHFV, PCR, rapid detection assay

#### 9.45

##### RESVERATROL AND DE-METHOXY CURCUMIN EXHIBIT ANTI-ACANTHAMOEBIC PROPERTIES

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**Objective:** Acanthamoeba is an opportunist protist pathogen that is known to infect the cornea to produce eye keratitis and the central nervous system to produce fatal granulomatous encephalitis. Early diagnosis, followed by aggressive treatment

using a combination of drugs is a prerequisite in successful treatment but even then, prognosis remains poor due to lack of effective drugs. The overall aim of the present study was to determine the anti-Acanthamoebic potential of natural compounds, resveratrol and demethoxy curcumin. **Method:** To determine the anti-acanthamoebic potential of natural compounds, resveratrol and demethoxy curcumin viability assays were performed with Trypan blue exclusion method. Adhesion and cytotoxicity assays were performed using primary human brain microvascular endothelial cells, which constitute the blood-brain barrier, using Acanthamoeba with or without resveratrol and demethoxy curcumin. Zymographic analysis was also performed to determine the extracellular proteolytic activity of Acanthamoeba when incubated with resveratrol and demethoxy curcumin.

**Results:** Pre-exposure of organisms to 100µg resveratrol and demethoxy curcumin prevented amoeba binding by 57% and 73% respectively, while cytotoxicity of host cells was inhibited by 86% and 40% respectively. In an assay for viability of amoebae in the absence of host cells, resveratrol and de-methoxy curcumin exhibited significant amoebicidal effects (23% and 25% respectively) at 100µg concentrations (P<0.01).

**Conclusion:** Neither resveratrol nor demethoxy curcumin had any effect on the proteolytic activities of Acanthamoeba. Of both compounds, resveratrol is of most interest for further investigation, because of the selective toxicity of resveratrol on Acanthamoeba but not the human brain microvascular endothelial cells.

**Keywords:** Acanthamoeba, resveratrol, demethoxy curcumin

#### 9.46

##### SCREENING FOR VIRAL NUCLEIC ACID IN BLOOD DONATIONS USING ROCHE COBAS S201 TAQSCREEN MPX SYSTEM

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**Objective:** To examine overall performance and suitability of the system for screening blood donations aiming to improve transfusion safety

**Method:** Cobas s201 platform consists of automated pooling of blood donations, nucleic acid preparation, amplification and detection using Cobas TaqMan analyzer. Samples were tested in pool of six and resolution of positive pool was performed by single donation testing.

**Results:** A total of 26,392 blood donations were screened between April 2011 and April 2012, amongst them 919 donors were serology positive for the following markers; HBsAg 308 (33.5%), anti-HCV 445(48%), anti-HIV, 25(3%), malaria 17(2%), and VDRL 124(13.5%). The remaining 25,473 serology negative donors were NAT tested on Cobas S201 platform. Taqscreen MPX System detected 34 positive pools, which were confirmed by resolution testing giving yield of 0.13%. The donors were informed of their results and were counseled for further management of their disease.

**Conclusion:** Implementation of NAT test for screening of blood donations would minimize the spread of viral infections by blood transfusion and improve safety of blood products.

**Keywords:** Blood donors, window period, Cobas S201

#### 9.47

##### SCREENING OF BIOACTIVE COMPOUNDS WITH ANTIMICROBIAL PROPERTIES FROM SELECTED SPECIES OF MARINE INVERTEBRATES INHABITING MANORA CHANNEL, KARACHI, PAKISTAN

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**Objective:** The marine life is almost 80% of the world biota and is a good source of unique natural products. More or less 10,000 pharmacologically bioactive compounds have been derived from tunicates, sponges, soft corals, sea hares, nudibranchs, bryozoans, sea slugs and other marine organisms. The bioactive compounds extracted from many classes of molluscs exhibit antitumor, antileukemic, antibacterial and antiviral properties. The recent development in research on multi-drug-resistant bacteria suggests that animals living in unsanitary and unhygienic conditions have developed ways of protecting themselves against pathogenic microorganisms. Due to the emergence of antimicrobial resistance against antimicrobial compounds, the need to search for new antibiotic compounds originating from natural resources is emphasized. Therefore the aim of our study was to screen bioactive compounds with antimicrobial properties from selected species of marine invertebrates inhabiting Manora Channel, Karachi, Pakistan. In the present study the antimicrobial activity of different organs such as gills, gastrointestinal tract, reproductive organs and hemolymph of *Perna viridis* and *Nerita* sp. was investigated against *E.coli* K1. The findings revealed that *Perna* Gills and *Nerita* sp. gonads have potent antibacterial activity against neuropathogenic *Escherichia coli* K1.

**Keywords:** Antimicrobial properties, natural products, marine organisms

#### 9.48

##### SEASONAL PREVALENCE OF VIBRIO CHOLERA IN UNDER 5 YEARS OF CHILDREN IN PERI-URBAN AREAS OF KARACHI

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**Background:** *Vibrio cholera* thrives in water ecology, particularly surface water. The primary connection between humans and pathogenic strains is through water, particularly in low resource settings where availability of clean water is scarce. Cholera is a major cause of epidemic diarrhea throughout the developing world. Cholera epidemics are predominant in the monsoon seasons (July till September) as compared to dry season & in

areas where there is disruption of water and sanitation systems. This case control study was conducted to determine the seasonal prevalence of *Vibrio cholera* in peri urban low income areas of Karachi where basic infrastructure is not available. **STUDY DESIGN:** This was a community based matched case –control study to help quantify the burden, microbiologic etiology, & sequelae of diarrheal diseases among 0-59 months age children living in peri urban areas of Karachi. This study is carried out in two parts, one from March 2008 till March 2011 and another from Nov 2011 till Oct 2012.

**Method:** In this case control study a whole stool specimen =5 gram was collected and inoculated in Carry Blair medium (CB) and Buffer Glycerol Saline medium (BGS). For the isolation of vibrio, stool sample was inoculated on Thiosulfate-citrate-bile salts-sucrose agar which is used as a selective medium for *Vibrio cholera* and in Alkaline peptone Water (APW). Identification was done according to standard protocols including biochemical tests & antimicrobial sensitivities performed by Kirby Bauer technique. Serogroups were identified by slide agglutination with polyvalent antisera.

**Results:** Total 139 *Vibrio cholera* cases were isolated in these five years. Highest number of *Vibrio cholera* cases being isolated in the month of May 26(18.70%) followed by month of August 19(13.66%), September 18(12.94%), June 17(12.23%) & July 16(11.51%) respectively. Lowest Number of *Vibrio cholera* cases were isolated in January 2(1.43%), Dec 2(1.43%), & in March 3(2.51%).

**Conclusion:** Highest number of cases of *vibrio cholera* were identified during the monsoon season. This may be attributed to increased water temperature and land run-off with urban sewage effluents leading to greater breakdown in sanitation enhancing cholera risk.

**Keywords:** Monsoon season, sanitation system, diarrhea

#### 9.49

##### THE FREQUENCY OF VARIOUS SPECIES OF MALARIAL PARASITES: THEIR CLINICAL AND HEMATOLOGICAL FEATURES AMONG CHILDREN UNDER 14 YEARS OF AGE.

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**Objective:** Malaria is the world's most important parasitic infection which poses major health challenges. Despite years of continual efforts, malaria is still a threat to over two billion people, representing approximately 40% of the world's population in about 100 countries. **Objective:** To estimate the frequency of various species of malarial parasites and their clinical and hematological manifestations in children under 14 years of age.

**Method:** It was a descriptive cross sectional study conducted at clinics and emergency room of Aga Khan Hospital Karachi for six months. One hundred and eighty six patients met the selection criteria and were included in the study. The type of plasmodium species was recorded and clinical and hematological features were recorded by the principal investigator of different types of plasmodium species. In addition other relevant information such as age and gender were recorded in the proforma.

**Results:** Our study found that Plasmodium Vivax was found in 138 (74.2%) of the patients and plasmodium Falciparum in 35 (18.8%). Almost 23 (12.4%) had shown mixed type of plasmodium species. Most common clinical manifestation was fever > 38°C in 184 (98.9%) of the patients, while 167 (89.8%) of the patients had thrombocytopenia (platelets <150x10<sup>3</sup>/μL).  
**Conclusion:** The frequency and types of plasmodium, along with clinical and hematological manifestations have shown prevalence that is in line with the national and international studies, with obvious acceptable differences. We recommend further studies with large sample sizes to reach the firm conclusion.

**Keywords:** Malaria, Pakistan, children

### 9.50

#### THE LEGACY OF HIV EPIDEMIC IN PAKISTAN: NEXT STOP, CHILDREN

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**Case Report:** The first case of HIV in Pakistan was reported in 1987. Since then the prevalence of the infection has been steadily rising. In the high-risk groups, which include injection drug users (IDUs), men who have sex with men (MSM), etc., the prevalence of HIV can be anywhere from 5% to over 20%. Our phylogenetic analyses show that the HIV infection that, in the early 1990s, was brought into the country by the Pakistanis deported from the United Arab Emirates (UAE) was transmitted to the IDUs and MSM. The virus was subsequently transmitted to the MSM's female spouses, who vertically transmitted the infection to their offspring. Overall, the phylogeny of HIV samples from these high-risk groups suggests the following route of transmission: UAE Deportees --> IDUs --> MSM --> female spouses --> children. The HIV epidemic in Pakistan is now being bridged into the female spouses of bisexual MSM and is increasingly turning up in their preadolescent children. The HIV policy in Pakistan needs to focus on holes in the healthcare of HIV-positive individuals, including IDUs, MSM, and pregnant women, who do not have optimum access to the means by which they can treat, and prevent further transmission of, HIV infection.

**Keywords:** HIV, Children, Epidemic

### 9.51

#### GRAZING PREFERENCES OF ACANTHAMOEBA

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**Objective:** *Acanthamoeba* are free-living protists that play an important role as predators, controlling microbial communities in the environment but their preference for bacterial uptake is

not clear. Given the abundance of Gram-positive bacteria in the environment, it was hypothesized that *Acanthamoeba* prefers to graze upon them. The aim of this study was to find out the feeding patterns of *Acanthamoeba*. Growth of *Acanthamoeba* was determined using Gram-negative *Escherichia coli* K1 and *Pseudomonas aeruginosa* as well as Gram-positive *Bacillus* species and *Corynebacterium*.

**Method:** Briefly, 2x10<sup>5</sup> amoebae were incubated with 10<sup>8</sup> heat-killed bacterial CFU mL<sup>-1</sup>. Co-cultures were incubated for up to 24 hours at 30°C. Following this incubation, amoebae were enumerated by haemocytometer counting.

**Results:** The findings revealed that *Acanthamoeba* exhibited optimum growth when incubated with heat-killed *Pseudomonas aeruginosa*. The number of amoebae increased from 2x10<sup>5</sup> to 5.37x10<sup>5</sup> after 24 hours. For *E. coli*, the number of amoebae increased from 2x10<sup>5</sup> to 4.7x10<sup>5</sup>. In contrast, for *Bacillus* sp. the number of amoebae increased from 2x10<sup>5</sup> to 3.4x10<sup>5</sup> and for *Corynebacterium* the number of amoebae increased from 2x10<sup>5</sup> to 2.9x10<sup>5</sup>.

**Conclusion:** Overall, these findings suggest that *Acanthamoeba* have preference for Gram-negative bacteria as food source as compared to Gram-positive bacteria. The molecular basis of this preferential feeding is under investigation.

**Keywords:** *Acanthamoeba*, grazing activity, *Pseudomonas aeruginosa*

### 9.52

#### TO INVESTIGATE THE KNOWLEDGE, ATTITUDES AND PERCEPTIONS OF CONDOM USE IN HIV POSITIVE AFRICAN MEN IN THE SHAURI MOYO COMMUNITY, KENYA

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**Introduction:** The number of people living with HIV in Kenya includes about 1.1 million adults between 15 and 49 years, another 60,000 age 50 and over. Numerous studies have shown that condoms, if used consistently and correctly, are highly effective at preventing HIV infection. Objective. The purpose of my study was to understand better the perceptions of condom use in the HIV positive patients' of my community. Therefore, I undertook a study that seeks to investigate the knowledge, perceptions and attitudes of HIV positive African men in the Shauri Moyo community regarding the use of condoms as a preventive measure for HIV transmission.

**Method:** The following study paradigms were used. A. Selective in-depth face-to-face interviews and, B. Self-responder, semi-structured questionnaires.

**Results:** Data was collected from a cohort of adult men from the ages of 18 onwards. This age group was chosen as it did not require parental or guardian consent. The studies were conducted at a VCT site and Primary care clinic in the Shauri Moyo community. Upon completion, 19 face-to-face interviews were conducted and a total of 241 questionnaires were successfully filled and received. Questioning in this area yielded "rich" data on the way people perceived and felt when they used condoms and how attitudes and knowledge influenced the use or non-use of condoms. Research ethical considerations were maintained

and approval was obtained from the Research Ethics Committee of the University of Stellenbosch, South Africa. *Conclusion:* The emerging categories and themes from the interviews contributed towards deeper understanding into the knowledge, attitudes and perceptions of consistent and inconsistent use of condoms being used as a means of prevention against HIV transmission. The survey (n=241) confirmed that despite 85.1% felt that there was need to use condoms, 68.5% reported “always” using condoms, 12.7% reported “sometimes” and 17.7% reported “never” using condoms.

*Keywords:* HIV+ve, condoms, African Men

### 9.53

TRENDS OF ANTIBIOTIC SUSCEPTIBILITY AND INCIDENCE OF LATE ONSET KLEBSIELLA PNEUMONIAE NEONATAL SEPSIS OVER A SIX YEAR PERIOD IN A NEONATAL ICU IN KARACHI, PAKISTAN.

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*Objective:* The incidence, change in antibiotic susceptibility along with mortality associated risk factors for late onset Klebsiella pneumoniae (L-Kp) sepsis over the last six years (2006-2011) in neonatal ICU from developing country. *Method:* Medical records of neonates with discharge diagnosis of sepsis due to L-Kp were retrieved. Demographic features, gestational age, date and year of admission and antibiotic susceptibility of isolates and discharge disposition were recorded. L-Kp incidence per 1000 NICU admissions and risk factors of mortality due to L-Kp sepsis by using adjusted odds ratio were calculated.

*Results:* During the six year period, One-hundred four of 2768 neonates developed L-Kp sepsis. The overall incidence of L-Kp sepsis was 3.7% (37/1000 NICU admissions); highest being 53/1000 in 2010. Majority of cases were males (n=64;62%); premature and very low birth weight (n=68;65%). More than 80% of isolates were resistant to ampicillin+clavulanic acid, gentamicin, aztreonam and cephalosporins. An increasing trend of resistance for amikacin, fluoroquinolones, piperacillin/tazobactam and Carbapenem was observed. In 2010 & 2011 almost half (19/44; 43%) of the isolates were carbapenem resistant. Seventeen (16%) neonates died; being a male {p=0.06; AOR=9.2 (1.3-66.9)}, extremely low birth weight {p=0.01; AOR=6.1 (0.8-44.4)}, severe thrombocytopenia {p=0.07; AOR=3.9 (1.2-13.0)} and failure to achieve microbiological clearance {p<0.001; AOR=19.6(4.0-98.0)} were significantly associated with mortality due to L-Kp sepsis.

*Conclusion:* There is a rise in carbapenemase resistant strains L-Kp highlighting the need for antimicrobial stewardship and infection control measures to limit the spread of these strains.

*Keywords:* Late Onset Klebsiella pneumoniae; incidence; NICU; Carbapenem resistance, incidence; NICU; Carbapenem resistance

### 9.54

VACCINES FOR THE PREVENTION OF DIARRHEA DUE TO CHOLERA, SHIGELLA, ETEC AND ROTAVIRUS

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*Objective:* Diarrhea is a leading cause of mortality in children under 5 years along with its long-term impact on growth and cognitive development. Despite advances in the understanding of diarrheal disorders and management strategies, globally nearly 1.4 million children die annually as a consequence of diarrhea. An estimated 1 million deaths and 165 million cases of dysentery annually occur due to Shigella, 610,000 deaths under the age of five due to Rotavirus and 120,000 deaths due to Cholera. *Method:* We conducted a systematic review of the efficacy and effectiveness studies. We used a standardized abstraction and grading format and performed meta-analyses for all outcomes with more than two studies. The estimated effect of cholera, shigella, ETEC and rotavirus vaccines was determined by applying the standard Child Health Epidemiology Reference Group rules

*Results:* A total of 24 papers were selected and analyzed for all the four vaccines. Based on the evidence, we propose a 52% reduction in mortality attributable to cholera and a 74% mortality reduction in rotavirus specific mortality. We did not find a suitable outcome to project mortality reductions for ETEC. For shigella vaccines, the evidence had limitations and could not be generalized to all shigella strains.

*Conclusion:* Vaccines for these four organisms have the potential to reduce diarrhea morbidity and mortality burden in endemic areas if implemented at a larger scale and adequate coverage levels ensured.

*Keywords:* Vaccines, diarrhea, children

### 9.55

WAR OF THE MICROBIAL WORLDS

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*Objective:* As microbes compete for space and nutrients, many organisms have developed the ability to kill or inhibit growth of competing microbes by producing molecules, called as “antimicrobials” or secondary metabolites, commonly known as “antibiotics”. Here, free-living amoeba, Acanthamoeba and bacteria Enterobacter sp. and E. coli K1 were investigated for their antibacterial and anti-amoebic activities, respectively. *Method:* Acanthamoeba conditioned medium was incubated with Acinetobacter sp. Pseudomonas aeruginosa, Staphylococcus aureus (MRSA) and vancomycin-resistant Enterococcus faecalis (VRE) in 96 well plates for 18 hours. Next day cultures were plated and subsequently colonies were counted. To determine the anti-acanthamoebic potential of Enterobacter sp. and E. coli K1 conditioned media, viability assays were performed with

Trypan blue exclusion method. For characterization of active compounds, conditioned media were treated with protease and filtered through 5kDa and 10kDa size-exclusion spin columns. **Results:** Conditioned medium from *Acanthamoeba* showed remarkable bactericidal properties against MRSA but had no effect against *Acinetobacter* sp. *Pseudomonas aeruginosa* and VRE. *Acanthamoeba* conditioned medium showed no cytotoxicity in vitro when tested against human brain microvascular endothelial cells (HBMEC) using lactate dehydrogenase assay. The bactericidal activity was heat resistant but sensitive to protease degradation and partly blocked by 5kDa size-exclusion spin column. Similarly *Enterobacter* sp. and *E. coli* K1 conditioned media showed potent amoebicidal activities but no cytotoxicity to HBMEC cells. The amoebicidal activity was heat- and protease-resistant and retained in the eluate after passing through 5kDa size-exclusion suggestive of active metabolites. Further work is in progress to determine the efficacy of these molecules in vivo.

**Keywords:** *Acanthamoeba*, *Enterobacter* sp., *E. coli* K1

#### 9.56

##### HYDATID CYST: CAN HISTOLOGY PREDICT RECURRENCE?

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**Background and Objective:** Hydatid cyst disease is a familiar condition with a long history from the time of Hippocrates, and was first described in the 17th century by Thebesius. Humans acquire the parasite through fecal-oral contact. Pakistan is one of endemic regions. Most frequently the cysts arise in the liver and lungs; however, any other organ may also be involved, which may make both diagnosis and treatment more complex. The objective was to determine the clinicopathological characteristics of hydatid disease and correlation of recurrence with histological presence of scoleces and calcification. **Methods:** All cases of hydatid disease cases diagnosed during 2002 to 2012 at Section of Histopathology, Department of Pathology & Microbiology, Aga Khan University were included. **Results:** Total 242 cases of hydatid disease were studied. Mean age  $\pm$  SD was  $33.5 \pm 15.86$  years. Average size of lesion was 8cms. Male: female ratio was 1:1.31. The most common site was liver (38%), 7 cases of liver hydatid cyst were also involving other organs (lung, spleen and kidney). 33 cases involved lung, other sites included rare sites such as brain and spinal cord, abdomen, spleen, breast, ovary, uterus, kidney, muscle and soft tissue, orbit, pericardium and urinary bladder. Histologically scoleces were present in 111 cases (45.9%) and calcification was absent in 218 (90%) cases. Follow-up was available in 160 cases and recurrence was seen in most of cases with histologically positive scoleces, which also reached statistical significance. Calcification was not associated with the presence or absence of recurrence.

**Conclusion:** Hydatid disease is common and involves a variety of sites. Recurrence is strongly associated with the scoleces

present in histological sections. Long-term and aggressive medical treatment along with follow-up of reasonable duration is suggested in these cases.

**Keywords:** Hydatid cyst, scoleces, recurrence

#### 9.57

##### EXTENT OF SPREAD OF SUPER-BUGS IN PAKISTAN: A MULTICENTER STUDY FROM PAKISTAN

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**Objective:** The purpose of this study was to assess the extent of the burden of carbapenemases including NDM-1 among the enterobacteriaceae from different centers of Pakistan. **Methods:** 114 carbapenem resistant enterobacteriaceae (CRE) isolated from different clinical samples from 19 hospitals of major provinces of Pakistan were prospectively collected over the period from June 2009 to July 2010. MICs for meropenem were determined by E-test. Presence of gene for carbapenemases class A KPC enzymes and class B metallo-beta-lactamase (*bla*<sub>NDM-1</sub>, *bla*<sub>IMP-1</sub>, and *bla*<sub>VIM-1</sub>) were detected using PCR. Variable number tandem repeats (VNTR) assay was performed on selected *Klebsiella pneumoniae* isolates yielded from Sindh on 12 loci to assess clonality.

**Results:** Enterobacteriaceae isolates yielded from clinical samples received from different hospitals throughout the country from 10 hospitals of Sind, 2 from Punjab, one from Baluchistan were included in the study. Majority of clinical isolates were yielded from blood cultures 57.9% (n=62). Neonates and patients greater than 60 years were most frequently affected patients. Gene for NDM-1 enzymes was detected in 94% (n=107) of clinical isolates. Among the bacterial pathogens 63.55% were *Klebsiella pneumoniae* (n=68) followed by *E. coli* 30.8% (n=33). MIC of meropenem tested by E-test strip on isolates positive for NDM-1 was detected to be resistant in  $>32\mu\text{gm/ml}$  in 33 isolates. None of the clinical isolates were found positive for *bla*<sub>IMP</sub>, *bla*<sub>VIM</sub> and *bla*<sub>KPC</sub> enzymes.

**Conclusion:** NDM-1 is the most common enzyme responsible for carbapenem resistance among the enterobacteriaceae in Pakistan.

**Keywords:** NDM-1, carbapenemases, Pakistan

**9.58****SOCS1 GENE EXPRESSION IS INCREASED IN SEVERE PULMONARY TUBERCULOSIS**

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**Objective:** Suppressors of Cytokine Signaling (SOCS) molecules inhibit cytokine signaling and may regulate protective immunity in tuberculosis (TB). We investigated the association of SOCS with disease progression in patients with pulmonary TB. **Methods:** We studied peripheral blood mononuclear cells (PBMCs) and T cells from patients with pulmonary TB (TB, n=33) and healthy endemic controls (EC, n=15). Cases were stratified into those with moderately advanced (mod-PTB) or far advanced disease (adv-PTB). IFN- $\alpha$ , SOCS1 and SOCS3 gene expression was determined by RT-PCR. Concentrations of IFN- $\alpha$ , IL6, TNF $\alpha$  and IL10 were measured in culture supernatants using Human Cytokine Flow Cytometric Bead Array (CBA) from BD Biosciences Ca, USA. Statistical analysis was performed using the Mann-Whitney test.

**Results:** Levels of IL6 (p=0.018) and IL10 (p=0.013) were found to be elevated in PBMC supernatants from TB patients as compared with EC. SOCS1 mRNA gene expression in T cells from TB patients was increased as compared with that of EC (p=0.02). In addition, levels of SOCS1 mRNA transcripts were found to be elevated in PBMCs of adv-PTB as compared with mod-PTB (p=0.008) cases.

**Conclusions:** Our data show that raised SOCS1 levels are associated with increased disease severity in TB. As SOCS1 regulates IFN- $\gamma$  driven immunity and SOCS1 can be further up-regulated by IL6 levels, the increase of SOCS1 in severe disease indicates a mechanism by which mycobacteria impede disease control in tuberculosis.

**Keywords:** SOCS1, pulmonary tuberculosis

**9.59****ROLE OF BIOMARKERS IN PREDICTING SEVERITY OF P.FALCIPARUM MALARIA IN ENDEMIC REGION**

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**Objective:** In Plasmodium falciparum infections, the balance between pro and anti-inflammatory cytokines plays a major role in determining disease severity. We aimed to determine the baseline levels of cytokines and chemokines in uncomplicated and severe malaria patients versus healthy controls. **Methods:** All patients included in the study attended Aga Khan university Hospital (AKUH) with complaints of fever. Twenty two malaria patients with microscopy confirmed P.falciparum infection and eight healthy endemic controls were selected for

analysis. Study subjects were stratified in three categories: uncomplicated malaria (UM=12), severe malaria (SM=10) and healthy controls (HC= 8) with no recent history of malaria. The plasma concentration of cytokines (TNF- $\alpha$ , IL-6 & IFN- $\gamma$ ) and chemokines (CXCL-9 & CXCL-10) were evaluated in patients and healthy controls.

**Results:** Significantly lower levels of TNF- $\alpha$  were observed in HC (28 pg/ml) as compared with UM (389 pg/ml, p = 0.020) and SM (771 pg/ml, p = 0.004) groups. CXCL-9 levels were significantly raised in SM as compared with UM cases (p = 0.012). CXCL-10 levels were significantly lower in HC group compared to UM (550 pg/ml, p = 0.001) and SM (1480 pg/ml, p = 0.01).

**Conclusions:** This is the first preliminary report on markers of pathogenesis in P.falciparum from Pakistan demonstrating higher CXCL-9 levels in patients suffering from severe malaria compared to uncomplicated. Increased levels of CXCL-9 may suggest their role in severe malaria pathogenesis. This may be representative of the increased disease pathology observed in progressive malaria

**Keywords:** Severe malaria, cytokines, pathogenesis, Pakistan

**9.63****SUSCEPTIBILITY TESTING OF EXTENSIVELY DRUG RESISTANT AND PRE-EXTENSIVELY DRUG RESISTANT MYCOBACTERIUM TUBERCULOSIS AGAINST LEVOFLOXACIN, LINEZOLID AND AMOXICILLIN-CLAVULANATE**

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**Objective:** Emergence and increasing incidence of extensively drug resistant (XDR) TB has been reported from Pakistan. To determine the susceptibility frequencies of drug resistant *Mycobacterium tuberculosis* (MTB) against levofloxacin, linezolid and amoxicillin/clavulanate

**Methods:** All susceptibilities were performed on Middlebrook 7H10 agar. LVX critical concentration (1 $\mu$ g/ml) was used for determining susceptibility, whereas for LZD and AMC minimum inhibitory concentrations (MICs) were performed. *Mycobacterium tuberculosis* H37Rv was used as a control strain. **Results:** A total of 102 MTB isolates (XDR: 59; pre-XDR: 43) were tested. Resistance to LVX was observed in 91.2% (9/102) of the strains tested. Using an MIC value of 0.5  $\mu$ g/ml as cutoff, resistance to LZD was noted in 6% (6/102) of the isolates. Although sensitivity breakpoints are not established for AMC, the MIC values were high (>16 $\mu$ g/ml) in 97.1% (99/102) of the isolates tested.

**Conclusion:** Our results demonstrate that LZD may be effective for the treatment of XDR and difficult to treat pre-XDR cases from Pakistan. High resistance rates against LVX and AMC in the strains tested suggest that these agents cannot be recommended for inclusion as part of standardized treatment regimen for drug resistant tuberculosis cases from this area.

**Keywords:** Extensively drug resistant (XDR) TB, treatment, mycobacterium tuberculosis



### 9.65 MYCOBACTERIUM TUBERCULOSIS CAS1 LINEAGE STRAINS REVEAL LOWER 15 MIRU LOCI BASED DIVERSITY THAN NON-CAS1 ISOLATES

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**Objective:** Mycobacterial Interspersed Repetitive Unit-Variable Number of Tandem Repeat (MIRU-VNTR) typing is a useful tool to study transmission dynamics of Mycobacterium tuberculosis (MTB) strains.

**Methods:** Discriminatory power of MIRU typing however varies with strain types and according to geographical region. Central Asian Strain1 (CAS1) lineage of MTB is predominant in South Asia. The discriminatory power of MIRU-VNTR 15 loci typing was therefore evaluated for MTB strains (n=200) from different regions of Pakistan including CAS1 (38%), Beijing (5%) and other non-CAS1 strains (57%).

**Results:** The average Hunter Gaston Discriminatory Index (HGDI) for 15 loci MIRU typing of all study isolates was 0.632. MIRU HGDI for lineage strains of CAS1, Non-CAS1 and Beijing strains was 0.469, 0.677 and 0.687 respectively (p-value= 0.02). Allelic diversity analysis revealed that eight loci (MIRU 10, 16, 26, 31, Mtub 04, ETR-A, 4156, and Qub 26b) were highly discriminatory with HGDI > 0.6. Based on these 8 loci the average HGDI of all strains was 0.762, whereas for CAS1, Non-CAS1 and Beijing strains it was 0.634, 0.791 and 0.757 respectively.

**Conclusions:** An overall lower discriminatory index for CAS1 using both 15 and 8 loci based analysis suggests a lower genetic diversity in these isolates in comparison to non-CAS1 and Beijing strains. Our data further suggests that beside epidemiological studies MIRU-VNTRs may also be used for phylogenetic investigation of CAS1 strains. Eight highly discriminating MIRU loci identified may be helpful in monitoring transmission of MTB strains in regions with high CAS1 prevalence.

**Keywords:** Mycobacterium tuberculosis, central asian strain1, MIRU-VNTR, Pakistan

### 9.66 GENETIC DIVERSITY OF *PLASMODIUM VIVAX* CLINICAL ISOLATES FROM SOUTHERN PAKISTAN USING PVCSP AND PVMSP1 GENETIC MARKERS

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**Objectives:** The purpose of this study was to determine circulating genotypes of *P.vivax* using polymorphic loci of gene encoding antigens *pvcsp* and *pvmssp1*.

**Methods:** During January 2008- May 2009, a total of 250 blood samples were collected from patients tested slide positive for *P.vivax* mono-infections, at the Aga Khan University Hospital, Karachi, or its collection units located in Baluchistan and Sindh

province. Nested PCR/RFLP was performed, using *pvcsp* and *pvmssp1* markers to detect the extent of genetic diversity in clinical isolates of *P.vivax* from Southern Pakistan. **Results:** A total of 227/250 (91%) isolates were included in the analysis while the remaining were excluded due to negative PCR outcome. In *pvmssp1*, a total of 87 genotypes were detected while in *pvcsp*, 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. Using *pvmssp1* marker, one recrudescence (treatment failure) and three relapse cases were identified with the help of genotyping pattern. Thus, *pvmssp1* marker can serve to be extremely useful for conducting drug efficacy trials where differentiation between recrudescence and relapse is an important parameter. Furthermore, baseline epidemiological data on the prevalent *pvcsp* and *pvmssp1* genotypes can help in the designing and development of CSP or MSP based vaccine that is effective against *P.vivax* isolates circulating in in Pakistan.

**Conclusion:** This is the first report from Southern Pakistan on characterization of *P.vivax* isolates confirming that extensively diverse *pvcsp* and *pvmssp1* variants are present within this region. Results from this study provide valuable data on genetic diversity of *P.vivax* which will be helpful for further studies and vaccine development.

**Keywords:** Plasmodium vivax, genetic diversity, pvcsp, pvmssp1, Pakistan

### 9.67 INCREASED PLASMA CONCENTRATIONS OF ICAM-1, VCAM-1 AND E-SELECTIN IN SEVERE *PLASMODIUM VIVAX* MALARIA PATIENTS AND ITS ASSOCIATION WITH DISEASE SEVERITY

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**Introduction:** The goal of this study was to compare the levels of the endothelial activation markers between uncomplicated, complicated and healthy controls to determine its association with disease severity.

**Methods:** During January 2010-December 2011, a total of 280 blood samples (80= complicated cases, 100=uncomplicated cases and 100=healthy controls) were collected from patients at the Aga Khan University Hospital, Karachi. The three groups were well defined according to WHO criteria. For both complicated and uncomplicated cases, thick and thin blood smears and PCR was performed to confirm *Plasmodium vivax* mono-infection. Healthy controls were tested similarly to exclude the presence of infection. Enzyme Linked Immunosorbent assay (ELISA) was performed to measure the levels of ICAM-1, VCAM-1 and E-selectin in complicated, uncomplicated and healthy controls. Kruskal Wallis test was used to determine the significant difference between the three groups. P value <0.05 were considered to be statistically significant. The study was approved by the ethical review committee of AKUH (1811-Pat-ERC-10).

**Results:** The results showed significantly increased plasma concentrations of ICAM-1, VCAM-1 and E-selectin in patients with severe malaria compared with those with uncomplicated

malaria and healthy controls ( $P < 0.0001$ ) indicating the possible role of these adhesion molecules in causing disease severity in vivax malaria.

**Conclusion:** This is the first study from Pakistan to determine the role of intracellular adhesion molecules in causing severe disease symptoms in vivax malaria. The significance of this study is that it provides an insight into the proposed mechanisms of pathogenesis in vivax malaria and may be helpful for conducting studies targeting these intracellular molecules for therapeutic purpose against malaria.

**Keywords:** *Plasmodium vivax*, ICAM-1, VCAM-1, E-selectin-1, severe vivax malaria.

### 9.68

#### GAMETOCYTE CARRIAGE IN MALARIA PATIENTS

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**Objective:** Malaria treatment aims primarily to eliminate the asexual blood stages that cause illness and reducing carriage of gametocytes is critical for limiting malaria transmission and the spread of resistance. We aim to look at the gametocyte carriage in malaria patients.

**Methods:** Data was collected from Aga Khan University Hospital clinical laboratory and its collection points during 2010-2011 from patient presenting with symptoms of malaria. Microscopic examination of Leishmann stained blood films for malaria parasite was done by an expert microscopist.

**Results:** We observed a total of 310 Malaria patients from August 2010 to July 2011 and 70% (281) were infected with *P.vivax* and 30% (32/310) were *P.falciparum* positive. Gametocytemia was 62% in *P.falciparum* infections compared to *P.vivax* 22%. Hemoglobin was low in patients with sexual stages of parasite.

**Conclusions:** Gametocytes play an important role in transmission of disease and may spread resistant strains of Plasmodia

**Keywords:** Gametocytes carriage, transmission, malaria

### 9.69

#### RISK FACTORS FOR MORTALITY IN A COHORT OF 55 PATIENTS WITH PULMONARY NOCARDIOSIS AT A TERTIARY CARE HOSPITAL IN KARACHI, PAKISTAN

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**Objective:** *Nocardia pneumonia* has emerged as an important cause of mortality and morbidity in both immunocompetent and immunocompromised hosts globally. In this study, risk factors, clinical features, outcomes and factors associated with mortality in nocardia pneumonia were reported.

**Methods:** Clinical records of all cases diagnosed with nocardia pneumonia during 2001-2010 were reviewed. During the study

period identification of *Nocardia* species was based on positive Gram stain and positive modified acid-fast stain results, colonial morphology, and conventional biochemical reactions. Data was entered and analyzed using SPSS version 17. Factors associated with mortality was assessed by univariate and multivariate analysis

**Results:** Fifty Five cases were identified. Fever, cough and dyspnea were the most common presentations. Most important risk factors were chronic steroid administration (69%) and an underlying malignancy (24%). Co-trimoxazole was the most commonly used antibiotic. Most common complications observed were respiratory failure (27%) and septicemia (27%). 19(34.5%) patients died. Factors associated with mortality were smoking ( $p < 0.01$ ), decreased appetite ( $p < 0.007$ ), leukocytosis ( $p < 0.006$ ), sputum culture positive (0.05), mechanical ventilation ( $p < 0.001$ ) and septicemia ( $p < 0.001$ ). Septicemia (OR 20 [95% CI 3.13 - 130]) was found to be independent risk factor for mortality on multivariate analysis.

**Conclusion:** We report underlying malignancy and chronic corticosteroid therapy as a risk factor for development of nocardiosis in our patients. High mortality rate in this cohort were observed. Septicemia was found to be independent risk factor for mortality. Clinicians should keep a high index of suspicion for early diagnosis and management in high risk patients to decrease mortality.

**Keywords:** *Nocardia*, nocardiosis, steroid administration

### 9.70

#### TRANSMISSION OF TUBERCULOSIS AMONG HOUSEHOLD CASES FROM KARACHI, PAKISTAN

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**Objective:** Molecular typing methods are powerful tools for the detection of the transmission pattern of *M. tuberculosis* strains. This study aimed to use MIRU-VNTR typing to understand tuberculosis transmission in a household-based population.

**Methods:** Forty seven different index cases and their household contacts ( $n=60$ ) were recruited from patients in Karachi during 2006-2009. *M.tuberculosis* strains were genotyped using 15-loci based MIRU-VNTR methods. Clustering was determined using the Bionumerics software program.

**Results:** The most predominant spoligotype were CAS (including CAS1, CAS sub-families) = 58.9%, EAI = 8.4%, Beijing = 2.8%, Haarlem = 1.8%, T Clade = 6.5%, U Clade = 3.7%, Orphan cluster = 8.4% and Unique isolates = 9.3%. Spoligotyping analysis identified that shared types of three cases each in 4 households and two cases each in 12 households. MIRU-VNTR typing revealed that in four households, there were 2 strains each with identical patterns, with 3 identical isolates in a 5<sup>th</sup> household. Additionally, in four households 2 of 3 isolates had identical MIRU types and in a 5<sup>th</sup> family, 3 of 4 isolates were the same. MIRU typing also revealed two clusters ( $n=2$ ) which were from different households.

**Conclusions:** Overall, 26 clusters were identified and these data illustrate household transmission as a source of TB. While

effective anti-tuberculous therapy remains a cornerstone of disease control it is important to have effective health awareness programs to protect at risk individuals in the community from contracting TB.

**Keywords:** MIRU VNTR, spoligotyping, mycobacterium tuberculosis

#### 9.71

##### SULPHADOXINE-PYRIMETHAMINE (SP) DRUG RESISTANCE IN CLINICAL ISOLATES OF *P. VIVAX* FROM SOUTHERN PAKISTAN

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**Objective:** The goal of this study is to investigate the frequency of Single Nucleotide Polymorphisms (SNPs) in the *dhfr* and *dhps* genes in *P.vivax* clinical isolates circulating in Southern Pakistan.

**Methods:** During January 2010-December 2011, a total of 124 blood samples were collected from patients tested slide positive for *P.vivax* mono-infections, at the Aga Khan University Hospital, Karachi, or its collection units located in Baluchistan and Sindh province. All collected isolates were analysed for SNPs at position 57, 58, 61, 117 and 173 of *pvdhfr* and 382, 383, 512, 519, 553, 585, 647 of *pvdhps* genes using Nested PCR and direct sequencing of amplified products in both directions.

**Results:** In *pvdhfr*, out of 124 samples, 40% of the samples were found to carry the wild-type amino acids while single mutation at S117N/I position was detected in 13.8% of the samples. Double mutations were observed at F57L and S58R (6.6%), S117N/I and I173L (6.6%) respectively. The most prevalent double mutation (33%) was observed at S117N/I and S58R position. Limited mutations were observed in *pvdhps*, with 6.6% of the samples carrying mutations at L519F position, 33.3% of SNPs observed at A647K position.

**Conclusion:** This study shows that drug resistance SNPs against SP has accumulated moderately in the *pvdhfr* gene while limited polymorphisms were observed in *pvdhps* gene. This study provides baseline information regarding the presence of SP drug resistance in *P.vivax* isolates and may serve helpful in conducting further studies from other areas of Pakistan.

**Keywords:** Plasmodium vivax, drug resistance, Sulphadoxine-Pyrimethamine (SP), pvdhfr, pvdhps, Pakistan

#### 9.72

##### FATAL CASE OF PULMONARY CRYPTOCOCCOSIS IN AN IMMUNOCOMPETENT HOST

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**Objective:** Pulmonary cryptococcal infection could become disseminated in immune suppressed hosts especially HIV patients.

This case report discusses a fatal pulmonary cryptococcosis in an immunocompetent patient

**The Case:** 55-year-old male with no known co-morbid presented with low grade fever, weight loss and dyspnea for past two months. He was started on antituberculous therapy (ATT) empirically with no improvement and developed right sided pleural effusion, cardiac tamponade and after pericardiocentesis developed pneumothorax and subcutaneous emphysema. CT chest showed bilateral patchy lung consolidation in apical segment of right lower lobe. Biopsy from the lesion was sent for histopathology, TB and fungal culture. AFB and fungal smear were negative. 48 hours later there was growth of *Cryptococcus neoformans*. Histopathology also showed round budding yeast cell. Serum cryptococcal antigen was negative. Patient refused for CSF examination and work up for decreased immunity, except HIV testing, which was negative. He was started on intravenous Amphotericin B and initially improved, however 2 weeks later was readmitted and succumbed to the disease. **Conclusion:** This case highlights a rare case of pulmonary cryptococcosis in an apparently immunocompetent host. HIV status was negative and other common risk factors leading to cryptococcosis were absent. However as complete work up for immunodeficiency was not done therefore subtle defects in the immunity of patient could not be ruled out.

**Keywords:** Opportunistic infection, cryptococcus neoformans, immunocompetent patient

#### 9.74

##### SERUM CXCL10 LEVELS ARE RAISED IN PATIENTS WITH DENGUE VIRUS INFECTION

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**Background & Objective:** Dengue Virus (DV) belongs to Flaviviridae and is transmitted to humans via mosquito bite. The incidence of Dengue Fever (DF) has increased in Pakistan in the past few years and caused high morbidity and mortality in 2011. Routine diagnosis of DF is made by testing for host IgM anti-bodies against DV. Pathogenesis of DF is associated with increasing proinflammatory cytokines such as TNF $\alpha$ , IL6 and chemokine CXCL10. CXCL10 has been shown to be predictive of inflammation and pathology in viral diseases. The objective was to investigate association between serum CXCL10 levels and dengue virus (DV) IgM in patients positive for dengue fever (DF).

**Methods:** Serum samples were tested for DV IgM antibodies using the Panbio IgM ELISA assay, (USA). Samples (n=216) were randomly selected from AKUH during 2011. Serum CXCL10 was tested by ELISA using recombinant standards and antibodies, Pharmingen, (USA). CXCL10 was tested in DV IgM positive (DV-pos, n= 171); DV IgM borderline (DV-BL, n=25); DV IgM negative (DV -neg, n=20) and healthy endemic controls (EC, n=33).

**Results:** Serum CXCL10 levels in DV-pos ( $p<0.001$ ) and DV-BL ( $p=0.001$ ) samples were raised as compared with DV-neg cases. CXCL10 was raised DV-pos and DV-BL groups as compared with EC ( $p<0.001$ ,  $p<0.001$ ). CXCL10 levels were

positively correlated with DV-pos ( $\rho = 0.212$ ,  $\rho = 0.005$ ) but not with DV-BL samples ( $\rho = 0.091$ ,  $\rho = 0.672$ ).

*Conclusions:* Our data indicates increasing CXCL10 levels with DF infection and suggest this as a biomarker of viral pathogenesis.

*Keywords:* Dengue virus, biomarker, CXCL10, ELISA, IgM

### 9.75

#### M. TUBERCULOSIS SONICATE INDUCED IFN GAMMA CXCL10 AND IL10 CAN DIFFERENTIATE SEVERITY IN TUBERCULOSIS

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*Background & Objective:* Mycobacterium tuberculosis antigen-stimulated T cell based assays can detect TB but are less effective when responses are compromised such as in severe disease. The objective was to develop an improved tools are required to study immunopathogenesis of tuberculosis (TB).

*Methods:* We investigated responses to *M. tuberculosis* whole sonicate (MTBs), recombinant antigens ESAT6 and CFP10 in whole blood cells of healthy endemic controls (EC, n=42) and patients with pulmonary (PTB, n=36) or extrapulmonary (ETB, n=41) disease. Biomarkers of T cell activation (IFN gamma or modulation (IL10) and chemokines, CXCL9, CXCL10 and CCL2 secretion were measured.

*Results:* MTBs, ESAT6 and CFP10 all induced IFN gamma responses in TB. ESAT6-induced IFN gamma was elevated in TB as compared with EC. MTBs- stimulated the highest IFN gamma levels but did not differentiate between TB and EC. However, MTBs induced -CXCL10 ( $p = 0.004$ ) was reduced while; -IL10 ( $p < 0.001$ ) was raised in TB as compared with EC. Between sites; MTBs induced -CCL2 ( $p = 0.001$ ) and - IL10 secretion was higher in PTB than ETB ( $p < 0.001$ ). In comparison of disease severity; MTBs induced IFN gamma ( $p = 0.014$ ) and CXCL10 ( $p = 0.022$ ) levels were raised in moderate as compared with far advanced PTB. In ETB; MTBs induced IL10 levels were greater in less severe (L-ETB) than in severe disseminated (D-ETB) cases,  $p = 0.035$ . Within the L-ETB group, MTBs induced IFN gamma was greater in patients with tuberculous lymphadenitis than those with pleural TB ( $p = 0.002$ ).

*Conclusions:* As immune responses to MTBs were differentially activated in TB of different sites and severity we propose the utility of MTBs- induced IFN gamma CXCL10 and IL10 as biomarkers in TB.

*Keywords:* Tuberculosis, ESAT6, mycobacterium tuberculosis antigens

### 9.76

#### CRIMEAN-CONGO HAEMORRHAGIC FEVER NOSOCOMIAL INFECTION IN AN IMMUNOSUPPRESSED PATIENT, PAKISTAN: CASE REPORT AND VIROLOGICAL (RT-PCR) INVESTIGATION

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*Background & Objective:* Crimean-Congo haemorrhagic fever (CCHF) is endemic in the Baluchistan province, Pakistan. Sporadic outbreaks of CCHF occur throughout the year especially in individuals in contact with infected livestock. Nosocomial transmission remains a risk due to difficulties in the diagnosis of CCHF and limited availability of facilities for the isolation of suspected patients. Rapid diagnosis of CCHF virus infection is required for early management of the disease and to prevent transmission. The objective was to identify CCHF infection in an immunocompromised host

*Methods:* This study describes the case of a 43 year old surgeon who contracted CCHF during a surgical procedure in Quetta, Baluchistan and who was transferred to a tertiary care facility at the Aga Khan University Hospital (AKUH), Karachi within one week of contracting the infection. Diagnosis of CCHF was made at AKUH using a rapid real-time reverse transcription polymerase chain reaction (RT-PCR) assay for CCHF viral RNA.

*Results:* The patient was isolated but had chronic hepatitis B and hepatitis D infection for which he had previously received a liver transplant. The patient proceeded to develop classic haemorrhagic manifestations and succumbed to the infection seven days after hospital admission. There was no further nosocomial transmission of the CCHF during the hospital treatment of the surgeon.

*Conclusions:* Early diagnosis of CCHF enables rapid engagement of appropriate isolation, barrier nursing and infection control measures thus preventing nosocomial transmission of the virus.

*Keywords:* Congo-Crimean Haemorrhagic fever virus; nosocomial transmission; rapid diagnosis, isolation barrier nursing, infection control

### 10.1

#### ACUTE CEREBELLITIS WITH HYDROCEPHALUS – A CASE REPORT

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**Objective:** Acute cerebellitis is a rare inflammatory disorder, observed both as a sequel to acute viral infection or vaccination. It has gained much recognition in the recent years, probably due to widespread use of magnetic resonance imaging (MRI). The course is variable, from benign and self-limiting to life-threatening.

**Method:** We report an eight year old boy who presented with sudden onset headache and vomiting. He had broad-based gait and intention tremors on admission. MRI revealed bilateral cerebellar swelling with hyperintense signals on T2-weighted imaging. CT head showed prominent third and lateral ventricles. He was treated with high dose corticosteroids and required an external ventricular drain (EVD) insertion. The clinical and radiologic findings in this boy were consistent with cerebellitis complicated by hydrocephalus.

**Results:** The child responded to steroids and EVD placement and showed clinical improvement by day 3. The child became fully alert and made an uneventful recovery. The EVD was removed after ten days and he was discharged in stable condition. After two months, the child is doing well with complete resolution of symptoms.

**Conclusion:** Acute cerebellitis complicated by hydrocephalus and posterior fossa compression may manifest a fulminant course and warrants timely and appropriate intervention. MRI is the imaging modality of choice and prompt surgical management can be lifesaving in case of failure of medical treatment.

**Keywords:** Cerebellitis, hydrocephalus, posterior fossa compression

### 10.2

#### ASSESSING THE MENTAL HEALTH OF HEALTHCARE WORKERS AT A PRIVATE UNIVERSITY HOSPITAL IN KARACHI, USING A SELF-REPORTING QUESTIONNAIRE

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**Objectives:** i) To determine the prevalence of common mental disorders among healthcare trainees and practitioners. ii) To detect the relationship of these common mental disorders with gender and the nature of healthcare jobs. iii) To learn if the year of medical schooling can be linked with the psychological distress among medical students.

**Method:** The study will commence after the ERC approval by Ziauddin University, which is in process. This will be a descriptive-cross-sectional study carried out on a selected sample of healthcare trainees and practitioners in Ziauddin University. Exclusion Criteria: 1) Population already seeking psychiatric consultation/treatment. 2) Students below the age of 18. Written consent form will be taken from the participants after carefully

explaining the purpose of the study. The participants will be handed a questionnaire which they will be required to fill in. The part of the questionnaire that would detect a person having a common mental disorder is taken from Self-Reporting Questionnaire (SRQ-20) created by World Health Organization containing a set of 20 questions. Through convenient sampling, following sample size will be considered: 50 students from each batch of Ziauddin Medical College. Fifty students from each batch of Ziauddin College of Dentistry. Fifty students from each batch of Ziauddin College of Pharmacy. Fifty students from Ziauddin School of Physical Therapy. Fifty doctors working at Ziauddin University Hospital. Twenty-five students from Ziauddin School of Nursing. Twenty-five nurses working at Ziauddin University Hospital. Plan of analysis: Scoring will be done on the basis of SRQ-20. "0" will refer to "no" (symptom absent) while 1 will be "yes" (symptom present). The scores will be given between the ranges of 0 to 20. A cut-off score will be generated by determining the mean scores and separate cut-off scores will be allotted for males and females. Data will be entered and analysed by SPSS. Descriptive analyses and appropriate correlations will be formulated with the help of this software.

**Results:** The results of this study will demonstrate the prevalence of common mental disorders amongst healthcare trainees and practitioners. It can be helpful in improving the curriculum of medical schools to be less stressful, so as to minimize the psychological distress among medical students. Alternative interventions will be recommended to aid the identified high-risk population. This study can further contribute to the existing literature regarding mental well-being of medical students, doctor and other healthcare workers.

**Keywords:** Mental health, health care workers, Karachi

### 10.3

#### AUDIT TO DETERMINE FREQUENCY OF SUBTLE INAPPRECIABLE CEREBRAL INFARCTIONS ON CT

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**Objective:** Ischemic strokes during their initial stages may be very subtle on CT scan and are liable to be missed during this period. MRI definitely is known to pick these infarctions during this time and Diffusion sequences may be helpful for this purpose. Different techniques as variable window setting, filters etc have been utilized for early detection of the infarcts on CT scan as it may not be possible to rush for MRI in all after exclusion of hemorrhage on CT. This audit was performed to review to incidence of missed infarctions on CT scan that were appreciated on MRI.

**Method:** This was Observational study conducted at radiology department of Aga Khan University Hospital. Data was reviewed from October 2011 to November 2011. A total of 30 patients were reviewed in the study with acute infarctions on MRI examination. Data were reviewed if CT scan was performed earlier to the MRI examination and whether the infarction was reported or not.

**Results:** This provisional audit data showed that out of 30 patients with acute infarctions on MRI 15 had prior CT scan head

performed. Out of these in 7 patients infarction was not appreciated and in 8 the lesions were reported as acute infarction. The reasons behind the non appreciation are well documented as early stage, lesion being subtle however it is important to look back and see if the lesions were showing any subtle or early sign which with experience may be appreciated improving patients diagnosis and treatment.

*Conclusion:* Early infarctions are known to be missed on early CT examinations. Subtle signs should be looked for to improve patient's diagnosis and proper management.

*Keywords:* cerebral infarctions, CT scan, MRI

#### 10.4

##### BROADENING HORIZONS OF MENTAL HEALTH CARE: ADDRESSING THE ISSUE OF AUTONOMY AND DECISION MAKING AMONG MENTALLY ILL PATIENTS

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*Background & Objective:* WHO (2003) estimated that 450 million people suffer mental disorder globally (Sakellari, 2008). According to Baltrušaitytė (2010) in USA and Western Europe, foremost emphasis on autonomy was made in 1960s and 1970s. It is yet, unswervingly linked to debate between patients' autonomy vs. caregivers' beneficence. The purpose is to associate a case report of a mentally ill patient of 19 year old admitted involuntarily with contemporary literature.

*Method:* Systemic review of literature from 10 research articles from 2001 to 2011 was conducted through electronic medium by using Jstor, JPMA, SAGE and Google search engines. *Results:* In accordance with Autonomy as a foundation for human development model, freedom of action could comprise those actions which can supersede the rights of the other people. Whereas; freedom of will, embraces the autonomy in which we anticipate the healthier outcomes. Welie et al. (2001) indicated that health care providers must respect the autonomy of patients, only if they are able to decide for the options of health care. This is supported by Baltrušaitytė (2010) where health care professionals do not deem such patients capable to voice their needs. Researches advocated psychiatric advance directives as legal tools that enables mentally ill to document their choices for choices, if they become incompetent in times ahead.

*Conclusion:* Deegan and Drake (2006) mentioned that shared decision making is a clinical model that aids to endorse values such as choice, self determination and empowerment among mentally ill. This is termed as concordance. Epstein et al. (2011) further noted that while implementing an interactional approach, shared mind upholds relational autonomy.

*Keywords:* Autonomy, decision making, mentally ill patients

#### 10.5

##### BROADENING HORIZONS OF PSYCHIATRIC NURSING: ADDRESSING THE ISSUE OF ALTERED FAMILY DYNAMICS IN A 52 YEAR OLD WOMAN

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*Objective:* Family dynamics are the ways in which members of a family interact with each other and in relation to the group as a whole are often referred to as family dynamics. (Bowles, 2011). Family dynamics significantly impact health in positive and negative ways. Intimate relations and supportive family increases overall well-being. Purpose: To correlate the association of family dynamics and mental health with conventional literature. *Method:* Systemic review of literature from 07 research articles from 1999 to 2011 was conducted through electronic medium by using JPMA, SAGE and Google search engines. *Results:* The client had faced dysfunctional family relationships in all junctures of life and had poor early development which according to Erik Erickson has a great influence on adulthood. According to him successful passing through eight developmental stages results in achieving a healthier life whereas, if these stages are not passed successfully person develops conflict. These conflicts serve as a turning point in development. In Pakistan such altered family relationships are evident because women are always considered as subordinate creatures and no rights are given to them.

*Conclusion:* Psycho education is significant that includes giving information about the disease process to family and patient itself, contributing in destigmatization (Baumi, Frobose, Kraemer, Rentrop, Pitschel-Watz, 2006). In addition According to Grohol (2012) Psychotherapists employ a range of techniques based on experiential relationship building, dialogue, communication and behavior change that are designed to improve the mental health of a client, or to improve group relationships such as in a family.

*Keywords:* Family dynamics, health, psycho education

#### 10.6

##### CENTRAL NERVOUS SYSTEM INVOLVEMENT IN MULTIPLE MYELOMA

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*Objective:* Central nervous system involvement by multiple myeloma (MM) is extremely rare. MRI is the imaging modality of choice to detect myeloma at these unusual sites. We present MRI findings in central nervous system in a sixty year old man who is a known case of multiple myeloma. The purpose is to increase the awareness of the clinical presentation, neuro-radiological findings and follow-up of multiple myeloma with intracranial growth.

*Method:* Multiple sequences have been proposed for use in identifying focal or diffuse disease. These includes spin echo (T1-Weighted and T2-Weighted), STIR (Short T1 inversion recovery).

**Results:** MRI revealed multiple abnormal hyperintense T2 signal areas in the base of skull and skull vault. Abnormal signals were also identified in the left cerebellum showing diffusion restriction. Post contrast enhancement also identified at the ventricle suggestive of ependymal disease. However, no evidence of pachymeningeal or leptomeningeal disease. There is further evidence of two rounded, well defined lesions, heterogeneous on T2 weighted images with significant surrounding edema. On post contrast images the lesion in the frontal lobe show ring enhancement with some evidence of nodularity at its anterior margin. The lesion in the parietal lobe is showing only a small central focus of enhancement. All these findings represent metastatic deposits of the multiple myeloma.

**Conclusion:** The neuroradiological findings are no different from meningioma, metastasis, lymphoma, dural sarcoma, plasma cell granuloma, infectious meningitis and leptomeningeal carcinomatosis. Intracranial involvement from multiple myeloma must be taken into account in the differential diagnosis of cranial osseous and meningeal diseases.

**Keywords:** Magnetic Resonance Imaging, Central Nervous System, Multiple Myeloma

#### 10.7

##### CEREBRAL INFARCTIONS PREDICTS OUTCOME IN PATIENTS WITH TUBERCULOUS MENINGITIS

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**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.

**Method:** 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 infarctions 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 infarctions 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 infarct or tuberculoma and with tuberculoma alone.

**Keywords:** Stroke, infarct, tuberculosis

#### 10.8

##### CT HEAD: ARE WE GIVING THE RIGHT DOSE

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**Objective:** To review at institutional level that if we are giving correct dose in plain CT Head examination so that corrective measures may be taken if the dose is relatively high. **Method:** This was an observational study conducted at CT scan department of Aga Khan University Hospital. The DLP data was collected for 100 plain CT scans of Brain in the month of February 2012 and the values of effective dose was calculated using a formula. CT scan examination was performed on 64 slice CT scanner Toshiba Aquilion.

**Results:** 100 CT scan examinations were reviewed and DLP recorded. 53 were male and 47 were female. Age ranges from 35 to 90. The clinical indication included Headache, trauma, CVA, etc. the dose varied from 1.16 to 3.5. Average dose 1.9. Although the average dose is as per recommendation published however we look into the causes of increased dosage in some patients. This would help control our dosage limit and devise measures to control it.

**Conclusion:** Variable doses of radiation were experienced although the average dose is within recommended levels. The reason need to be identified and small measures may result in significant reduction of overall radiation dose to patients.

**Keywords:** CT Head, radiation dose, calculating dose

#### 10.10

##### DO ON CALL NEUROSURGERY RESIDENTS INTERPRET CRANIAL CT SCANS IN TRAUMA ACCURATELY? A PROSPECTIVE OBSERVATIONAL STUDY

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**Objective:** To assess the discrepancies in interpretation of unenhanced cranial CT scan by on call neurosurgery resident and consultant radiologist.

**Method:** One hundred and ninety-four patients with TBI presenting at the Aga Khan University Hospital ER were included in the study. Data has been collected by principal investigator for all patients undergoing unenhanced Cranial CT scan in

emergency room. On call neurosurgery resident recorded the findings of unenhanced Cranial CT scan using standard proforma. The findings of neurosurgery resident were compared with final report by Consultant Radiologist for concordance/discordance. SPSS (ver. 19) was used for data analysis. The discordance rate between the groups was determined

**Results:**Total number of patients included was one hundred and ninety four. Majority of our patients i.e. 73.7% were male. Mean age for the whole group of 36.4 + 22.38 years. Road traffic accidents were the leading cause of TBIs and mild head injury was the most prevalent form of injury. Four residents at different levels of their training evaluated the CT scans. Overall concordance of 58.8% & discordance of 41.2% was found between the resident and consultant radiologist. On subgroup analysis first year Neurosurgery resident (PGY3) had significant major discordance i.e.27.3%. On Kappa Cohen's test there was a good general agreement between the radiologist's reports and the neurosurgical resident's identification of normal scans ~0.79. The radiology reports and the residents also agreed well on the presence or absence of intracranial blood, contusions and pneumocephalus ~0.76.

**Conclusion:**On call Neurosurgery resident in second year of their training i.e.PGY4 and above can safely interpret CT scan in traumatic brain injury. Though the rate of overall discordance is significantly high but major discordance that leads to change in management plan forms a small part of it.

**Keywords:** Concordance, Cranial CT scan, Trauma

### 10.11

#### EFFECT OF VITAMIN-E SUPPLEMENTATION WITH NON-STEROIDAL ANTI-INFLAMMATORY DRUGS

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**Objective:**Neurodegeneration is the umbrella term for the progressive loss of structure or function of neurons, which if not treated promptly, progress to rigorous outcomes. NSAIDS have significant therapeutic value for several of inflammatory disorders. Oxygen provides the foundation of metabolism. It is a conventional fact that excess production of ROS may initiate the process of inflammation and ultimately leading to diseases like neurodegenerative disorders like Parkinson's, Alzheimer's, Huntington's and other intimidating diseases like cancer, atherosclerosis with insidious onset and chronic progression. Therefore foods, dietary supplements and medicines containing antioxidants are beneficial to reduce the rate of progression of inflammatory disease. We evaluated the potentiating effect of NSAIDs with vitamin E supplementation

**Method:** The effect of aspirin, diclofenac sodium and refocoxib with vitamin E supplementation on inflammation was determined using rat paw edema test, animal model of inflammation. Rats were divided into different groups and were treated orally with, saline (control) or different doses of test drugs along with vitamin E. The paw volume was measured using plethysmometer  
**Results:**Aspirin (100 mg/kg) caused ~50% inhibition in edema. While the same dose of aspirin with vitamin E supplementation

(200 mg/kg) showed a significant increase (~25%) in the anti-inflammatory effect. Similar increase with varying degrees was observed with related drugs.

**Conclusion:**The use of aspirin, diclofenac sodium, refocoxib with vitamin supplementation showed significant potentiation that could be used as an effective regimen therapeutically. The study provides a pharmacological basis for the use of antioxidants and NSAIDS as combination therapy in neuroinflammatory disorders

**Keywords:** Neuroinflammatory disorders, NSAID, Anti-oxidants

### 10.13

#### GENDER VARIATIONS IN LUMBAR MORPHOMETRY IN A SAMPLE PAKISTANI POPULATION

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**Objective:**To describe the characteristics of lumbar vertebrae of Pakistani patients reporting at a Tertiary care hospital and compare the differences between male and female patients  
**Method:** An observational study was conducted based on review of thin cut (3mm) Computed Topographic (CT) images of lumbar vertebrae using PACS (picture archiving and communication system). 220 vertebrae from 49 patients were studied, and various dimensions were analyzed

**Results:**Generally the size of the vertebral bodies, vertebral canals and recesses were found to be greater in males. The difference was statistically significant for transverse and anteroposterior diameters of the vertebral bodies and sagittal diameter of pedicles on the left side ( $p<0.05$ ). Significant differences were noted in various dimensions of lumbar vertebral bodies. All the dimensions of body of lumbar vertebra were greater in males than females. Anterior body height was found to be significantly greater in males in L5 vertebra ( $p<0.05$ ). Posterior heights of L1, L2 and L3 were significantly greater in males ( $p<0.05$ ). The superior transverse, inferior transverse and anteroposterior superior diameters were significantly greater in males at all levels ( $p<0.05$ ). Overall the pedicle diameters were greater in males and angles were greater in females. Regarding diameters the difference was significant ( $p<0.05$ ) for transverse diameter at L2 and L5 as well as vertical diameter at L1 and L2 for right pedicle. Regarding angles the difference was significant ( $p<0.05$ ) for sagittal angle at L2 and for axial angle at L1 and L5 on the right side. There was significant statistical difference in mid-sagittal diameter of canal at L5 vertebra ( $p<0.05$ ).  
**Conclusion:**This study provides detailed anatomical knowledge of the lumbar region in a sample population of Pakistan. Moreover, there are significant differences in various dimensions of lumbar vertebrae between females and males. This would prove to be critical for performing a safe operation

**Keywords:** Gender variations, Lumbar morphometry, Pakistan



#### 10.14

##### HEPATIC TRYPTOPHAN 2,3 DIOXYGENASE ENZYME MRNA EXPRESSION IN RODENT MODEL: A TARGET FOR EMERGING ANTIDEPRESSANT TREATMENT

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**Objective:** Long-term treatment of selective serotonin reuptake inhibitors (SSRIs) performs pivotal role to treat CNS disorders particularly caused in response to altered serotonergic function associated with specific brain region. Antidepressants are known to inhibit TDO enzyme activity and increases brain serotonin concentration. Present study aims to assess the mechanism of action of acute and chronic antidepressant treatments on TDO mRNA expression with relation to HPA-axis

**Method:** First strand cDNA was synthesized by using M-MLV reverse transcriptase from total RNA extracted from liver of forced swim stressed rats, used as animal model. cDNA was amplified for real-time PCR.  $\beta$ -actin was used as housekeeping gene. Relative quantification between samples and controls were done by comparing ct values  $R = 2^{(\Delta\Delta Ct \text{ sample} - \Delta\Delta Ct \text{ control})}$   
**Results:** During acute treatment, SJW and citalopram reduced TDO mRNA expression. SJW has marked inhibition of TDO mRNA (ct=0.6,  $p < 0.05$ ), significant reduction in its apoenzyme activity and non-significant change was found in holoenzyme activity. However inhibition in holoenzyme activity was observed by citalopram and did not affect apoenzyme activity In Chronic treatment effects, Citalopram showed insignificant change in TDO mRNA expression, reduced corticosterone and did not affect holoenzyme activity, however Insignificant change in apoenzyme and significant inhibition in total enzyme activity was observed. However SJW caused significant reduction in mRNA, increased corticosterone concentration and significant elevation in its holoenzyme activity while decrease in apoenzyme activity and no change in total enzyme was observed by SJW.  
**Conclusion:** Present results concluded that SJW provides better therapeutic option for rapid attainment of high synaptic serotonin as compared to classical SSRIs and some other classical antidepressants

**Keywords:** mRNA expression, antidepressants, serotonin, Tryptophan 2, 3 dioxygenase Enzyme

#### 10.16

##### MAGNETIC RESONANCE ANGIOGRAPHY AND BRAIN ISCHEMIA IN PATIENTS WITH ACUTE STROKE

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**Objective:** The purpose of the study is to see presence of Arterial Disease on Magnetic Resonance Angiography and Diffusion positive infarction in patients with acute ischemic stroke.  
**Method:** 124 patients with signs and symptoms of cerebral ischemia were referred for study. 16 patients could not complete the study because of poor cooperation and MRA was not done.

108 patients completed all sequences of the study according to departmental protocol. MRA findings were evaluated with presence of acute brain ischemia on magnetic resonance imaging. Chi square test was applied to see whether arterial disease on MRA correlated with brain parenchymal abnormality on MRI. P-value less than 0.05 were considered as significant.  
**Results:** In majority of patients (95.34%) the arterial lesion on MRA correlated with acute infarction on MRI (p-value 0.001). 40 patients had arterial abnormality on left side while in 42 patients arterial stenosis was noted on right side while 4 patients had bilateral arterial disease. Middle cerebral arteries were involved in 42 patients. 18 patients had diseased in posterior cerebral arteries, 4 patients had lesion in anterior cerebral arteries, while vertebro-basilar arteries were involved in 22 patients.  
**Conclusion:** A high positive correlation between Magnetic Resonance Angiography and MR diffusion restriction (95.34%) supports an arterial vasculopathy as the basis of this MR signature in acute ischemic strokes. However any occlusive disease of an arterial branch which remained undetected by MRA could have been the result of any discordance seen in this study.

**Keywords:** Magnetic resonance diffusion weighted imaging, magnetic resonance angiography, acute ischemic stroke

#### 10.18

##### MOLECULAR CHARACTERIZATION OF GENE INVOLVE IN SPINAL MUSCULAR ATROPHY

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**Objective:** Spinal muscular atrophy is an autosomal recessive disorder characterized by degeneration of lower motor neurons, leading to progressive paralysis with muscular atrophy which affects about 1 in 10 000 individuals. The three clinical forms of SMA were mapped to the 5q13 region. Three candidate genes have been isolated and shown to be deleted in SMA patients: the Survival Motor Neuron gene (SMN), the Neuronal Apoptosis Inhibitory Protein gene (NAIP).

**Method:** In this study, blood samples from 101 patients having clinical features common to SMA were collected for SMN1 and NAIP analysis. PCR and restriction assay was performed to establish deletion of exon 7 and 8 in SMN1 gene and exon 5 in NAIP gene. In this report we present the molecular analysis of the SMN1 exons 7 and 8 and NAIP exon 5 in 101 patients from 2005-oct 2012.

**Results:** A total of 101 cases including 44 (43.5%) females and 57 (56.5%) males were examined. Amongst 31 patients had deletion in SMN1 and NAIP genes. Of samples from females, 12 were positive for NAIP gene deletion, whereas in three patients SMN1 gene was deleted but NAIP was normal. 19 samples from male patients were positive for deletion of both SMN1 and NAIP. While in 3 male patients only SMN1 was deleted.

**Conclusion:** In the clinically suspected cases of SMA 31% patients had deletion in SMN1 and NAIP genes.

**Keywords:** NAIP, SMN1, SMA

**10.19****PREVALENCE OF OCCUPATIONAL STRESS AMONG HEALTH-CARE PROFESSIONAL IN AN EMERGENCY ROOM***Aamir Hussain**School of Nursing & Midwifery, Aga Khan University, Karachi*

*Objective:* Round the clock (24/7) emergency departments remain busy in all over the world. People expect more from the emergency department nurses and doctors. They assume that emergency department means that health-care professionals know their needs at the first hand shake. They need immediate solution of their problems but investigations and diagnosis always take time. Consultations are also time consuming. More than 50% are not actually the emergent cases. More than 30% attendants lose their temperament. Over-Counseling delays the process of treatment. Health-care professionals are neither paid promptly nor promoted properly. Strikes are becoming usual. Patient and attendant became more demanding. Duty-timings are not flexible. Social life and leisure-time have shrunken. Stress is prevailing. This study aim to investigate the sources of job stress and the adopt coping strategies of nurses and physicians who are working in an Accident and emergency department.

*Method:* We used a cross-sectional, non-experimental, descriptive study design. This design was chosen because randomization of groups was not possible. Nurses and physicians, who returned a self-report questionnaire, comprised the judgmental and convenience sample of . This study was conducted from June 3rd to September 23, 2012. Health-care professional staff includes physicians and nurses. Only AKUH was fulfilling our triple-T criteria i.e., teaching, tertiary care and complete triage system of emergency. A self report questionnaire, containing list of demographic questions, like-dislike questions, agreed-not agreed questions were used as instrument. For data processing, we used SPSS 16.0. Many tools used to calculate and to show the relations between variables e.g., Descriptive statistics, Regression and Correlation.

*Results:* In AKUH E.R., majority are of females. Mostly were not satisfied with their salary, promotion criteria. The dependence of colleague behavior here is a bit positive because of highly co-operative staff and patient and their attendants. They have to work with both manual & computerized, their duties are rotational so they are able learn new things, here the age- group between 26-30 is more dominant here with high %age and second highest age-group is between 18-25. mostly they are full timers, and they have to complete their work in limited time duration. A high %age say that their work disturb their social life, they are mostly neither satisfied nor dissatisfied with their work or completely satisfied with the leisure hours they get, they don't have time to take meal on time, they do shopping in 2-12 months, so as outing in every 2-12 months. Most of them, don't do exercise because of short time and they don't smoke.

*Conclusion:* We found that high demands from patients and attendants, low job satisfaction, little decision-making authority, low levels of social support, time constraints low to nil salary, less career growth, less time for friends and family were associated with the development of stress-related symptoms in doctors and nurses of ER departments in Karachi. There is a significant difference between male and female as working population in both hospital ER departments. Females are more working in ER

than the males. We can also conclude that females are more prone to stress than males in ER. we also concluded that some innovations are also causing significant stress because not being used properly e.g., Voice pager system in AKUH ER. Newly appointed ones mostly leave their job because they do not cope up the stress of the ER department.

*Keywords:* Health-care professionals, Occupational stress,, strikes, emergency department, salary, promotion, social life, overcounseling, immediate solution.

**10.20****PSYCHOLOGICAL ASPECTS OF PAIN WITH SPECIAL REFERENCE TO PAKISTANI CULTURE***Mahek J Pethani, Anum Allahwalla, Sumera F Ladha, Reema Ismail**School of Nursing & Midwifery, Aga Khan University, Karachi*

*Objective:* According to Hadjistavropoulos and Craig (2004) pain is ranked as the most common reason for seeking medical care and it has been expected that around 80% of physician visits involve a pain constituent. Keefe et al. (2004) suggests that during the past thirty years it has become evident that in the experience of pain, psychological factors play an imperative role. The purpose is to explore the relation of pain with psychology with cultures, gender and age as variables and correlate it with conventional literature.

*Method:* Systemic review of literature from 1999 to 2011 was conducted through electronic medium by using JPMA, SAGE and Google search engines.

*Results:* To recognize the psychological perception of countering pain, the fear avoidance model can be applied by addressing the phenomenon of pain catastrophizing and self efficacy. Pain catastrophizing is the predisposition of an individual's focus on pain. Researches have revealed that patients who catastrophize have "higher levels of disability, higher rates of health care usage, longer hospitalizations, increased pain medication usage, and higher levels of motor pain behaviors, and they take longer to reach rehabilitation milestones during surgical recovery." (Keefe et al., 2004). Researches furthermore explicitly suggest that persistent pain can make patient anxious about their state and due to that those patients can employ themselves in fear avoidance behaviors

*Conclusion:* In contrast to pain catastrophizing, self-efficacy refers to confidence of person to effectively engage in a process to achieve a preferred outcome. The studies exhibited by Keefe et al. (2004) suggest that the self efficacy of patients differ. Subsequently, patients reporting elevated levels of self-efficacy have lower levels of pain and reduced psychological distress. These findings underscore that individuals can deal with pain moderately on the basis of their beliefs. Contemporarily in the health care settings, the techniques of cognitive based therapy are frequently applied by nurses as part of psychosocial care and rehabilitation for various chronic conditions. In conclusion, the notion that pain is an essential precursor of physical injury has now become a conventional concept.

*Keywords:* Pain, psychological, medication, predisposition

### 10.21

#### RECORDING AND REGISTRATION OF SUICIDE & DSH IN WHO EASTERN MEDITERRANEAN REGION (EMR) MEMBER STATES: A QUESTIONNAIRE SURVEY

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*Objective:* Accurate registration and diagnosis of suicide and DSH are fundamental to suicide statistics on which suicide prevention policies and programs are based. These are influenced by legal, administrative, religious and socio-cultural factors.

*Method:* To assess the process of recording and registration of suicide & DSH in the 21 predominantly Islamic countries of WHO-Eastern Mediterranean Region (EMR), a 22-item questionnaire survey (11 questions each for suicide and DSH) was carried out. The response rate was 18/21 (86%).  
*Results:* Suicide & DSH were deemed illegal in 14 & 13 of the EMR countries respectively, though cases against the acts were registered in only 7 countries. There was a great variation in the professionals/office responsible for giving the verdict of suicide in EMR countries. Suicide as a mode of death was mentioned in death certificates in only 8 countries. Statistics on suicide & DSH are officially collected & reported in 6 countries; while in 5 suicidal deaths were part of the national vital registration system. Despite being religiously condemned, there was very little evidence that suicide victims were discriminated and almost all received religious rites and burial in normal graveyards. Majority of those surveyed felt that both suicide & DSH are underreported in their countries.

*Conclusion:* Our survey revealed that there was a significant variability in diagnosis, registration/recording of suicide & DSH across the EMR countries. Both suicide & DSH were considered illegal and were not part of national vital registration system in majority of countries surveyed. There is urgent need to develop a standard system of diagnosis & recording of suicide and DSH in EMR member states. Suicidal acts should be made part of national vital registration system and all member states should be encouraged to report their suicide statistics to the WHO. This will help in developing and evaluating the effectiveness of suicide prevention programs in the EMR member states.

*Keywords:* Suicide, deliberate self-harm, Islam

### 10.22

#### RISK FACTORS FOR CEREBRAL VENOUS THROMBOSIS AMONG ASIAN PATIENTS; RESULTS FROM ASIAN CVT REGISTRY

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*Background:* Cerebral venous thrombosis is probably more common in Asian countries but most of the reported literature from European countries. Risk factor for CVT in Asian countries may be different from European countries. Objective: To identify risk factors (especially hematological) for CVT among Asian patients with confirmed CVT.

*Method:* Data was collected prospectively from 15 centers in seven Asian countries during 2010-2011.

*Results:* A total of 796 patients (475; 60% females) were enrolled. Mean age was 31 years. Seventeen (2%) were pregnant and 125 (16%) were in puerperium. Protein C was tested in 519(65%) and was deficient in 216(42%). Protein S was tested in 511(64%) and was deficient in 215(42%). Anti-thrombin III was tested in 501(63%) and was deficient in 187(37%). Factor V Leiden mutation tested in 168(21%) and was present in 92(55%). Lupus anticoagulant was tested in 202(25%) and was present in 21(10%). Antiphospholipid antibodies was tested in 215(65%) and were present in 46(21%). Homocystiene level was tested in 485(61%) and was elevated in 177(36%). Factor VIII was tested in 48(6%) and was deficient in 3(6%). Prothrombin G20210A was tested in 28 (3%) and was present in 3(15%). Polycythemia was tested in 260(33%) and was present in 12(4%). Thrombotic purpura was tested in 177(22%) and was present in 4(2%). Sickle cell disease was tested in 89(11%) and was present in 7(9%). Malignancy was present in 24 (3%) patients.

*Conclusion:* Factor V Leiden mutation, Protein C and S deficiency and elevated homocystiene level were most common risk factors for CVT among our patients. Among women CVT patients 30% were either pregnant or in puerperium.

*Keywords:* Cerebral venous thrombosis, stroke, asia

**10.23****SCREENING OF PSYCHIATRIC DISORDERS IN HEARING-IMPAIRED CHILDREN AND ADOLESCENTS 4-16 YEARS OLD ATTENDING SPECIAL EDUCATION INSTITUTIONS IN KARACHI: A CROSS-SECTIONAL STUDY**

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**Objective:** Literature suggests the association between hearing impairment and psychiatric problems among children and adolescents, but there is no established prevalence of such problems in Pakistan. Therefore, this study was conducted to estimate the prevalence of psychiatric problems and to identify associated factors among hearing-impaired children and adolescents (aged 4-16 years) attending special education institutions in Karachi (Pakistan).

**Method:** A cross-sectional study using stratified random sampling was conducted in Karachi on 272 hearing-impaired children. Multi-informant rating (responding parent and teacher) was used to assess prevalence on SDQ. Furthermore, factor analysis and internal consistencies of SDQ (parent-rated) were computed as SDQ has not been validated for hearing-impaired children in Pakistan.

**Results:** This study estimated an overall parent-rated prevalence of psychiatric problems among hearing-impaired children as 18% and teacher-rated prevalence as 32.7%; Final model indicated that depression among responding parents (assessed by AKUADS) was highly associated with psychiatric problems of the children [OR (adj) =2.61; 95% CI (1.34, 5.11)]. Children with good performance [OR (adj) =3.09; 95% CI (1.04, 9.25)] and with fair/poor performance [OR=3.43; 95% CI (1.17, 10.04)] were more likely to have psychiatric problems as compared to children with outstanding/excellent performance. On factor analysis we were able to reproduce three factors of SDQ excluding the hyperactivity and peer problems scale.

**Conclusion:** In our study, parent rated prevalence for overall psychiatric problems was 18%. Therefore, we recommend that researches should be conducted on prevalence of psychiatric problems among hearing-impaired children for further clarification of the estimate.

**Keywords:** SDQ: Strengths and Difficulties Questionnaire, AKUADS: Aga Khan University Anxiety and Depression Scale, OR: Odds Ratio

**10.24****SYMPTOMS OF EARLY PSYCHOSIS FROM KARACHI, PAKISTAN**

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**Objective:** Initiation of treatment at an early stage of psychosis improves the long-term prognosis of the illness. Therefore, more information is needed on the presentation of early psychosis. This study aims to explore the symptoms of early psychosis as

concerning behaviors in the pathways to help seeking. **Method:** This cross sectional study was carried out at the department of psychiatry, Aga Khan University during the period of 2008 to 2009 as part of the project funded by the Aga Khan University, Seed Money Research Grant. A total of 93 patients were interviewed in the pathways to care of schizophrenia. The diagnosis was based on ICD-10 criteria. The pathways to care were assessed through a semi-structured questionnaire. The onset, course and symptoms of psychosis were assessed through Interview for Retrospective Assessment at Age at Onset of Psychosis (IROAS).

**Results:** In our sample 59% (n=55) of the participants were male while 41% (n=41%) were female. Approximately 44% of the males and 30% of the females were married. Using the structured checklist from Indicators of illness in IROAS, 108 symptoms were identified as concerning behavior. Alternatively, sixty (55%) concerning behaviors were reported in the open-ended inquiry of the reasons for help seeking as assessed by the pathways to care questionnaire with a statistically significant difference between most symptoms category. The difference was most pronounced ( $p < 0.001$ ) for depressed mood (66%), worries (65%), tension (63%), withdrawal/mistrust (54%) and loss of self-confidence (53%). Some important symptoms like thought withdrawal (22%) and passivity (15%) were elicited only through structured interview (IROAS). When symptoms were categorized together, about 83% of the subjects presented with affective and non-specific prodromal symptoms. Roughly, 10% of the subjects presented with positive symptoms and 3% presented with the negative symptoms of psychosis. The non-specific, affective symptoms appear to predominate the prodromal phase of the illness.

**Conclusion:** Prodromal symptoms of schizophrenia include non-specific, affective symptoms. Attention needs to be paid on identifying the prodromal symptoms and change in social functioning in order to identify those who are at risk of long term psychosis.

**Keywords:** Early psychosis, schizophrenia, pathways to care

**10.25****THE FREQUENCY AND FACTORS LEADING TO STROKE ASSOCIATED PNEUMONIA IN ALL ACUTE STROKE PATIENTS ADMITTED AT A TERTIARY CARE HOSPITAL**

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**Objective:** 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 was 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.

**Method:** 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:* Stroke, stroke associated pneumonia, factors leading to stroke associated pneumonia

## 10.26

### TRANSFUSION REQUIREMENTS IN ELECTIVE SPINE ARTHRODESIS

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*Objective:* To audit our own practices with regards to pre-operative arrangement of blood products and compare it to perioperative requirements through the Cross match-Transfusion Ratio (C-T Ratio). And to identify potential predictors of transfusion for elective spine arthrodesis

*Method:* The study was conducted at Aga Khan University Hospital, section of Neurosurgery. Data for all consecutive cases for a two year period was retrieved from our medical records using ICD 9. All patients who underwent elective spine arthrodesis within the study period were included and patients with tumors, non-instrumental fusion, redo surgeries and incomplete records were excluded. Data was analyzed using SPSS – 19. T-test and one way ANNOVA was applied bivariate and multivariate analysis respectively.

*Results:* 79 patients fulfilled the inclusion criteria of which. 42 were male and 37 female. Mean age was  $39 \pm 18.51$  years C-T Ratio varies with respect to diagnosis, co-morbid conditions, number of levels decompressed and fused, type of approach adopted and pre-operative hemoglobin levels. Cumulative C-T ratio was 4.4:1, which is significantly higher than reported in literature. On Univariate analysis indication, approach and level of surgery were found to be statistically significant ( $p$ -Value  $<0.02$ ) and on multivariate analysis only the surgical indication was found to be the significant predictor of blood transfusion ( $p$ -value  $<0.05$ ).

*Conclusion:* Blood products are pre-operatively arranged in excessive quantities for patients undergoing elective spinal arthrodesis. We recommend that in all patients with normal pre-operative hemoglobin levels undergoing either elective cervical arthrodesis, or posterior thoracolumbar

arthrodesis, merely group and hold is sufficient. For trauma cases or circumferential approaches, up to two units of blood products can be arranged preoperatively.

*Keywords:* Blood Transfusion, C:T Ratio, arthrodesis

**11.3****EFFECT OF ORGANIZATIONAL BEHAVIOR ON ETHICAL DIMENSION EVIDENCE BASED ON HEALTH CARE ORGANIZATION**

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*Objective:* Organizational Behavior is the study and application of knowledge about how people, individuals, and groups act in organizations. That is, it interprets people-organization relationships in terms of the whole person, whole group, whole organization, and whole social system. It purposes is to build better relationships by achieving human objectives, organizational objectives, and social objectives. Ethical concerns are an important area in business practices and research endeavors to find great association of organizational behavior. In particular, ethical concerns become evident in situations of symmetric relationships across organizations. There is a need to establish ethical structures, processes and performance measures in organizations. It has to find that how implementation of the strong organizational culture effects on ethical practices consequently, made Health Care Organization different from other competitors and gains sustainable competitive advantages. The final approach of this paper is to find out the relation between leadership strategies and ethical practice in the Health Care Sector.

*Method:* A convenient sampling was done from the population of Health Care Organization. A self-structured survey questionnaire was distributed among 200 full-time senior management and staff who were conveniently selected. However, we received back just 160 questionnaires and the response rate was 80 percent. Out of 160 we further examined the missing number of the data and unfilled questionnaire. Again we found that around 18 questionnaires were either unfilled completely or missing some of the questions asked. So finally 142 questionnaires were found completed and able to testify the process. The survey instrument was administered to the participants through personal visits. Before handing over the set of survey, participants were contacted to take their informed consent and confirm their willingness to take part in the study. The participants were administered a questionnaire in English language. We utilized questionnaire to collect primary data from the employee, faculty and senior leadership of a Health Care Institution, in which we considered Ethics as dependable variable and leadership strategies, organizational culture, employee's motivation, and employee's satisfaction are independent variables. *Results:* Based on the perspective theories of organizational behavior with regard to organizational ethics, it reveals that individuals who perceive the top management in their organization to be supportive of ethical behaviors will be more satisfied with their jobs. However, the correlations with the leadership strategies and organizational ethics were not significant and due to facts that the actual value (2.882) is less than critical value (3.91) so we have to accept null hypothesis. There is some work on developing cultures that will uphold and promote ethical behavior, and some examination of how aspects of organizational justice might be influenced through organization culture. While considering the descriptive statistics many respondents give preference to organizational ethical values and show agreed

response towards the organizational culture and environment. It was also evident that job satisfaction is increased if people perceived that ethical decision is taken are also practice by the senior leadership resulting ethical practices are implemented. *Conclusion:* The study is completely based on quantitative approach of research, utilized questionnaire to collect primary data from the employee, faculty and senior leadership of a Health Care Organization, in which we considered Organization Ethics as dependable variable and Employee's motivation, Leadership Strategies, Organizational Culture, and Job Satisfaction are independent variables. The results suggested that organizational leaders have fair correlation with the Ethical Dimension and can use organizational ethics as a means to generate favorable organizational outcomes. The other remaining variables Organizational Culture, Job Satisfaction and Employees' Motivation have great correlation with the dependable variable (Organization Ethics). It was also found that individuals, who perceive the top management of the organization have strong value of prevailing culture, to be supportive of ethical behavior and practices what they say, will be more satisfied and motivated and in result enhance ethical practices in the organization. Longitudinal research is needed to test this model in an applied setting and its implication of effective outcome.

*Keywords:* Organizational behavior, organizational ethics, leadership strategies

**11.4****EXPLORING PLAY PATTERN AND BEHAVIORS OF CHILDREN WITH HEARING & SPEECH IMPAIRMENTS IN SPECIAL SCHOOLS IN KARACHI, PAKISTAN**

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*Objective:* Right for equal participation in sports and recreational activities of people with disabilities was emphasized in Persons with Disabilities (PWD). Prevalence of disabilities in Pakistan is 2.49 % (3.2 million), with 7 % population suffering from hearing impairments. Also, 90 percent live in Asian and African countries. Play in early childhood education is highly valued as it contributes to the young child's cognitive, social, and psychological development. The importance is also reflected by teachers that about 75% of children with disabilities need assistance with social skills which is being compensated through play. The objective of the study was to explore the play of children with hearing and speech impairments in special schools of Karachi, Pakistan

*Method:* Play pattern and behaviors were explored for 53 children aged 8-12 years of class I & class II with hearing and speech impairments in two special schools in Karachi, Pakistan. Twelve observations were recorded through semi-structured checklist, using norm-based time sampling procedure, recording various types of behavior in a group play context. Importance of play was also explored through in-depth interviews from respective class teachers.

*Results:* Observational data identified three major play categories, observed and recorded under: a) Social Play; proximity and attentiveness of the focal child to playmates b) Cognitive Play;

level of child's involvement and purpose for engaging in the activity c) Non- Play; marked by absence of focus, wandering with no specific purpose during ongoing activities. Most frequently observed play behavior was; group play under cognitive play; games with rules (run and bug, cricket & ball catch) and functional play behavior; engagement of child in physical activities for the enjoyment of physical sensation. While in non-play behavior active conversation, rough and tumble play and onlooker behavior was recorded. Qualitative findings reveal the importance of play as an essential component for healthy development of the children by teachers. Also, identified a method for the ventilation of pent up emotions, socialization and to overcome their feelings of rejection by significant others specifically at home; caregivers, siblings, and peers. Lack of understating about social needs of the children on parent's part was also highlighted by key informants.

*Conclusion:* Need for capacity building of not only the school staff but also of the caregivers regarding developing an understating towards the developmental phases of children with physical and sensory disabilities was identified. Also to build an understanding about the concept of play and its importance for children with sensory impairments is recommended.

*Keywords:* Sensory impairments, play behavior, children

### 11.5 IMPROVEMENT IN EFFECTIVE COMMUNICATION OF CRITICAL LABORATORY RESULTS AMONG HEALTH CARE GIVERS: A MULTIDISCIPLINARY APPROACH TOWARDS QUALITY IMPROVEMENT AND PATIENT SAFETY

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*Objective:* Assessment of problem and analysis of its causes: Proper logging of critical results would required to be incorporated in ILMS to minimize the chances of missing these results. Compiled report would needed to be generated on daily basis for monitoring the process. Every section of clinical lab would provide the monitoring report at the end of each month. A compiled report would be prepared showing the overall performance of clinical lab. *Objective:* To ensure patient safety through timely communication of critical test results. *Method:* It was a prospective study conducted in the third quarter of year 2012 (August, September & October). Strategy for change: Every section of the laboratory reviews the previous day data of critical results and identifies the root cause, if the results were not communicated. At the end of the month, every section compiles this daily data into a monthly report. A quarterly report of critical results informed was then prepared by every section and percentage of critical results not informed was calculated. This quarterly report was collected from each section of clinical laboratory and then compiled to represent the overall performance. Secondly, daily report of critical results informed was shared with Nursing Practice office by Clinical Laboratory. Compliance regarding reporting of critical results were then

checked at nursing end by spot checking and problems identified as well as shared with clinical laboratory. The current bar of critical result reporting was at 98% which was then raised to 100% so as to be more competitive. *Intervention:* Critical tests and their ranges were identified by each section of Clinical Laboratory. Critical high and low values were incorporated in the system. According to these values, the system gave flagging of critical low values as bold blue and critical high values as bold red. An icon of informing critical results was made available at the result entry option so that the proper documentation of *Results:* In the third quarter of 2012, total volume of Clinical Lab was 2,0114,504 number of patientst. Among them 1,744,802 were outpatients and 266,702 were inpatients. Out of this total volume of patients critical results were 6783. Total number of critical results informed was 6780 which corresponds to the percentage of 99.96%. The results are in the process of compilation and will be shared in the final poster. Initially, few problems like staff awareness regarding proper documentation in the system, no response from given care area etc, were encountered but most of them were resolved gradually. *Conclusion:* By informing the critical results we can improve the overall management of patient. Timely reporting of critical test results are always helpful in providing best care to the patients which is the aim of a hospital who believes in quality care.

*Keywords:* Critical results, quality improvement, patient safety

### 11.6 WORKING WOMEN'S EXPERIENCES IN THE WORLD OF ACADEMIA – TRACING THEIR PATHWAYS: A PAKISTANI PERSPECTIVE

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Working Group for Women, Aga Khan University, Karachi*

*Objective:* Literature search indicates that though women's participation in universities as students is on the rise, but in the teaching hierarchy and in management particularly in top slots, women are still few in number. Literature indicates a dearth of research in investigating this phenomenon. The present research studies experiences of women working within HEC recognized universities of Karachi, further exploring factors facilitating or impeding women's work in academia. *Method:* Mixed methods approach has been used in this study. *Results:* The findings of both phases are in alignment and mutually supportive. Strong link emerged between higher education and higher designation in career. Among factors that facilitated women, support from family played a significant role for realization of career aspiration. Majority of women were facilitated by mother (78.9%) followed by father at (72.15%). Similar results emanated from the qualitative analysis. In quantitative analysis hard work (73%) and personal conviction (68%) received the highest ranking among those factors where women achieved higher education (64%). These analyses correlated closely with qualitative data. Other factors studied and found significant included; accessibility of work place and home, parents and spouse socio economic status, government regulations,

mentorship, availability of scholarships etc. Marriage has not been seen as a significant facilitating or deterring factor in women's rise in their career.

*Conclusion:* The results shall serve as recommendation for women themselves, their families, institutions and policymakers to understand factors facilitating and impeding women's career aspirations. It shall also further improve women's participation as faculty and management staff of public and private sector universities of Pakistan.

*Keywords:* Working women, career aspirations, academia

### 11.7

#### A LARGE ARTERIOVENOUS MALFORMATION OF THE SCALP IN AN ADULT – CASE REPORT OF A CASE MANAGED SURGICALLY

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*Objective:* The treatment of large size spontaneous AV malformation involving scalp is difficult, and many therapeutic approaches have been proposed. To find out the feeding vessels preoperative angiography is mandatory and the need of embolization is ablated prior to excision if all of the supply is from external carotid artery system.

*Method:* A 20-year-old gentle man presented with scalp swelling on parietal area involving pinna. We discussed here a rare case of large sized scalp AV malformation treated surgically without any embolization however prior to surgery angiography was done.

*Results:* Good response to treatment, no recurrence

*Conclusion:* This case was unusual in the sense that it was a large sized lesion which was surgically excised without any significant blood loss and no recurrence was noted, although preoperative embolisation was not done as angiography demonstrated that the vascular supply of the lesion is only from the branches of external carotid artery and no intracranial extension.

*Keywords:* Arteriovenous malformation, scalp, angiography

### 11.9

#### A QUALITATIVE EXPLORATION OF PERCEPTIONS, PRACTICES AND CONCERNS OF PARENTS FOR THE MANAGEMENT OF DISABILITIES IN THEIR CHILDREN- A PERSPECTIVE FROM NORTHERN AREAS OF PAKISTAN

*Sayeeda Amber Sayed, Seema Laasi, Ghazala Rafique*  
*Human Development Programme, Aga Khan University, Karachi*

*Objective:* Society affects the way an individual and their parents accepts, reacts to, and adapts to a disability. This study embarks an understanding on the role of Parents in the Pakistani culture to address disability and to gain a better understanding of the crucial aspects involved in the management of a child with disability in a developing country.

*Method:* 27 focus group discussions were conducted with the help of an interview guide exploring multiple aspects of the

parents' experience of their child with disabilities. Data was transcribed as verbatim. The data is analyzed through N Vivo version 2 for thematic coding which assisted in the identification of major and minor themes.

*Results:* Three main themes were abstracted; experience of extreme stress by the parents of children with disabilities, fears of care management challenges and future expectations from the disabled child. 'Being accepted by the society' was the major fear of the parents which resulted in their stressful lives. The major limitations highlighted by the parents included financial constraints, inaccessible buildings and streets, lack of community-based education and lack of awareness in the society which shuns their children in public spaces especially schools and compels them to avoid venturing out in public which results in the exclusion of the child from education, job opportunities and social participation.

*Conclusion:* Social inclusion of children with disabilities is expressed in the Pakistani policies but without formal support from government and awareness programs for society, such children are placed at risk of serious neglect and a lifetime of social exclusion. Unfortunately, with poverty and lack of support mechanism the negative feelings, anxiety and fear dominate. The findings of this study will help to design and deliver appropriate services for children with disabilities.

*Keywords:* Parents, child with disability, care management

### 11.10

#### A RETROSPECTIVE REVIEW OF ABO-MISMATCH TRANSFUSIONS: ROOT CAUSES AND LESSONS LEARNT

*Farheen Karim, Bushra Moiz, Muhammad Khurshid*  
*Department of Pathology & Microbiology, Aga Khan University, Karachi*

*Objective:* Acute hemolytic transfusion reaction is a life-threatening transfusion reaction resulting from an accidental ABO incompatible red cells transfusion. Acute hemolytic transfusion reactions account for a significant proportion of all transfusion-related deaths. The most important factor leading to mismatch transfusion is patient misidentification. Different areas of patient misidentification during transfusion have been identified by haemovigilance programmes worldwide. A better understanding of the causes leading to mismatch transfusion is required for improving transfusion practices.

*Method:* In this retrospective study, data was retrieved from the blood bank for the total number of allogenic red cell units transfused and the number of ABO-mismatch transfusions from January 2006- August 2012. The medical record charts of all those patients who received ABO-mismatch transfusion and the record available in the blood bank was reviewed in detail to gather information on the root causes of ABO-mismatch transfusion.

*Results:* The total number of transfusions given during the study period were 13,7192. Out of these, 9 cases of ABO-mismatch transfusions were reported. The incidence of ABO-mismatch transfusion was 1 in 15,200 units. The most common cause of ABO-mismatch transfusion accounting for 50% of cases was an error in the final bedside check. The mortality associated with ABO-mismatch transfusion was 2/9 (22%). The risk of death with ABO-mismatch transfusion is 1: 68,600 units.



**Conclusion:** The incidence of ABO-mismatch transfusion at our institution matches the incidence reported internationally. The most common cause of patient misidentification was an error in the final bedside check. Good transfusion practice can be promoted by sharing experiences so that everyone may benefit from the lessons learnt.

**Keywords:** Mismatch, transfusion, hemolytic

#### 11.11

##### ACUTE MDMA TOXICITY WITH MULTIORGAN FAILURE - CASE REPORT FROM A TERTIARY CARE CENTER IN PAKISTAN

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Karachi

**Objective:** MDMA/ecstasy is an underreported cause of toxicity in Pakistan. Drug Abuse Warning Network (DAWN) data have shown a steady increase in emergency department (ED) visits from MDMA abuse. We are presenting a case report of a patient with severe MDMA toxicity in a tertiary care hospital in Pakistan. **Method:** 25 years male presented with altered sensorium in the ED with history of intake of two tablets of MDMA. On examination he was tachypneic, tachycardic and T 42 C. Systemic exam showed bilateral equal, dilated and reactive pupils, brisk reflexes and bilateral upgoing planters. EKG showed sinus tachycardia. Blood tests revealed raised TLC  $24.5 \times 10^9/L$ , BUN 15mg/dl, Cr 2.3 mg/dl Na 145 mmol/L K 6.3mmol/L Cl 104mmol/L Bicarb 7.1 mmol/L. pTT 11.6 seconds and aPTT 40.95 seconds with INR 1.10. ABG showed Ph 6.8. CPK 4320 IU/L. Urine toxicology reported positive amphetamine 1008 (cut off 1000). Patient had severe MDMA toxicity with potentially fatal complications of malignant hyperthermia, severe metabolic acidosis, acute renal failure, low GCS, rhabdomyolysis and raised pTT. Early aggressive management was started. Rapid sequence intubation was performed. Resuscitation with IV fluids, broad spectrum antibiotics and urine alkalinization with IV Bicarbonate. Electrolyte imbalance was treated. Repeat labs BUN 16 mg/L Cr 1.9 mg/dl. Patient had recovered well without manifesting long term morbidity of potentially fatal complications. **Conclusion:** Acute severe MDMA toxicity can manifest with multiorgan failure. Earlier diagnosis along with aggressive treatment will prevent significant morbidity and near fatal complications.

**Keywords:** MDMA, toxicity, Pakistan

#### 11.12

##### AGGRESSIVE NEUROECTODERMAL TUMOR OF THE LEFT CHEST WALL TREATED WITH CHEMOTHERAPY AND VERY EXTENSIVE SURGICAL RESECTION

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**Objective:** Primitive neuroectodermal tumors (PNET) are extremely uncommon, malignant neoplasms affecting mostly

children. They tend to be locally invasive and can metastasize to lymph nodes, adrenals and liver. Recurrence is common, usually occurring at the original site. The treatment for PNETs includes radical resection with wide margins, supplemented with radiotherapy and aggressive chemotherapy.

**Method:** We present here a case of an 11 year old child with an aggressive tumor of the antero-lateral chest wall. **Results:** A surgical resection was planned and successfully completed with negative surgical margins. The tumor recurred within 3 months of the resection and eventually led to his demise. **Conclusion:** The current standard of care includes radical resection with wide margins, radiation and chemotherapy, the combination individualized for each case depending on various factors. These tumors are seen to be locally aggressive and malignant tumors carry a poor prognosis. They have a high rate of local recurrence in which case the average survival period is reduced even further.

**Keywords:** Primitive neuroectodermal tumors (PNET), Chest Wall, Recurrence

#### 11.13

##### AGREEMENT BETWEEN SEROLOGY AND HISTOLOGY FOR DETECTION OF H PYLORI INFECTION

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Karachi

**Objective:** Diagnostic testing for Helicobacter Pylori (H Pylori) can be divided into invasive and noninvasive techniques, based upon the need for endoscopy. Histology of biopsies requires upper gastrointestinal endoscopy for retrieval of a gastric biopsy specimen, considers as standard technique for detection of infection. Serological testing is non invasive, less cumbersome for patients and a global test that evaluates the entire stomach thus reducing the sampling error as possible in invasive techniques. The aim of this study is to determine that whether an agreement between serological measurements of H Pylori antibody and histopathological findings of endoscopic biopsies exists, where histology is comparative and serology is test method.

**Method:** This descriptive cross sectional study was conducted at Chemical Pathology section of Department of Pathology Aga Khan University and Hospital during a period from January to December 2007. A number of 50 subjects were included who had serological and histopathological testing for detection of H Pylori infection. A review of medical records of selected subjects admitting to gastroenterology ward or day care unit for upper GI endoscopy procedure was performed. A preformed questionnaire of clinical details of the subjects were recorded including upper GI symptoms such as nausea or vomiting, upper abdominal pain, burning and bloating. Serological Quantification of H Pylori Ig G was carried out with HpG screen ELISA kit (Genesis Diagnostics, UK)), using an enzyme linked immunosorbant assay for detection of IgG antibodies against H Pylori. Manufacturer's recommended cut-off value was used and results were considered positive when greater than 7 U/ml. For histological diagnosis an expert pathologist characterized the presence of spiral bacteria in the mucosal layer or the surface of epithelial cells on microscopic examination, as a positive test.

**Results:** Among 50 study subjects, 31 (62%) were males and 19 (38%) were females. The mean age of study subjects was 40.59 ( $\pm 15.63$ ) years. Main symptoms were nausea or vomiting, epigastric pain, burning and abdominal bloating but no significant association was observed with symptoms and diagnosis based on serology or histology. Among 50 subjects, 30 (60%) subjects were found seropositive and 25 (50%) had H Pylori infection on gastric biopsy. Overall range of serology was 1.0-74.6 U/ml with the mean of 14.7 U/ml. 5 subjects with no evidence of H Pylori infection by histology, were found seropositive. Agreement between the results of serology and histopathological findings of endoscopic biopsies as gold standard by Cohen's kappa coefficient was found substantial (table 1). Based on biopsy finding the sensitivity, specificity, negative predictive value, positive predictive value and accuracy of serology was found 95%, 80%, 96%, 76% and 86% respectively.

**Conclusion:** A good agreement was found between serology and histological assessment of endoscopic biopsies for the evaluation of H Pylori infection. In comparison with biopsy-based invasive techniques, serology assesses the global presence of H. pylori in the stomach even when the bacteria are irregularly distributed on the gastric mucosa. Serology, are cheaper and more convenient, and thus should be preferred in situations where the additional information yielded by an endoscopy is not needed or in conjunction with other diagnostic testing.

**Keywords:** H Pylori, serology, agreement

#### 11.14

##### AIRWAY MANAGEMENT OF PATIENTS UNDERGOING HEAD AND NECK CANCER SURGERY

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*Department of Anaesthesiology, Aga Khan University, Karachi*

**Objective:** General anaesthesia for surgery in patients suffering from head and neck cancer is a challenging task for anaesthetists because there is potential for difficult airway. **Objective:** The objective of this audit of practice was to review the airway management in patients undergoing head and neck cancer surgery in our institution.

**Method:** The medical records of patients who underwent major surgery for head and neck cancer between January 2006 until December 2010 were retrospectively reviewed for airway management in the operating room. Variables were defined before the start of the audit and a form was designed for data collection.

**Results:** 400 patients were included in the review. 289(72.3%) were male and 111(27.8%) were females. In preoperative assessment, difficult airway was found in 49.8% of patients having Mallampati score III and IV. Airway was managed with tracheostomy in 80 (20%) patients, nasal intubation was done in 177(44.3%) and oral intubation in 143(35.8%) patients. None of the patients required an emergency tracheostomy during airway management. Median hospital stay was significantly higher ( $p < 0.01$ ) in patients who had tracheostomy as compared to patients in whom airway was managed without tracheostomy.

**Conclusion:** Sixty-nine percent of our patients were managed without a tracheostomy. Head and neck cancer patients have potential for a difficult airway but, if managed properly emergency tracheostomy can be avoided.

**Keywords:** Airway management, Head and neck cancer surgery, Tracheostomy

#### 11.15

##### ANALYSIS OF THE POLITICAL ECONOMY OF REDUCING UNDER-NUTRITION IN PAKISTAN

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**Objective:** The National Nutrition Survey 2011 has shown widespread food insecurity and under-nutrition in Pakistan. Under-nutrition is a complex issue requiring coordinated action between different stakeholders including the sectors of health, agriculture, education, poverty reduction, safe water and sanitation. The recent devolution of the health sector to provinces requires mainstreaming of nutrition within policy & development priorities. This study regarding the Political Economy of Under-Nutrition in Pakistan is being conducted by Aga Khan University and the Institute of Development Studies, UK, funded by DFID and it will help identify strategic areas for nutrition related work within and across sectors. The aim of the study is to (i) map stakeholders for nutrition; (ii) identify strategic opportunities and bottlenecks for cross-sectoral work on nutrition in the provinces and federal level; (iii) explore broad enhancements needed within specific sectors and specific provinces. **Method:** In-depth qualitative research, triangulation of findings and cross-sectoral analysis that include (i) a comprehensive desk review of relevant policy and programmatic documents and (ii) interviews and focus group discussions with key stakeholders for stakeholder extent of interest and mobilization in nutrition. The findings will be validated and prioritized in consultative provincial and national roundtables.

**Results:** This study will map federal and provincial stakeholders and their role in nutrition related work in Pakistan. It will help identify opportunities and bottlenecks to inform development and funding of cross-sectoral nutrition strategies.

**Conclusion:** This is still work in progress but the study will assist stakeholders (government, donors, advocates) in developing under-nutrition related strategic planning at the federal and provincial levels

**Keywords:** Political economy, nutrition, intersectoral coordination other information

#### 11.16 ANTIMICROBIAL STEWARDSHIP – AN EXPERIENCE FROM A TERTIARY CARE TEACHING HOSPITAL OF PAKISTAN

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**Objective:** When studies indicate that antimicrobial account for more than 30% of the total pharmaceutical expenditure of hospitals and almost 50% antibiotic prescriptions are considered as inappropriate, it warrants the implementation of antimicrobial stewardship program to promote the judicious use.  
**Method:** Since inception of hospital and pharmacy services, a full-fledged Pharmacy and Therapeutic Committee is operational and overseeing the medication management in the hospital. In year 2005 it protruded an extension as Antibiotic Subcommittee (ABSC) which is comprised of experts from infectious disease (ID), Clinical Pharmacy, Microbiology, and Nursing. The TOR of the ABSC mandated for the oversight of antibiotic formulary, antibiotic prescribing guidelines, drug utilization reviews, IV to PO switch, therapeutic interchange, formulary restrictions, prior approvals from ID, dose optimization through computerized physician order entry system, checks on combination therapies, prospective audits and staff education and feedback.

**Results:** Listed entries were implemented and monitored on regular basis. Regular feedback to users improved the utilization patterns and helped in addressing the dips in compliance to the usage criteria. Average antibiotic compliance to criteria was 77% in 2010 which increased to 85% in 2011. Approximate cost saving as a result of IV to PO switch was Rs 120'000 per year in 2011. Mandatory approval for drugs like Linezolid was successfully implemented and the overall antimicrobial consumption decreased from 35% in 2005 to 30% in 2011.  
**Conclusion:** With collaborative effort of the antibiotic stewardship team and commitment from leadership and group members, the implementation of antibiotic stewardship was successful in our setting. We are moving towards training of ID pharmacists for further strengthening the program.

**Keywords:** Antibiotic Stewardship, Rational use, ID pharmacist

#### 11.17 AORTOESOPHAGEAL FISTULA: UNUSUAL PRESENTATION OF FOREIGN BODY IN A 6 YEAR OLD CHILD

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Karachi*

**Case Report:** An aorto-esophageal fistula is a life-threatening cause of gastrointestinal bleeding and a very rare cause in children presenting to emergency room. We report a case of 6 years-old boy who presented with massive hematemesis secondary to a foreign body eroding the esophagus and part of

proximal innominate artery. It was found on explorative laparotomy after endoscopy and CT angiography. He then suffered a cardiac arrest with further catastrophic bleeding which was controlled after removal of foreign body. A proximal plastic portion dart of a toy pistol was found. It was removed from the aorta and surrounding inflamed cavity. The bypass of innominate artery by aorto-innominate PTFE 5 mm graft was done and closure of aorto-innominate artery was performed. He remained critically unstable and died after 72 hours secondary to hypoxic ischemic brain injury and massive transfusion syndrome.

**Keywords:** Aorto-esophageal fistula, children, foreign body

#### 11.18 APPLICATION AND ADVANTAGE OF BOLD IMAGING

*Imran Ahmed, Abida Faisal, Shehzad. Virani, Muhammad. Abid  
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**Objective:** A basic understanding of how an MR scanner operates is useful in discussing functional MRI. Functional MRI (fMRI) is growing in importance for pre-surgical evaluation of the patients. fMRI helps to localize functional areas in the brain to aid surgeons in planning their approach during surgery. With fMRI, surgeons are often more confident, and can give patients a better idea of their prognosis

**Method:** It was a retrospective study. Total 15 patients were selected with intracranial lesion. Patients are required to the instruction before the procedure "It's absolutely critical that patients know what they are doing inside the scanner - otherwise the data is useless. We want to make sure patients are able to respond appropriately, to assess the motor cortex the BOLD images were acquired after "Finger Tapping. Patient touches his thumb consecutively with the pointer, middle, ring and the little finger. This task is known as finger tapping. During the BOLD measurement the patient first moves the finger of his right hand for 10 measurements then switches over to his left and moves his finger for 10 measurements. When neurons are active in the brain, there is an increase in blood flow and blood volume local to that region of activity. MRI can be used to detect the change in blood flow directly. The idea is that, when fresh blood flows into the slice of the brain that is being imaged.

**Results:** The cortical sensory areas were all activated in all patients. Images were evaluated by Senior Radiologist. In all patient images were clear anatomy, pathology and helpful for surgeries.

**Conclusion:** Various studies have verified that fMRI for pre surgical planning can positively affect a patient's surgical outcome. This technique helps, neurosurgeons by providing additional knowledge regarding the functional area surrounding as space occupying lesion thereby increasing surgical confidence and allowing surgeons to be more aggressive with their surgical plan

**Keywords:** Functional MRI, bold measurement

### 11.19 ASPERGILLOMA: EXPERIENCE IN AKUH OVER 9 YEARS

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*Department of Surgery, Aga Khan University, Karachi*

**Objective:** An aspergilloma is a fungus ball (mycetoma) that develops in a preexisting cavity in the lung parenchyma. It is most commonly formed in old healed tuberculous cavities. It is caused by aspergillus species. The commonest presentation is hemoptysis. The aim of our work was to document our experience of managing aspergilloma cases at AKUH over a period of 9 years.

**Method:** There were 56 cases of aspergilloma over last 9 years who underwent surgery. All 56 cases were reviewed with the help of questionnaire. Analysis was done on SPSS v16.0 and Excel.

**Results:** Of 56 cases, 45(80.35) were males and 11(19.60%) were females with mean age of 36.4 years. 52 had aspergilloma in upper lobes while 2 patients had bilateral aspergilloma. All patients presented with hemoptysis and CT was done in all of these patients. 49(87.5%) had history of T.B. 53(94.6%) patients underwent lobectomy while pneumonectomy was done in 1 patient. Post operative complications were noted while in long outcome, 2 patients expired.

**Conclusion:** Surgery is the definitive treatment for Aspergilloma.

**Keywords:** Aspergilloma, lobectomy, pneumonectomy

### 11.20 ASSESSING IMPACT OF LONG ED STAY ON PATIENTS' MISSED DOSES AND DELAYS

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**Objective:** In Emergency Departments (ED) delays in discharge are rampant due to waiting for inpatient admission, consultation, report or transport. Holding/boarding leads to ED crowding, diversion, delay in care, prolonged lengths of stay (LOS) for admission or transfer outs. At AKUH, being the tertiary care and state of the art hospital, our ED continuously experiences a huge patient influx. Our estimated LOS is long and often beyond 6 hours benchmark used by various countries. **Problem:** It was observed that patients held in ED longer than 6 hrs often require subsequent doses of drugs particularly those dosed as q8h, q6h, q4h intervals. Our ED Computerized Physician Order Entry system (CPOE) permits just stat orders (auto-stopping at 1 dose). Thus doctors have to remember and re-enter subsequent doses for prolonged stay patients. With the hypothesis of delay and omission in doses, data was gathered and analyzed. For simplicity, data review was confined to antibiotics only. **Method:** Antibiotics being the most frequently ordered drugs in ED were focused for the retrospective review. Also because the majority of antibiotics require subsequent doses within next 4-

24 hrs. Hence electronic record of 100 such patients with ED stay more than 10hrs was retrieved and reviewed. Other factors for intended dose omissions such as renal/hepatic dose adjustment, switching to other antibiotic or therapy no more needed (based on C/S and CBC reports) were ruled out.

**Results:** On an average each patient received 2 antibiotics. Doses were missed in 51% cases while delay occurred in 34% cases in which subsequent doses were received. Based on findings a team comprising of ED physicians, pharmacist, nurses and IT staff brainstormed the solution. CPOE system was tailor made for accommodating the prolonged LOS patients' dose needs and avoiding omissions/delays in ED. As a long term solution the stakeholders are also exploring the possibility of handing over such patients to inpatient until admitted or discharged. **Conclusion:** Long stay in ER without proper CPOE backup or inpatient coverage does impact the timely dose administration and also results in significant dose omission rates.

**Keywords:** Dose Omission, LOS in ER, Delay in ordering

### 11.21 PATIENT PRIVACY

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**Objective:** Patients' satisfaction with privacy whilst : The preservation of privacy and dignity are basic requirements for all patients whilst in hospital. Privacy is essential in the clinical areas. It is also essential in the public areas, especially at reception or when discussing referral details and appointment arrangements. The right to privacy and dignity should be respected during procedures – even if the patient is unconscious. A questionnaire can help to identify problems of privacy and dignity and will enable the department to make changes. It can also help to draw the attention of staff to specific problems. in the Department of Radiology.

**Method:** Patients attending the Radiology department for different procedures during one month (August2011) time period were selected randomly and requested to fill the questionnaire. Patient filled the questionnaire properly and gives the suggestion. **Results:** 100 patients given questionnaire. 90 patients fill the questionnaire and 10 patients refused the question paper 40% patient write down the reception area is acceptable 60 % patient write down the examination room privacy is excellent. 30% patient write down the changing room male and female is good but room is so small.

**Conclusion:** Care will be provided with full recognition of the individual need for privacy in treatment and care along with protection of confidentiality of your health information.

**Keywords:** Patient privacy, referral details, confidentiality of patient information

### 11.22

#### BREACH OF CONFIDENTIALITY: UNINTENTIONAL COMMON PRACTICE DUE TO MISUNDERSTANDING AND UNAWARENESS

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*Objective:* Advancement in medical technology has helped man kind in several ways and no one can deny the contribution of medical technology in the field of medicine. On the other hand technology has also given rise to some ethical issues. The issue of confidentiality is one of those issues. Patients keeping their trust on physician reveals all concerned confidential information to their physician with surety that physician will keep it confidential. It has been common in practice that, physicians unintentionally breach their patient's confidentiality by discussing cases and history of their patients in public places, hospital elevators, and with their students. Increasing workloads lead to discussions of patients in public areas which is not an acceptable excuse. The very next person present there listening the discussion could be a patient's friend, relative, or media member that is not entitled to this privileged information.

*Method:* In a tertiary care hospital (Quetta) a patient (X) after visiting his physician (D) came to know that his physician has breached his confidential information to the people while discussing the case (by pointing patient's name) with medical students. The information revealed was meant to be confidential which the patient was unwilling to share with anybody else other than his physician.

*Results:* It has been common in practice that, physicians unintentionally breach their patient's confidentiality by discussing cases and history of their patients in public places, hospital elevators, and with their students. It is widely noticed that in most tertiary care hospitals more than one patient are being attended at a time where confidentiality is not being understood as patient basic right.

*Conclusion:* Maintaining confidentiality is increasingly difficult in modern medicine as many people have access to medical records but all possible measures should be taken to safe guard patient's confidential information to maintain the value of trust between patient and physician. As confidentiality is not only between the individual and the advisor but it is also between the individual and the organization for this reason a clear cut policy should be made by health care organization.

*Keywords:* Bioethics, Confidentiality, Ethical

### 11.23

#### CAN CLINICAL EVALUATION DETERMINE THE NEED FOR PELVIC X-RAY IN AWAKE AND STABLE BLUNT TRAUMA PATIENTS? (AN INTERIM ANALYSIS)

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*Objective:* Pelvic fractures are common and can be potentially life threatening. A protocol driven approach calls for routine pelvic radiography in blunt trauma to exclude pelvic fractures. Value of pelvic x-rays has been questioned in hemodynamically stable, neurologically intact patients with no distracting injuries. We studied this particular subgroup of patients and compared the findings of clinical evaluation with routinely performed pelvic x-rays.

*Method:* A prospective observational study was conducted at the Aga Khan University Hospital from July- September 2012. Exemption from Ethical Review Committee was obtained. The sample size was calculated to be 101. Estimated time of the study was six months, interim results of which are being presented. Data was collected from patient charts and analysed using SPSS v.20. Sensitivity, Specificity, Positive Predictive Value (PPV) and Negative Predictive Value (NPV) were calculated. *Results:* We are presenting the interim results of the calculated sample size of 51 patients. Mean age was 37 years ( $\pm$  14.2). On clinical examination findings of bruising, hematoma of pelvic region, tenderness at pubic symphysis, tenderness at iliac crest and abnormal range of motion of hip joints was seen in 12%, 2%, 10%, 14% and 2% respectively with 100% sensitivity of having pelvic fracture. Specificity of Bruising, Hematoma, Tenderness at pubic symphysis, Tenderness at Iliac crest and Range of Hip joint movement was found to be 93.7%, 100%, 95.8%, 96.8% and 97.9% respectively. Chances of having pelvic fractures in Bruising, Hematoma, Tenderness at pubic symphysis, Tenderness at Iliac crest and Range of Hip joint movement was 50%, 100%, 60%, 42.8% and 75% respectively. Chances of not having pelvic fractures in patients with no positive findings on clinical examination were noted to be 100%.

*Conclusion:* Since this is an interim analysis of half the calculated sample size, no conclusions can be drawn. However, these findings are encouraging that clinical examination of the pelvis should reliably rule out significant pelvic fracture in the subgroup of patients who are awake and alert blunt trauma patients with no distracting injuries.

*Keywords:* Pelvic x-ray, clinical evaluation, radiography

**11.24****CHALLENGES FACED IN SETTING UP A TISSUE BANK IN A THIRD WORLD COUNTRY**

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**Objective:** Undertaking studies on human biomaterials requires a repository of high quality, ethically approved, surplus, samples and associated clinic-pathological and demographic data. In a middle to low income country like Pakistan this is a major challenge due to many confounding factors. The concept was evolved as a partnership involving surgeons, pathologists, basic scientists, technicians and administrators. The objective was to develop a repository of biological samples and associated data which would be made available to researchers from within the University for ethically approved studies. The process involved: a. Discussions between the various groups; b. Developing consent forms (English and urdu); c. Developing forms for collection of clinico-pathological and demographic data; d. Engaging with the University research ethics Committee. e. Training nurses/clinicians in obtaining of consent; f. Training laboratory tissue bank g. Costing the project h. Sharing the objectives with researchers across the university; i. Developing a review of applications process; j. Setting up the tissue bank and associated standard operating processes

**Method:** Samples were collected from the following sites : oral cavity (n = 639), pharynx-laryngeal (n = 460), thyroid (n = 53), breast (n = 681), Gynecological cancers e.g. ovarian, uterine, cervical (n = 110), colorectal cancers (n = 55) and brain tumors (n = 50). While these numbers represent the patients who consented to contribute their tissue samples blood and relevant data, in quite a few cases the specimens could not be collected due to insufficient sample quantity and surgical team's inability to inform the sample collectors in time. We also assessed the quality of samples by measuring RNA, DNA and protein of selective numbers of cancer tissue and relating those with time spent to snap freeze samples in liquid nitrogen before transporting to the lab for storage.

**Conclusion:** We determined that a relationship with the tissue bank team, and surgeons as well as pathologists is important aspect for the collection of quality samples and data. Other critical issues are development of a dedicated team, prior training in the collection, processing of acquired tissue samples and study subjects cooperation are some of the challenges faced in setting up a tissue bank in a third world set-up.

**Keywords:** Tissue bank, third world country

**11.25****CHARACTERISTICS AND OUTCOMES OF HYPONATREMIC PATIENTS PRESENTING TO THE PEDIATRIC EMERGENCY DEPARTMENT OF A DEVELOPING COUNTRY**

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**Background:** Hyponatremia has garnered the acclaim of being the most frequent electrolyte disorder specially in hospitalized children. Untreated hyponatremia carries a high potential of significant neurological morbidity and mortality. The incidence of hyponatremia in children presenting to emergency room is scarce.

**Objective:** To determine the frequency, characteristics and short-term outcomes of hyponatremia in children presenting to the Pediatric Emergency Department of a developing country.  
**Method:** A retrospective observational study was conducted at the Pediatric Emergency Department of the Aga Khan University. Data on 4200 children under fifteen years of age admitted in the emergency room between January and June 2011 were collected. Hyponatremia is defined as serum sodium < 135 mEq/l. The serum sodium was measured by ion selective electrodes (ISE) method in our laboratory.

**Results:** The prevalence of hyponatremia was 8.2% (348/4200). 298 (86%) had mild hyponatremia, 39 (11%) had moderate hyponatremia and 9 (3%) had severe hyponatremia. There was a male predominance; 205 (59.2%); male: female (M: F) ratio 1.5:1. Acute gastroenteritis and lower respiratory tract infections were the most common underlying diagnosis (43%). Unadjusted odds of mortality were higher with increasing severity of hyponatremia; with infancy and with patients presenting with sepsis. The overall mortality was seen in 4 patients (1.2%).  
**Conclusion:** The frequency of hyponatremia in children in the Pediatric Emergency Department was 8.2% with overall mortality of 1.2%. Severe hyponatremia in infancy and sepsis is associated with high morbidity and mortality.

**Keywords:** Hyponatremia, emergency department, children

**11.26****CHARACTERISTICS OF CHILDREN ADMITTED WITH FALL RELATED INJURIES: 11 YEARS DATA FROM TERTIARY CARE HOSPITAL KARACHI, PAKISTAN**

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**Background:** Unintentional injuries due to fall are an important cause of hospitalization in children from emergency department in children under 18 years. Aim: The aim of this study is to report the existing baseline facts on fall related injuries requiring hospital admission.

**Method:** This was a retrospective analysis of all children admitted from emergency department with fall related injuries from 2000-2011 at Aga Khan Hospital, Karachi, Pakistan. The data was collected by the ERMS of all children under 18 years of age presenting with the history of fall to the emergency departments and required hospital admission.

**Results:** There were 4649 children admitted with fall related injuries. Of these 3313(71%) were males with male to female ratio of 2.5. Majority of children (1701, 36.6%) admitted were between 1-5 years. Most common injuries requiring hospital admission were limb injuries (37.3%) followed by head and neck (29%) and facial injuries (19%). In children less than 1 year the most frequent injury was head and neck 53% while in older children it was limb injuries (35% in 1-5 years, 41% in 6-12 years and 39% in > 13 years respectively). Most of children were admitted for laceration repair (37,8%) while 23% for fracture fixations. The median length of stay was 2 days with abdominal injuries requiring the most prolonged stay with median of 7 days, followed by thoracic injuries (median stay was 5 days). The highest month of admission was July corresponding to vacation.

**Conclusion:** Fall is a common cause of hospitalization in children with prolonged in hospital length of stay.

**Keywords:** Fall, emergency, Pakistan

#### 11.27

##### IMPACT OF ISO-9001 CERTIFICATION TO ATTRACT CORPORATE CLIENTS FOR HOSPITAL SERVICES

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**Objective:** The broad research question guiding this study was that "Does ISO 9002 Impact on attracting corporate clients to avail the services of a hospital", and if so with what benefits and costs?" A large number of specific objectives were persuaded to analyze the pros and cons of corporate and individual clients, impact of ISO 9000 series certification on business performance, the relation between ISO 9000 series with valuable customer relations, the positive effect of ISO 9000 certification on corporate customer satisfaction, the positive effect on organizational competitiveness, and to measure the importance of ISO 9000 certification series for Corporate Clients.

**Method:** The purpose of study was descriptive, and it was non-contrived study with field experiment. The time horizon was cross sectional. Information collected through convenience sampling. The sampling units selected for analysis are adult both male and female of employees and patients of local ISO certified hospital. To collect primary data, a self-structured survey questionnaire was distributed among 60 full-time management and officer level staff who deal with corporate client, and was also distributed corporate clients of same institution, who were conveniently available. However, later, 11 questionnaires were declared void due to respondents' non familiarity with the ISO certification standards.

**Results:** While conducting the research study on topic, the significant results towards the improving in business performance of health care organization, valuable customer relation, positive

effects on corporate and on private customer satisfaction were found. The organization also got strength by developing competitiveness edge over other non-ISO certified organization. Four independent variables i.e. business performance, customer relation, corporate customer satisfaction and organizational competitiveness were analysed. In conclusion the above model is ideal to accept with certain limitations as none of the hypothesis is rejected

**Conclusion:** The study is completely based on quantitative approach of research, utilized questionnaire to collect primary data from the employee and corporate clients of a local healthcare institution. The research showed as to what factors ISO certification affect to help in improving the services of the hospital. The findings revealed that ISO 9002 certification plays a significant role in improving the services of hospital, which is ultimate result the in attracting the customers in general and corporate client in especial

**Keywords:** ISO certification, services of hospital, corporate clients

#### 11.28

##### COMPARING REALITY WITH PERCEPTION-REAL TIME PATIENT SATISFACTION SURVEY IN ED

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**Objective:** 1) To conduct a 'real time patient satisfaction survey' using the same methodology as is being used by Marketing Department in order to have an objective assessment of ED's performance in terms of promptness of service and various other service dimensions (2) To have a priority wise assessment of patient satisfaction on a real time basis

**Method:** A structured questionnaire similar to the one in practice by marketing services of hospital was used to capture patient's feedback on multiple dimensions of service quality in the ED. Patients were requested to respond after verbal consent in terms of strongly agree (5), agree (4), neutral (3), disagree (2) and strongly disagree (1). Two shift of day had been selected randomly on different days. Survey was conducted in ED premise for 2 weeks by volunteers. Before the actual survey, mock exercises were carried out just to orient the volunteers with ED operations. After collection the data was directly handed over to marketing department for analysis to avoid any bias. Respondents were either patients themselves or their relatives. Triage related data of the patients were retrieved from electronic record management system.

**Results:** Total 226 patients were interviewed, out of which 24% were P I, 35.1% were P II and 41.1% were P III patients. Overall satisfaction of all patients were 87.6% as compared to 71% in real vs telephonic survey. Overall satisfaction in different triage categories were 87%, 84.8% and 77.4% in P I, P II and P III respectively, not compared with the telephonic survey because they are not doing it according to triage categories. Time taken to get an ER bed in real time is 91% as compared to 74% in the telephonic survey. Time taken until beginning of treatment after getting an ER bed in real time is 83% versus 78% in the telephonic survey. Time taken to be attended by the triage staff at the counter

in real time is 87% versus 90% in the telephonic survey.  
*Conclusion:* Patient satisfaction was found to be better in real time survey than telephonic survey. Overall satisfaction was better in high acuity patients than low acuity. The probable reason could be prompt treatment in critical patient and long waiting time in low acuity patients.

*Keywords:* Patient satisfaction, emergency department, Pakistan

### 11.29

#### COMPARISON OF DIGITAL SCOUT FILM OF NON CONTRAST ENHANCED COMPUTERIZED TOMOGRAPHY (NCCT) SCOUT FILM AND KIDNEY-URETER BLADDER RADIOGRAPHY FOR URETERIC CALCULI

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*Objective:* Urolithiasis is a leading cause of chronic renal insufficiency and renal failure in our region. Around 70-80% stone are radiopaque. Gold standard investigation for urolithiasis is NCCT with sensitivity and specificity of 99-100%. The sensitivity of NCCT scout film is a subject of discussion particularly in ureteric stones. So our objective is to determine sensitivity of digital NCCT scout film and kidney-ureter bladder (KUB) radiography for ureteric calculi.

*Method:* A prospective study was done at Aga Khan University Hospital, Karachi, Pakistan. We assessed radiology of 100 patients, who underwent ureterorenoscopy from January 2008 to 30th June 2011. All patients had NCCT as well as X-ray KUB. Digital scout films were reviewed by a senior radiologist and X-rays by another radiologist on monitor with resolution power of three mega pixel (TURPIX). The demographic data, stone visibility, size and location and Hounsfield unit was recorded. Data was analyzed on SPSS version 17. P-Value of <0.05 was considered as significant.

*Results:* Out of 100 patients, 77% were male and 23% female with mean age of 43 years. Forty four were proximal, 19 mid and 37 distal ureteric stones. Mean size of stone was  $9.07 \pm 3.72$ mm. Fifty nine percent of proximal ureteric stones were seen on NCCT scout film while 84% were visible on X-ray. In mid ureteric stone, sensitivity of NCCT scout film and X-ray was 26 and 47 percent respectively. In the distal ureteric stones the sensitivity of NCCT scout film and X-ray was 62 and 81 percent respectively. Fifty four ureteric stones were visible on NCCT scout film and 76 were visible on X-ray, making sensitivity of 54% and 76% respectively. Sixty four ureteric stones had Hounsfield unit of >500, out of which 65% were visible on scout (P=0.003) and 87% were seen on X-ray KUB (P=0.001).  
*Conclusion:* X-ray KUB is more sensitive than NCCT scout film for ureteric stones. We conclude that if the stone is visible on NCCT scout film, the X-ray KUB can be avoided and these patients can be followed with X-ray KUB. A majority of stoned with Hounsfield unit of >500 are radiopaque.

*Keywords:* Hounsfield units, calculi, CT

### 11.30

#### CT GUIDED PERCUTANEOUS LUNG BIOPSY: A DEPARTMENTAL AUDIT

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*Objective:* The objective of this study was to evaluate the success and complication rate of CT guided percutaneous lung biopsy performed in our department.

*Method:* This was a retrospective study conducted in Radiology department of Aga Khan University Hospital. The sample size for this study was 100 patients of lung biopsies from August 2011 to October 2012.

*Results:* The result showed that among 100 patients, 71 were male and 29 were female. Overall complications were mild and seen in 15 patients. Complications occurred in 2 patients (2%) during the procedure while other 13 patients (13%) had complication post procedure. Among these patients 40% had Left sided lung mass, 35% had Right sided lung mass, 7% had metastasis, 4% with lung nodule, 3% with Ewing's sarcoma, 8% with lung carcinoma, 1% with lymphadenopathy and other 2% patient's history was not provided. Mild pneumothorax was observed in the 12 patients with pulmonary lesions. In only total 2 of 100 patients (2%) developed a mild hydro pneumothorax, hemoptysis was observed in 2 patients (2%) and was transient with spontaneous improvement.

*Conclusion:* CT guided percutaneous lung biopsy is relatively safe procedure. The complication rates in our department are comparable to internationally reported literature.

*Keywords:* Biopsy, complication, lesions

### 11.31

#### CT SCAN HEAD: INDICATION AND UTILIZATION

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*Objective:* To evaluate the prevalence of abnormalities on CT (Computed tomography) Scan head performed for various clinical symptoms.

*Method:* This study was conducted in Aga Khan University Hospital (AKUH). This is retrospective cross sectional study. The data collection was from March to April 2012. The sample size comprised of 100 patients who came for CT Scan Head at Radiology department. Various indications were recorded and CT scan reports were reviewed. Different parameters as age, sex, clinical indication.

*Results:* The result from the data showed out of 100 patients, 68 were male and 32 were female. Overall 71 patients had positive findings in CT Scan Head, while 29 patients had normal CT scan reported. Out of 71 patients 10 patients had subarachnoid hemorrhage, 8 infarcts, 11 hematomas. Rest of the patients had cerebral edema, ischemic changes, midline shift, hydrocephalus, contusions and tumors.



**Conclusion:** Most of the examinations performed are positive for findings indicating proper utilization justifying the radiation given.

**Keywords:** Computed tomography, findings, infarcts

### 11.32

#### DEAD ON ARRIVAL COMING TO EMERGENCY DEPARTMENT IN PAKISTAN

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**Objective:** Pre-hospital and hospital based emergency care is critical component of any healthcare system. Much of the death and disability can be prevented by early and especially pre-hospital interventions for major diseases. Studies from Pakistan showed poor pre-hospital and facility based care system. We aimed to analyze the frequency and pattern of "dead on arrival" (DOA) patients coming to ED across Pakistan.

**Method:** Information on 1,518 dead on arrival patients registered in the surveillance system was included. Five public and two private tertiary care hospitals from all provinces of Pakistan were included in the study. Duration of the study from December 2010 till March 2011. Data collection tool developed and was approved by all departmental heads. Designated teams collected the data. Data collected on basic demography, presenting complaints, procedures and outcomes.

**Results:** Majority of the patients were male (63.9%) and most of the patients were more than 40 years of age (58.7%). Interestingly 20% of patients were young adults of 20-29 years, in which the reasons identified were road traffic injuries (51.8%), fall (17.5%) and assault (12%). Only 4.6% patients arrived by the ambulance while 45% was brought by public or private transport. Major presenting complaints were fever (16.8%), injuries (3.1%), chest pain (2.8%), nausea/vomiting/diarrhea (2.2%), abdominal pain (1.2%) and shortness of breath (1.2%).

**Conclusion:** Majority of DOA patients were more than 40 years of age. In patients with age group 20-29 years the major reasons were un-natural causes like road traffic injuries, falls and assault.

**Keywords:** Dead on arrival, emergency department, Pakistan

### 11.33

#### DETERMINING THE DELAYS IN MEDICATION PRESCRIBING AT A TERTIARY CARE TEACHING HOSPITAL OF PAKISTAN

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**Objective:** To determine if there is unnecessary delay/omission in medication prescribing process by randomly collecting data from various wards of the hospital

**Background:** Bringing improvement in the medication management system is an ongoing

process and reducing the unnecessary delays is an important aspect for quality patient care. The delays can occur at all three stake holders of the medication management process i.e. physicians at prescribing, pharmacists at reviewing and dispensing and nursing at administering the drugs. Emphasis is often made to quantify the delays at medication dispensation and administration process, to our knowledge, this is first attempt made to quantify the delay at medication prescribing process in our country.

**Method:** In order to determine if there are delays in medication prescribing, the pharmacists present in the wards and nursing staff collected the data. Time of physician verbal orders in the round and time of order entry in the Computerized Physician Order Entry (CPOE) system was noted. A total of 146 medication orders were sampled during the data collection period of 15 days. Sample was taken from subspecialty (medicine, surgery, pediatrics, intensive care units).

**Results:** Mean time difference between verbal medication orders and order entry in CPOE system was 97 minutes ( $p = 0.5$ ). Major delay was noted in prescribing electrolytes (267 minutes) followed by CNS drugs (187 minutes) and antibiotics (117 minutes). Mean time difference for urgent medication orders was 91 minutes.

**Conclusion:** Our results show statistically significant delays at the stage of prescribing of medications.

**Keywords:** Delay in Medications, medical prescription

### 11.34

#### DYNAMIC ORDER ENTRY SYSTEM: ENSURE ROBUST AND APPROPRIATE SUPPLY CHAIN OF MEDICATION

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**Objective:** Objective is to develop robust supply chain mechanism, to ensure timely supply of medication in appropriate quantity and which ensure proper patient treatment and compliance. Medication management module. Basic objective is to enhance availability of medication for To streamline supply chain of medicine through system based approach. In a tertiary care hospital setting, appropriate medication supply chain has an important role in assuring resilient and robust patient care. In this competitive environment to ensure timely supply of medicine is always a challenging job. Non-availabilities of medicine hamper patient care and satisfaction, gravely thrashing smooth medication management system. To resolve this issue PHA and MMD develop a group, this group intervene current order entry system and suggested to intervene it into Dynamic Inventory management system.

**Method:** Initially a pilot has started for 4 months from June, 2012 till Sep, 2012. Following 04 contracts which include 67 Pharma products. Following 04 pharmaceuticals were picked in consensus with Pharmacy as problematic vendors and causing issues in timely supply of medication. System based on following features; System will send auto alert thru email on daily basis telling which contracts to be reviewed for reordering; that alert will be received to designated Pharmacy and MMD colleagues for

detailed report generation For each delivery separate SPR and PO will be generated that will give numerous benefits like compete tracking of each demand, supplier performance, backorders. Each requirement will contain “expected delivery date” from PHA/Purchase for vendor so they would know when to make delivery. It considers weighted average actual consumption giving different weightages to 3, 6 and 12 months Will give ample time to suppliers to deliver goods to AKU Concept of lead time, safety stock, EOQ and review period days are included in it.

*Results:* The whole process contributed significantly towards patient’ care through minimizing non-availability of medication and assure robust and sustainable solution . The chances of non-availability decreases by many folds. Non-availability prior intervention was 78 medicines in four months, which improves significantly, post intervention results has only non-availability of 06 medicine in same four months .

*Conclusion:* Standardization of order entry system and optimum stocking of medicine brought significant process improvement in terms of availability of medicine. Non-availability decreases to 06 items from 78 items in same period. This improvement in accessibility of medication improves patient care significantly. After the success of this pilot project, this system will be implemented in other areas too with consensus of user department.

*Keywords:* Dynamic order entry, robust supply chain of medication

### 11.36

#### EFFECT OF DEXAMETHASONE ON INTRAOPERATIVE AND POSTOPERATIVE PAIN IN UNILATERAL INGUINAL HERNIA SURGERY IN DAY CARE ANAESTHESIA

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*Objective:* To compare the analgesic efficacy of Fentanyl (1 mcg/kg) alone with Fentanyl (0.75 mcg/kg) and Dexamethasone (8 mg) combination, in day care unilateral inguinal hernia surgery patients.

*Method:* A total of 64 patients were divided in to two equal groups. One group received intravenous placebo injection (labelled as study drug) and Fentanyl 1 mcg/kg at induction (labelled as fentanyl study). Other group received intravenous Dexamethasone 8 mg (labelled as study drug) and Fentanyl 0.75 mcg/kg at induction (labelled as fentanyl study). Anaesthesia was induced in all patients with Propofol 2 mg/kg slowly over 30 seconds followed by Atracurium 0.6 mg/kg i/v to facilitate tracheal intubation and controlled ventilation. Intraoperative analgesia was assessed by haemodynamic variables by comparing with preoperative baseline and for postoperative pain, patients were asked to evaluate pain on visual analogue scale (VAS).

*Results:* The mean HR, SBP and DBP at 1 min, 5 mins, 20 mins and at 30 mins after incision between groups were significantly high in group-A (p-values < 0.05) Intra operative rescue analgesia medication was given in 32 (100%) and 19 (59.4%) patients in Group-A and Group-B respectively (p-value = 0.0002) Mean pain scores measured at different time periods post operatively were significantly high in group-A as compared to group-B (p-values = 0.001).

*Conclusion:* We conclude that 8 mg of preoperative intravenous dexamethasone combined with 0.75 mcg/kg of fentanyl is effective in reducing postoperative pain after unilateral inguinal hernia surgery in the immediate postoperative period.

*Keywords:* Postoperative pain, dexamethasone, day care surgery

### 11.37

#### EFFECT OF PREGABALIN ON HEMODYNAMIC RESPONSE TO TRACHEAL INTUBATION

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*Objective:* Laryngoscopy and intubation, one of the essential parts of anaesthesia in most of the surgical procedures can lead to a number of potential hemodynamic complications and side effects. Many drugs have been tested to attenuate the hemodynamic response due to tracheal intubation. Pregabalin is a new drug which is chemically related to gabapentin and has analgesic, anticonvulsant, anxiolytic, and sleep-modulating activities. In this trail, pregabalin is evaluated for its effects in attenuating the hemodynamic response associated with tracheal intubation. *Objective:* To compare the mean heart rate (HR) and blood pressure (systolic and diastolic) at 0, 1, 3, 5 and 10 minutes of tracheal intubation between pregabalin and control group in patients undergoing general anaesthesia at a tertiary care hospital. *Method:* ASA I and II patients undergoing elective surgical procedures under general anaesthesia with tracheal intubation were randomly divided into two groups: pregabalin (Group A) and placebo (Group B), and received the respective drug one hour before anaesthesia. Blood pressure and heart rate were recorded at 0, 1, 3, 5, and 10 minutes of tracheal intubation. *Results:* Demographic data were comparable in both the groups. There was no significant difference in systolic and diastolic blood pressures after intubation between the two groups. However the heart rate was significantly lower in pregabalin group at 3 and 5 minutes after tracheal intubation as compared to placebo (p-value 0.026 and 0.001 respectively).

*Conclusion:* This present study concludes that pregabalin does not attenuate the hypertensive response to tracheal intubation, but blunts the tachycardic response at 3 and 5 minutes of tracheal intubation.

*Keywords:* Pregabalin, hemodynamic response, tracheal intubation

### 11.40

#### ENHANCING THE PATIENT SAFETY BY ESTABLISHING WARFARIN MANAGEMENT SERVICE IN A TERTIARY CARE TEACHING HOSPITAL OF PAKISTAN

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*Objective:* One large inpatient study concluded that anticoagulants accounted for 4% of preventable Adverse Drug Events (ADEs)

and 10% of potential ADEs. Warfarin, an oral anticoagulant, is often classified as 'high risk' drug in most international literature. Underuse and overuse of warfarin is highly associated with morbidity and mortality. Warfarin has variable and difficult to predict pharmacokinetics, making its dosing and monitoring challenging for clinicians. Careful drug monitoring in hospitals can reduce ADEs, suggesting that some events are due to inadequate monitoring of therapies, patient counseling and doses. *Method:* Route cause analysis team was formed to determine the causes of warfarin associated ADEs in the hospital. The team came up with four tier work plan to improve the safe usage of oral anticoagulants. These include: Declaring warfarin as High Alert Medication. Patient education program. Guidelines for prescribing & monitoring. Centralized INR monitoring – AMS. Intensive training was provided to the pharmacists dealing with warfarin. Patient education program was launched simultaneously in the inpatient and outpatient areas with provision of warfarin education booklet.

*Results:* Total of 30 patients were assessed "head-to-toe" by the warfarin pharmacist in one month, 4 instances for over use while 20 instances of under use of warfarin were reported (based on INR). In inpatient areas, 24 patients were counselled and provided with warfarin education booklet.

*Conclusion:* Pharmacist managed warfarin program is resulting in better patient understanding, protocol bound dosing and monitoring, thereby reducing the harmful events of under/over use of warfarin

*Keywords:* Anticoagulation, Warfarin, DVT and Anticoagulation

#### 11.41

##### EPIDEMIOLOGY OF ACUTE POISONING COMING TO ED IN A LOW INCOME COUNTRY- PAKISTAN NATIONAL EMERGENCY DEPARTMENT SURVEILLANCE STUDY

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*Objective:* Acute exposure due to poison is one of the common reasons for coming to emergency department all over the world. In Pakistan, the epidemiological data on poisoning is very limited as a whole, as there is limited poison information surveillance system. We aimed to find out the frequency, demographic information, underlying reasons, nature of agent involved and outcome of poisoning coming to ED across Pakistan. *Method:* This is a cross sectional register based study during 3 month period from November 2010 to January 2011. Patient of all age group presented with poisoning to one of the seven major tertiary care centers from all four provinces of Pakistan during study period were included. Information about patient demographics, type of agent involved, reason for poisoning and outcome were collected on standard questionnaire. *Results:* Poisoning contributed 8% (233) of patients, out of total 2, 74,436 ED visits in Pakistan. Of these, 63.5% were male. Majority (54%) of these patients were young adult with age group 19-44 years of age, while children and adolescent comprised

19% of the total patients. Types of poisoning included chemical/gas in 102 patients (44%), drug/medicine in 63 patients (27%), alcohol in 39 patients (17%) and food/plant in 14 (6%) patients. In half of the patients poisoning was intentional. A total of 9% of the patients were admitted and 5% expired. *Conclusion:* Poisoning is a common ED presentation especially in young adults in Pakistan. Chemical and gas poisoning are major type of poisoning.

*Keywords:* Poisoning, Pakistan, Emergency department, epidemiology

#### 11.42

##### BURDEN OF MENTAL HEALTH DISORDERS AMONG CHILDREN IN PAKISTAN: A LITERATURE REVIEW

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*Introduction:* Globally mental health is known to contribute 30% towards the total burden. Child mental health is a neglected in Pakistan despite of having a higher burden of intellectual disabilities and psychiatric illnesses among children literature is scarce regarding the burden of mental health illness among children in Pakistan. A detailed review is needed for dissemination of the existing knowledge to enhance the understanding regarding the current situation and burden of various mental health disorders among children in Pakistan and to raise the awareness to take prioritized actions.

*Objective:* To assess the burden of mental health disorders among children in Pakistan.

*Methods:* PubMed was searched using Keywords "Mental Health", "Depression", "Epilepsy", "Learning Disabilities", "Behavioral Disorder", "Children" and "Pakistan".

*Results:* A thorough review of literature revealed variable burden of mental health disorders among Pakistani children. The reported prevalence of mental retardation among Pakistani children is 19.0/1,000 children for serious retardation and 65.3/1,000 children for mild retardation. Small scale studies have identified the burden of various mental disorders mostly among school-aged children. The commonest disorders reported among children age between 7-17 years include learning disabilities, depression and epilepsy. The only validated child mental health research tool is Strengths and Difficulties Questionnaire. Important pitfalls in child mental health research include lack of recognition about the issue, lack of validated research tools and capacity within health system.

*Conclusion:* Available literature is insufficient to provide accurate estimates regarding burden of various child mental health disorders. There is also a dire need for child mental health research, to identify priority areas of child mental health and to assess the actual burden of mental health disorders as well as effective interventions for control and prevention.

*Keywords:* Mental Health, Children, Pakistan

#### 11.43 ESTABLISHING CEPHALOMETRIC NORMS OF PHARYNGEAL AIRWAY IN OUR LOCAL POPULATION

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**Objective:** Obstructive Sleep apnea (OSA) is characterized by repeated episodes of upper airway obstruction resulting in cessation (apnea) or reduction (hypopnea) in airflow during sleep. Clinical symptoms include interrupted sleep, snoring, morning fatigue along with daytime somnolence. The etiology of OSA is multifactorial, with bony cranial structural abnormalities and collapsibility of the upper airway. To diagnose the level of obstruction different diagnostic tests are available including CT scan, MRI, cine CT but cephalometric analysis is a user-friendly, most cost effective and simple technique that is in clinical use. Cephalometric norms of the airway vary according to the ethnic group and sex. It means for comparison, local norms of a given population must be available. **OBJECTIVES:** To determine the cephalometric measurements amongst employees of Aga Khan University Hospital.

**Method:** Study Design: Cross sectional study Setting: Aga Khan University Hospital Duration of study: A minimum of 10 months starting from the date of approval of synopsis Sample Size: with a confidence interval of 95% and 10% margin of error, sample size was to be 168. Data collection procedure: A questionnaire was used to isolate patients fulfilling the inclusion criteria and an informed consent was taken. Subjects were then taken for radiograph. Demographic data of the subject was charted out. The mentioned cephalometric measurements were duly noted taking help of a fellow radiologist. The data was then filled in the Performa and descriptive frequencies and percentages were calculated for age. Mean along with standard deviation was calculated for the continuous variables

**Results:** We were able to calculate the cephalometric measurements of SNA, SNB, MPH, PAS and soft palate length for normal subjects. The results were stratified according to sex.

**Conclusion:** Cephalometric norms differ in different ethnic groups and gender. To consider cephalometric measurements as abnormal, it is essential to have a normal value for the particular race or ethnic group for comparison.

**Keywords:** Cephalometry, Frankfurt's horizontal plane, SNA, SNB

#### 11.45 EVALUATION OF PROPER DOCUMENTATION OF INFORMED CONSENT IN RADIOLOGY DEPARTMENT

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**Introduction:** Medical informed consent is essential to the physician's ability to diagnose and treat patients as well as the patient's right to accept or reject clinical evaluation, treatment, or both. Medical informed consent should be an exchange of ideas that buttresses the patient-physician relationship. **OBJECTIVE:** The objective of this study is to evaluate proper documentation of informed consent in radiology in order to

improve good quality services and to reduce negligence and malpractice along with patient satisfaction.

**Method:** The Audit is carried out at Radiology Department of Aga Khan University Hospital, Karachi. Total no. of 100 consent forms are evaluated randomly, 20 from each radiological specialty which includes General Radiography (IVP, Fluoroscopy, and Mammography), VIR, CT, MRI, Ultrasound, and Nuclear Medicine. This includes consent forms of CC (Consulting Clinic), OSR (Outside Referred), Emergency (ER) and Wards Patients (C1, C2, B1, D2, PW, D0). Different prospective are evaluated whether proper identification of patient, location, age, gender, person taking consent, person giving consent, Identification of Radiologist performing the procedure etc have been notified or not.

**Results:** The evaluated consent forms for required data in different section revealed almost complete documentation and details will be presented.

**Conclusion:** CONCLUSION: It was observed that over all base line requirement of informing patients and taking formal consent was followed but certain areas were not fully in compliance for documentation.

**Keywords:** Consent, compliance, documentation

#### 11.47 EVALUATION OF SITE OF STENOSIS ON VENOGRAM EXAMINATION ON AV FISTULA DYSFUNCTION

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**Objective:** Surgically constructed arteriovenous fistulas are common means of vascular access for hemodialysis. a large proportion of failures of arteriovenous fistulae are related to stenosis or occlusion of either the arterial or venous end. The etiology of this process is still unknown but the fistula configuration and resultant hemodynamic have been implicated. This study was devised to evaluate the sites of stenosis in patients with fistulae and to identify the probable causative factor. **Method:** Study performed at angiography department of Aga Khan University hospital. All upper limb venogram performed for failed or failing AV fistulas between January 2009 to July 2011 were reviewed. 34 patients were referred to evaluate fistula dysfunction and were included in the study. Level of blockage either arterial or venous was evaluated. The venous level of obstruction was determined.

**Results:** Venogram was performed in 34 patients with AV fistula, of which 20 were males and 14 were females. 10 patients had cephalic veins abnormality with 7 patients having stenosis and 3 having occlusion. 17 patients had subclavian vein abnormality with 12 patients showing complete occlusion and 5 patients had stenosis. 5 brachiocephalic veins were examined in which 2 patients had occlusion and 3 patients had stenosis. 2 patients had arterial abnormality. Duration of patency and associated history of previous catheter insertion were recorded.

**Conclusion:** Arteriovenous fistula failures mostly occur on the venous side and the cause predominantly includes previous catheter insertion especially in the subclavian vein.

**Keywords:** Stenosis, fistula, occlusion

#### 11.49

##### EXPLORING PRACTICES AND PERCEPTIONS OF ECD TEACHERS FOR THE IMPLEMENTATION OF HIGH SCOPE CURRICULAR TEACHING APPROACH

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University, Karachi*

*Objective:* Study was aimed to explore perceptions and practices of ECE teachers for the implementation of High Scope teaching approach.

*Method:* Study was conducted in Sunshine school (pseudonym) at Gilgit Baltistan guided by the qualitative exploratory research method. Data was collected through in-depth interviews, classroom observations, post observation discussions, and document analysis. Two ECD trained teachers with experience in High Scope teaching approach participated in the study.

*Results:* The study revealed that teachers using High Scope curricular approach focussing on active learning, integrated teaching and using teaching learning material. It also, highlighted that teachers faced difficulty in full implementation of High Scope teaching approach due to lack of relevant teaching and learning material, multi-age children in the classroom, and open admission throughout the year. These challenges minimized the teachers' motivation to follow High Scope with its true essence in their local context. The need for in-depth understanding related to the theoretical knowledge to transform theory into practice; in classroom teaching was emphasized. *Conclusion:* Gilgit Baltistan has limited resources and infrastructure facilities available to the local people. The tough terrain increases the inaccessibility to schools also leaving small room for new strategies to be implemented in the school systems in the areas. Future researches should focus on designing training programmes for ECED teacher educators on regular bases to create a group of skilled teachers.

*Keywords:* ECD practices, teaching approach, ECED strategies

#### 11.50

##### FACTORS BEHIND DELAY IN FINAL DISPOSITION OF EMERGENCY PATIENTS

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Karachi*

*Objective:* To study frequency and associated factors of delays behind final disposition of patients presenting to a tertiary care hospital in Karachi, Pakistan. Also, to assess the effect of delay on the disease outcome of such patients.

*Method:* This comparative cross sectional study was conducted at the Aga Khan University Hospital in first half of 2011. Both adult and paediatric patients were included. Comparison was done between the delayed and non-delayed emergency department patients. Six hours was taken as a cut off. SPSSv.19 and Ms Excel 2010 was used for analysis

*Results:* Of the total 351, 130(37%) were paediatric and 221(63%) were adult patients. There were 187(53%) males. More the 6

hours delay was noted in 94(27%) patients. Average delay was 27 hours and two patients had to wait for 72 hours. Twenty four(25%) were front patients while 22(23%) were recess patients who suffered delay. There was no mortality, 75(80%) were discharged home and 4(4%) of the delayed patients were admitted. Delay in laboratory reporting was the main factor observed. *Conclusion:* Significant numbers of emergency patients are suffering preventable delays in final disposition. Our critical yet delayed patients did not suffer any grave outcome.

*Keywords:* Factors, delay, emergency patients

#### 11.51

##### FALL INJURIES – A PREVENTABLE PUBLIC HEALTH ISSUE: RESULTS FROM A PILOT SURVEILLANCE PROGRAM IN A DEVELOPING COUNTRY

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*Objective:* Unintentional injuries due to fall are a leading cause of emergency department visits in children under 14 years. Aim: The aim of this study is to report the existing baseline facts on fall related injuries

*Method:* This was a secondary analysis of a childhood unintentional injury surveillance database setup in the emergency department of the Aga Khan Hospital, Karachi, Pakistan for three months. The data was collected by interviewing caretakers of children under 12 years of age presenting with an unintentional injury to the emergency departments of the four major tertiary care hospitals of Karachi, Pakistan.

*Results:* There were 281 cases of falls injuries. Of these 186 (66.2%) occurred in males giving a male female ratio of 1.95. Majority of fall were seen in the 5 – 11 years age group (n=170, 60.5%). Most of these injuries took place at home (n=238, 84.7%). Main reasons for these injuries were fall from height (n=147, 52.3%), from stairs/steps (n=70, 24.9%), playground equipment (n=28, 10%), from bed (n=25, 8.9) and attendants' arms (n=9, 3.2%). The fall injuries were mostly minor (n=177, 63%) in severity. Around 84% (n=236) cases were directly discharged from the ED and 20 (7.1%) were admitted to the ward. There were two expires (case fatality 0.7). Short-term disability was found 104 cases (37%) and long-term in 47 (16.7%) cases. *Conclusion:* Fall is common unintentional injuries occurring mostly at home. Strategies at home like installing stair gate or other barriers to heights can reduce the burden of fall related injuries.

*Keywords:* Injury, fall, children

**11.53****FREQUENCY OF DEMENTIA AND RELATED FACTORS IN PEOPLE AGE 60 YEARS AND ABOVE LIVING IN A COMMUNITY OF KARACHI, PAKISTAN: A CROSS SECTIONAL STUDY***Kiran Azizi**Department of Family Medicine, Aga Khan University, Karachi*

**Objective:** 1) To determine the frequency of dementia in age 60 years and above in a local community of Karachi, Pakistan. 2) To determine the factors related to dementia in age 60 years and above in a local community of Karachi, Pakistan

**Method:** Data would be collected from Jamshaid Town Karachi because inhabitants there belong to diverse socioeconomic strata. Duration of Study: 6 months after approval of synopsis. Study Design: Cross-sectional study. Sample Size: Sample size is calculated with the WHO software to determine the frequency of dementia and factors related to it in a community of Karachi. The frequency of dementia ranges from 2.3% to 20% in literature. For the first objective, the sample size was calculated on the basis of least proportion that is 2.3% and came out to be 267. The frequency of contributing factors such as age (12.25% to 29.85%), gender (female 30%, male 10%), marital status (single 5.6%, married 15%, divorced/widowed 30%), education (illiterate 18.3%, literate 4%), socioeconomic (employed 12.7%, unemployed 26.7%), family history (20%), comorbidities (6.2%), depression (85%) and smoking (3.8%). For the second objective, the sample size was calculated to be 434 on the basis of least proportion (3.8%) with 95% confidence interval and bound on error of 1.8%. After addition of 20% non-responders the final sample size would be n=280 study participants. Sample Technique: Non probability consecutive sampling. Sample Selection: Inclusion Criteria: Elderly of either sex, aged 60 years or more, living in Jamshaid town of Karachi-Pakistan for six months and who would give consent to participate will be included in the study. Exclusion Criteria: Individuals with systemic illnesses (sepsis) causing altered mentation or those with major psychiatric problems (psychosis). DATA COLLECTION PROCEDURE: Ethical approval will be taken from the Aga Khan University Ethical Review Committee. Informed consent (ANNEXURE I-a and I-b) will be taken from those fulfilling inclusion criteria. To maintain confidentiality code will be given to each subject by the principal investigator. In Jamshaid town, consecutively selected houses will be visited by the principal investigator for administering the instruments to the elderly. If there is no elderly in the household, the next house will be visited, and the next, till an elderly person is found. A pretest coded Questionnaire will be used by the principal investigator to obtain demographic data (ANNEXURE II-a and II-b) such as age, gender, marital status, family history, education, employment, income, comorbidities and smoking. It will take 10 minutes. Mini-mental state examination scale (MMSE ANNEXURE III-a) will be used to assess the elderly for dementia. It consists of questions related to orientation, registration, attention, calculation, recall and language. MMSE has a sensitivity of 97% and a specificity of 59% to assess dementia. The English version of MMSE will be translated into Urdu (ANNEXURE III-b) and pilot study will be done. The elderly persons getting scores below 24 (literate) or 21 (illiterate) out of 30 will be assessed positive for

dementia. It will take total of 10 minutes. Individuals with dementia will be referred to AKU Family Medicine clinics. The pamphlets containing information about dementia symptoms and tips for the sufferer will also be given to all the participants (ANNEXURE IV-a and IV-b). To minimize recall bias, data will be collected for the last 6 months. Age and educational levels are possible confounders for scale use. Adjustments of cutoff will minimize this bias

*Keywords:* Dementia, related factors, frequency**11.54****GENDER DIFFERENCE IN INVESTMENT DECISION MAKING: EVIDENCE FROM A PAKISTAN***Muhammad Ashar Malik, Nargis Asad, Kausar Saeed Khan, Iqbal Azam**Department of Community Health Sciences, Aga Khan University, Karachi*

**Objective:** Risk-averse investment choices have gender differences. We studied gender and other dimensions of the choices of employees of the Aga Khan University on a new gratuity investment plan. The new gratuity plan had a likely risk factor on returns on gratuity account compared to the existing plan that had defined benefits.

**Method:** We used AKU human resource data of 5493 employees working in Karachi campus Pakistan. The employees' data had information on gender, age, marital status, length of service, grades, appointment type, department/entity and the choice of new gratuity plan. We performed t-test and Pearson Chi-square test to find significant difference in discrete and categorical variables with those opted for new gratuity plan. We developed a logistic regression model to explain difference in the choice of gratuity plan.

**Results:** Only 1960 (1475 male and 485 female) employees opted for new gratuity plan. In the univariate analysis male and married employees significantly opted for the new scheme. Mean age is 2 years higher for those who opted for new scheme. Mean length of services is 1.59 years higher for those who opted for new scheme. In the logistic regression, with every female opting for new scheme 1.49 male will opt for the new scheme. Older aged (significant), longer length of service (significant) and married employees are more likely to opt for new scheme. **Conclusion:** Our findings confirm earlier studies on risk averseness of women in financial decision making. Though Islamic standpoint on interest favors risk taking attitude but even AKU employees mostly preferred secure investment of the gratuity funds. This can be a likely effect of an overall uncertain political and economic situation of the country and global economic downturn. In the country.

*Keywords:* Behavioral sciences, decision theory, risk and uncertainty

### 11.56

#### HOME BASED CARE OF PALLIATIVE PATIENTS IN KARACHI: FIRST EXPERIENCE FROM PAKISTAN

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**Objective:** According to world health report 2010, 63% of deaths were due to non-communicable diseases. 1 Cancer is the 2nd leading cause of death worldwide. Pakistan, like other countries is facing a double burden of diseases with incidence of 1.4 million per year. 2 Dyspnea and lack of wellbeing 70% 3 are the common symptoms among palliative patients followed by; pain 64%, anorexia 34%, and constipation 32%. 4 People over 65 years of age are less likely want to die at home than younger people. 5 To determine the needs of Palliative patients visited at home in Karachi

**Method:** A prospective cross sectional Pilot study was conducted on 50 patients visited at home in Karachi. Patients who had incurable diseases and labeled as Do-Not-Resuscitate were included. Patients with short visits for procedures were excluded. Data was collected by PI on proforma after taking informed verbal consent. Mean was calculated for qualitative variable (age) and frequency was calculated for quantitative variables  
**Results:** Mean age was 68.5 years, 64% were females. HTN was found in 80%, DM 64%, stroke 30% and cancers 26%. 72% were bedridden, 32% were on NG feed, and 6% on TPN. 52% were catheterized with silicon in 46%. Pain was found in 68% and Bed sores in 24%. Neurology was most common referring specialty in 28%. Most patients were presented with UTI 40%, LRTI 22%, Pain 48%, and Constipation 30% and 90% were managed at home

**Conclusion:** Palliative patients have multiple issues (mobility, nutrition need, symptom management, psychological support). Healthcare providers need proper training and awareness of palliative care so that they can manage these issues at home.

**Keywords:** Palliative care, Pain, Bed sore

### 11.57

#### HUMAN GC IS THE MOST EVOLUTIONARY CONSERVED WHILE ZEBRAFISH GC IS THE MOST DIVERGED PROTEIN.

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**Objective:** Gc protein is primarily a binding protein for vitamin D metabolites. Yet, it plays various other roles such as an actin scavenger, macrophage activating factor and fatty acid transporter. It belongs to a gene cluster comprising of albumin,  $\alpha$ -fetoprotein and afamin. Together they form an albumin superfamily. The aim of the study was to explore the variations in Gc protein among the animal kingdom.

**Method:** NCBI and EBI-EMBL databases were searched for the presences of validated Gc sequences or its analogs. We found

cDNA, RNA, predicted and synthetic constructs but no analogs in worms or Drosophila. We selected human, cow, mouse, chicken, frog and zebrafish for this study. Gc protein sequences were acquired from NCBI database. Multiple alignment analysis was performed on ClustalW2. Conserved domain analysis was performed on Batch Web CD-Search Tool.

**Results:** There is high homology among mammals such as human, cow and mouse. The percent identity is highest between human and cow (81%) and lowest between human and zebrafish (29%). The percent identity between human with mouse, chicken and frog is 78%, 49% and 41% respectively. Phylogenetic tree shows that human Gc is the most conserved and zebrafish Gc is the least conserved.

**Conclusion:** Conservation of Gc is highest among mammals while it is highly diverged in lower vertebrates. Gc protein is more closely related among mammals than with lower vertebrates. More importantly, Gc is present in all vertebrates thereby indicative of its significance in the phylum Chordata

**Keywords:** Gc, vitamin D-binding protein, albumin superfamily

### 11.58

#### HYPERTENSIVE CRISIS: HYPERTENSIVE URGENCIES AND EMERGENCIES; ITS MANAGEMENT AND OUTCOME AT A TERTIARY CARE CENTER IN KARACHI

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Aysha Almas  
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**Objective:** Uncontrolled hypertension can progress to hypertensive crisis defined as a systolic blood pressure >180 mm Hg or a diastolic blood pressure >120 mm Hg. Our objectives were to determine the prevalence of hypertensive crisis, its management and its outcome at a tertiary care center in Karachi.  
**Method:** This was a cross sectional study conducted at the Aga Khan University, Karachi, Pakistan. All adult inpatients (> 18yrs) presenting to the ER with uncontrolled hypertension were included. Data over a period of 5 years, from year 2005 till year 2010, was used.

**Results:** The prevalence of hypertensive crisis among 387 patients who had uncontrolled hypertension presenting to the ER between years 2005-2010 was almost half (56.3%). Among them, a greater proportion was diagnosed as having hypertensive emergency (59.7%) compared to 40.3% of them having hypertensive. Headache was the most common presenting symptom in these patients and dyslipidemia was the most common comorbid. The mean overall length of stay (in days) of patients, admitted in the ER and ward combined, was 2.34(2.241) days. Per oral Calcium channel blocker and intravenous nitrate were the most commonly administered medication in the ER and ward. Acute renal failure was the most common complication with a prevalence of 26%.  
**Conclusion:** The prevalence of hypertensive crisis and more importantly hypertensive emergency is high indicating lack of knowledge about control of hypertension and non-compliance to antihypertensive medications. Per oral calcium channel blocker

and intravenous nitrate is the most commonly administered medication in our setup. The overall length of stay of patients for the management of hypertensive crisis is high.

*Keywords:* hypertensive crisis, hypertensive urgency, hypertensive emergency

### 11.59

#### HYPOTHERMIA DURING HEAD AND NECK SURGERY AND POSTOPERATIVE COMPLICATIONS. A MULTIVARIATE ANALYSIS

*Shabbir Akhtar*

*Department of Surgery, Aga Khan University, Karachi*

*Objective:* Head and neck cancer (HNC) is 2nd most common cancer in Pakistan. Our objective was to determine if intraoperative hypothermia (intraoperative body temperature below 35 C) correlates with perioperative complications in patients undergoing head and neck cancer surgery. *Method:* Design Retrospective medical chart review. Setting Academic tertiary care hospital. Patients A sample of 210 patients who underwent ablative surgery for head and neck cancer with or without reconstruction with free tissue or a regional flap in the last 10 years

*Results:* There were 70 patients with complications. Complications included 5 total flap losses, 11 episodes of pneumonia, 3 fistulas, 10 wound infections, 13 wound breakdowns, and 28 patients developed a combination of these complications. Factors that did not correlate with complications included having received prior chemotherapy ( $p = .43$ ), having stage IV cancer ( $p = .91$ ), gender ( $p = 1$ ), tobacco use ( $p = .59$ ), prior radiotherapy ( $p = .87$ ), the presence of comorbidities ( $p = .43$ ), age ( $p = .09$ ), length of surgery ( $p = .45$ ). Patients who were hypothermic had a significantly higher rate of complications than normothermic patients ( $P = .01$ ).

*Conclusion:* Intraoperative hypothermia in head and neck surgery is correlated with perioperative complications. Maintaining normothermia through aggressive warming may decrease the incidence of perioperative morbidity for these patients.

*Keywords:* Hypothermia, head & neck, cancer

### 11.60

#### IATROGENIC CUSHING'S SECONDARY TO TOPICAL STEROID APPLICATION.

*Muhammad Akbar Baig, Khadija Nuzhat*

*Department of Emergency Medicine, Aga Khan University, Karachi*

*Objective:* The development of hypothalamic-pituitary-adrenal (HPA) axis dysfunction steroid use via percutaneous route is a rare but possible finding. Lack of awareness to this adverse side effect should be taken in consideration while dealing with patients with possible Cushing's syndrome.

*Method:* We report a case a 6 months old male boy who presented to us with complaint of fever and irritability for 1 week. The parents gave a significant past history of liberally using topical Clobetasole Propionate (Dermovate) for diaper dermatitis. Prior related workup advised by a pediatrician revealed HPA axis suppression (Serum Cortisol A.M.  $<1.1$  & P.M.  $<1.1$ ). Examination revealed moon facies, bulging anterior fontanelle, truncal obesity & perineal rash. Physiologic IV steroid replacement was started and remainder of hospital stay was uneventful.

*Conclusion:* Inappropriate topical steroid usage can result in Cushing syndrome. Awareness of this potential side effect is important and should be borne in mind while prescribing such medications. In addition, parents should also be counseled.

*Keywords:* Iatrogenic, steroids, secondary adrenal insufficiency

### 11.61

#### IMPROVEMENT IN ACCESS AND EQUITY FOR MATERNAL AND NEONATAL HEALTH SERVICES:

*Shehla Zaidi, Fauziah Rabbani, Shiraz Shaikh, Peter Hatcher, Gul Nawaz Khan, Nousheen Pradhan, Atif Ali*  
*Department of Community Health Sciences, Aga Khan University, Karachi*

*Objective:* With only 8.2% of births taking place in public sector facilities, there is need to try out innovative ways of health delivery and financing, such as contracting out of services, to improve access to BemONC and CemONC. Households are also vulnerable to costs incurred during and around childbirth requiring service expansion and simultaneous reduction in financial barriers. New financing mechanisms, such as contracting out, need to be specifically evaluated for access to maternal and neonatal health services and reduce inequities. The Objective of this study was to assess the comparative effectiveness, if any, of contracted out RHCs versus non contracted out RHCs in:

- Improvement in quality of care of maternal and neonatal health
- Improvement in health service utilization
- Improvement in equity
- To quantify the estimates of the cost of providing contracted out services

*Method:* A cross-sectional survey for comparison of intervention (NGO managed RHCs) and control (government managed RHCs) in Thatta and Chitral

- Health Facility Assessment Survey assessed quality of care parameters at contracted and non-contracted RHCs
- Household Survey assessed service utilization, patient expenditure, health seeking behavior, household knowledge and practices, and delivery outcomes
- Focus Group Discussions assessed in-depth explore financial barriers, including reasons for non-usages.
- Provider Cost Analysis was used for standardized international checklists for unit cost calculation for facility based services.

*Results:* Maternal care utilization • Newborn care utilization • Emergency maternal and newborn care utilization • Quality of care index of health facilities • Patient satisfaction • Median out of pocket expenditure for range of maternal and neonatal health



services • Community perception on barriers to utilization • Unit costs of provider

*Conclusion:* Evidence for decisions on up-scaling of Contracting Out of Rural Health Centers for MNH services. Monitor reduction in client expenditure as a result of contracting. Assess whether benefits of Contracting Out filter down to the poorest or additional safety nets for the poor are required to accompany contracting. Provide unit costs for implementing a contracted out BemONC and CemONC model Identify successful design related features of current contracting initiative that can be replicated for other contracting initiatives.

*Keywords:* Contracted-out, neonatal, rural health centers

### 11.62

#### IMPROVEMENT IN THE PATIENT CARE THROUGH STAT REPORTING FROM EMERGENCY DEPARTMENT SATELLITE LABORATORY: ADVANCEMENT TOWARDS QUALITY IMPROVEMENT.

*Lubna Khaleeq, Bushra Moiz*

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*Objective:* Large volume in the main laboratory, delay in the transportation of emergency department samples to the main laboratory, increased flow of STAT samples from critical care areas and outpatient STAT samples were causing over burden and delay in the reporting time of STAT test, switching from conventional laboratory testing to satellite laboratory will improve the turnaround reporting time (TAT) of STAT test. *Method:* It was a prospective study. Data of previous 9 months i-e from January 2012 to October 2012 was taken into consideration. CBC and Malarial parasite were identified as STAT test of hematology section. Target time for unverified STAT test was set at 30 min and for final report 120 min. We will statistically analyze the data of 12 months and share in the final poster

*Results:* During the study period, a total of 1166310 samples were received in Hematology section. Out of these samples, stat samples were 60108 (5.1% of total volume). STAT samples received in emergency department were 29039 (48.3% of total stat test received. Among these samples, CBC were 24701 (85% of STAT test) and MP were 4338 (14.9% of STAT test). Results reported with in time with morphology were 28944 (99.6%) while the delayed results were (0.32%). CBC samples delayed were 0.11% while MP were 0.21%.

*Conclusion:* Improvement in reporting time of STAT test help in providing best care to the patients which is the aim of a hospital who believes in quality care. In a tertiary care hospital, satellite emergency department laboratory can improve the turnover reporting time of STAT test in management of patients

*Keywords:* Quality improvement, satellite lab, improved TAT

### 11.63

#### INJURY AMONG CHILDREN AND ADOLESCENT- A HOSPITAL BASED NATIONAL STUDY IN PAKISTAN

*Uzma Rahim Khan, Adnan Hyder, Junaid Razzak, Asher, Jabeen*  
*Department of Emergency Medicine, Aga Khan University, Karachi and Department of International Health, Johns Hopkins University Bloomberg School of Public Health, Baltimore, USA*

*Objective:* Injuries are a significant problem in low and middle income countries. This study investigates the injury demographics and causes at national level for children and adolescent under 20 years of age.

*Method:* Information on 16,780 children with injury registered in the Pakistan National Emergency Department Surveillance (Pak-NEDS) system was included in the analysis. Data was collected from December 2010 to March 2011 in seven major tertiary care hospitals from all four provinces of Pakistan. These centers included five public and two private hospitals having a collective annual census of over one million patients. The data collection tool was finalized after consultation with the emergency department heads of all institutions. We analyzed information on basic demography, modes of arrival, mechanism and outcomes of injuries.

*Results:* There was an increasing trend of injury with age with most injuries occurred in 15-19 years of age n=8385 (50%). Boys to girls injuries ratio was 2.2 : 1. Out of 15,884 reported cases excluding missing data points, 14,965 (98.2%) were brought to Emergency by public/private transport or through walk in. There were n=8256 (71%) unintentional injuries out of total 11,661 reported cases and common causes of injury were Road Traffic injuries [RTIs] (51%) and falls (18%). Majority of RTIs (76%) include vulnerable road users (Pedestrians, motorcyclists and bicyclists). There were 138 deaths (1%) and 9% of cases were admitted to hospital.

*Conclusion:* Injuries are common in adolescent boys. Road traffic injuries and falls are the common mechanism of injury among Pakistani children and adolescent.

*Keywords:* Injury, child, Pakistan

### 11.64

#### INTRATHORACIC GOSSYPIDOMA

*Aamir Hameed, Saulat Fatimi, Jamal Kabeer*

*Department of Surgery, Aga Khan University, Karachi*

*Objective:* Intrathoracic gossypidoma refers to retained swab in thoracic cavity after any cardiac or thoracic surgery. Most reports in the literature have been single reports or case series. The aim of our work was to document our experience of managing intrathoracic gossypidoma cases presenting here at AKUH.

*Method:* There were 03 cases of intrathoracic gossypidoma who underwent surgery at outlying hospitals in Karachi. *Results:* Of 03 cases, all were males, were diagnosed as having intrathoracic mass, biopsy was inconclusive. All of them were

found to have gossypiboma per operatively which was removed.  
*Conclusion:* Surgery is the definitive treatment for intrathoracic gossypiboma in the setting of an acute clinical problem. Not many cases are reported, obviously because of medico legal reasons.

*Keywords:* Gossypiboma, Intrathoracic

#### 11.66

##### INTRODUCING TEMPLATE BASED COMPUTERIZED PHYSICIAN ORDER ENTRY FOR CHEMO MEDICATIONS IN A TERTIARY CARE TEACHING HOSPITAL IN PAKISTAN

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Department of Pharmacy, Aga Khan University, Karachi*

*Objective:* Aga Khan University Hospital (AKUH) is a 580 bed, ISO certified and JCIA accredited tertiary care teaching hospital having a well established pharmacy services. Oncology residents entered chemo drugs through CPOE (Computerized Physician Order Entry) thus transcribing or re writing written oncologist's prescriptions. Each drug of chemo regimen was entered separately with no regards to dose, combinations, frequency and duration and checking with that of known cancer diagnosis. There was a great risk associated with wrong drug/regimen selection, erroneous dosing & even wrong patient selection. *Objective:* Develop a one window order entry template that uses all parameters to ensure that the right chemo regimen is entered for the right patient.

*Method:* Pharmacy department in collaboration with Physicians, Nursing and IT department devised a system of Computerized Chemo Template base order entry. These order sets (comprising of pre-approved chemo regimens) along with premedication, hydration and rescue agents were defined in the pharmacy system dictionary. These Chemo order sets were interfaced with essential laboratory values, routine dosing calculators associated with cancer diagnosis to avoid wrong regimen selection

*Results:* Post implementation data revealed that the new order entry mechanism contributed significantly towards patient safety and the process improvement in reducing physician order entry time from an average of 15-20 minutes to 5 minutes per order.  
*Conclusion:* Our results demonstrated that order template has proven to be a great tool in reducing chemo medication errors significantly.

*Keywords:* Chemo order sets, CPOE, medication error

#### 11.67

##### KEEPING THE GATE WAY CLEAR : TRIAGE REVAMP

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Karachi*

*Objective:* Emergency medicine is a recently evolved medical specialty in Pakistan with the aim of providing management of unexpected illness and injury round the clock. In Pakistan the need and scope of emergency medicine has been realized in recent past and is still in infancy. Till lately, when emergency medicine was not considered as a specialty, Emergency rooms of medical college – affiliated hospitals is run by a full time practitioner called Chief medical officer being trained in medicine or surgery. No triage system has been developed for ED in Pakistan at local or national level and patients are being catered on first come first basis. The lack of knowledge and awareness has failed Pakistan's Emergency Departments to reach modern practices of triage. *Objectives:* To determine the impact of newly implemented triage system (ESI IV) in emergency department of tertiary care hospital, Pakistan

*Method:* Patient triage is an integral part of ED, which is the gateway of institution. Effective triage is a time tested method of managing ED overcrowding. A system that is effective and is based on danger signs rather than disease patterns is easily implementable and practicable. Triage revamp was attempted to address issue of ED overcrowding that is efficient with minimal delays and waiting. Before 2011 we were practicing 4 level triage system in which P1 was life threatening, P2 critical, P3 urgent and P4 stable/walk in respectively. From Jan 2012 ESI IV was adopted to improve patient triaging and control LWBS. With the introduction of new triage optimal utilization of resources can be ensured. This means that life threatening cases (P1 & P2) should not wait and will be immediately sent to resuscitation room or critical care area. For the rest of other priorities (P3/P4/PV), further management will depend upon the resource utilization. Features of triage surveillance like immediate indication of patient's criticality by automatically highlighting abnormal vitals in adults and paediatric patients, reassessment at triage desk will be initiated 15 minutes prior to the completion of their standard waiting time, electronic reporting of patients being referred to clinics, bounce back within 24 hrs and 48 hours and patient contact details were entered. LWBS, LOS, ED visits, triage related complaints and bounce back were outcome measures.

*Results:* As compared to previous year the LWBS patients decreased from 17% to 12%, average length of stay in ED decreased from 5.1 hrs to 4.8 hrs for discharged patients and from 8 hrs to 7.2 hrs for admitted patients. Fast track clinic volume increased from 1% to 3%. ED visits increased by 20%. ED diversion status had decreased by 20%. ED related complaints decreased by 80%. Bounce back dropped from 2% to 0.53%.  
*Conclusion:* Implementation of ESI IV had a positive impact on improving ED visits and throughput thus reducing LWBS, bounce back patients and thus overcrowding.

**11.68**  
KNOWLEDGE, ATTITUDE AND PRACTICES OF  
HEALTHCARE PROFESSIONALS REGARDING  
PALLIATIVE CARE: A SMALL-SCALE STUDY IN  
KARACHI, PAKISTAN

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*Background:* Palliative Medicine is one of the fastest growing medical fields in the developed countries. However, it is still in its infancy in the developing countries. As a result, many patients end up with a high degree of unmet needs for palliation. In Pakistan, healthcare professionals have started showing their interest in this field. However, few studies attempt to assess the awareness and practice of healthcare providers regarding palliative medicine in Pakistan. *Objective:* To assess knowledge, attitude and practices of the physicians, registered nurses, medical and nursing students regarding palliative care at a tertiary care hospital in Pakistan.

*Method:* A cross-sectional descriptive survey was performed using a self-administered questionnaire. A total of 60 (20 males; 40 females) healthcare professionals participated in the study. The target population was equally divided into four groups: physicians, RNs, medical and nursing students, currently working/ studying at hospital in Karachi, Pakistan.

*Results:* All the participants were aware of the term palliative care. However, only 45% knew that palliative and hospice care are separate entities. Majority of the medical students believed palliative care meant to withdraw care. 53.3% of the health professionals considered palliative services to be initiated when curative treatment options have been exhausted and 40% reported that the sole purpose of palliative medicine was to give narcotics. Moreover, only 45% preferred referring patients to palliative care services despite having insight that symptom management towards end of life is difficult for them.

*Conclusion:* There is paucity of awareness and knowledge about palliative medicine among healthcare professionals. A significant gap exists between existent knowledge and practice resulting in lack of recognition of palliative care as a specialty.

*Keywords:* Palliative, knowledge, practice

**11.69**  
MAGNETIC RESONANCE IMAGING OF  
METRONIDAZOLE INDUCED ENCEPHALOPATHY

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*Objective:* We describe a case demonstrating MR imaging findings in association with Metronidazole (Flagyl) toxicity. MRI brain showed abnormal signal intensity involving dentate nuclei of cerebellum bilaterally symmetrical. The diagnosis of metronidazole toxicity was made by the MR imaging findings and supported clinically. In hospital course of treatment drug

was discontinued. Patient was clinically improved with discontinuation of metronidazole. No follow-up MR imaging was obtained. In this report, we present a case depicting MR imaging changes within the dentate nuclei of cerebellum. *Method:* Standard sequences were unenhanced FLAIR, T1-weighted, T2-weighted images, with diffusion weighted imaging and contrast-enhanced T1-weighted imaging. The regions involved were recorded on the basis of these sequences. MRI scan was performed on a SIEMENS AVANTO (1.5 Tesla) MRI scanner.

*Results:* Metronidazole (Flagyl) is a common antimicrobial agent used in the treatment of anaerobic and protozoal infections. Metronidazole induced encephalopathy (MIE) is a rare toxic encephalopathy caused by the antibiotic drug metronidazole. Metronidazole is believed to penetrate CSF and the central nervous system (CNS) easily. The incidence of MIE is unknown. Metronidazole toxicity can involve central and peripheral nervous system especially at dosages exceeding 2g/day for prolonged periods. Following discontinuation of metronidazole, the patients symptoms resolved rapidly.

*Conclusion:* This case helps to characterize the changes associated with metronidazole toxicity. MR imaging is helpful in confirmation of metronidazole toxicity in clinically suspected cases by demonstrating the presence of increased T2 signal intensity in the deep nuclei.

*Keywords:* Magnetic Resonance Imaging, Central Nervous System, Metronidazole Toxicity

**11.70**  
MANAGEMENT AND OUTCOME OF  
AMELOBLASTOMA – OUR EXPERIENCE AT  
AGA KHAN UNIVERSITY HOSPITAL

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*Objective:* Ameloblastoma is an aggressive benign tumor of epithelial origin arising from enamel, dental follicle, periodontal ligaments and lining of odontogenic cysts. Though it is a rare H&N tumor, yet it is the most common – odontogenic tumor. It is totally curable, if excised completely. *Objective* was to review the management & outcome of ameloblastoma in terms of recurrence and reconstruction

*Method:* Retrospective review of all patients who underwent surgery for ameloblastoma. Files were reviewed and data recorded regarding age, gender, clinical presentation, treatment outcome in terms of recurrence, flap failure and complications. The data was analyzed using SPSS 16

*Results:* Majority of our patients underwent segmental mandibulectomy. Overall recurrence was seen in 7% of patients. There was no flap failure seen. Our complication rate was 7%.

**Conclusion:** Best treatment for patients with ameloblastoma is maxillectomy or segmental mandibulectomy followed by reconstruction.

**Keywords:** Ameloblastoma, Segmental mandibulectomy, Free flap

### 11.71

#### MEASURING THE PATIENT SAFETY CULTURE AT A TERTIARY CARE HOSPITAL IN PAKISTAN AND ITS TREND OVER A YEAR

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**Objective:** Patient safety is a top priority for many organizations worldwide. Majority of the work on this subject has been done in the developed countries. However, The Aga Khan University Hospital continually strives to reduce the medical errors and improve the quality of healthcare. **Aims:** The aim of the study was to assess the perceptions of neonatal Intensive Care Unit's (NICU) staff towards patient safety and compare them to the baseline, of a year before, using Hospital Survey on Patient Safety Culture (HSOPSC) which is developed by Agency for Healthcare Research and Quality (AHRQ).

**Method:** The HSCOPSC was used to measure the patient safety culture across 12 dimensions at Aga Khan University Hospital, Karachi. Thirty-seven individuals, who had been working at the neonatal intensive care unit of the hospital for at least 7 months, between July – August 2010, were included in the study and a follow-up survey was done by forty NICU staff using online forms on the University's own network in 2012. **Results:** The overall response rate for both the years was 100%. The average positive response rate for the 12 patient safety culture dimensions of the HSOPSC survey was 83.56% (CI 75.9-89.70), which signifies a 9.6% improvement from the baseline of 76.23% (CI 67.6-83.23) and is higher than the average positive response rate for the AHRQ data (63%). An overall improvement has been seen among all the dimensions except "Nonpunitive Response to Error" and "Supervisor/Manager Expectations & Actions Promoting Patient Safety". The greatest improvement is seen in "staffing" with a positive change of 38.2 percentage points from the baseline followed by "Overall Perceptions of Patient Safety" (+29.8) and "Feedback & Communication About Error" (+24.6). The largest decrease is seen in "Supervisor/Manager Expectations & Actions Promoting Patient Safety" with 49.8 percentage points decrease followed by "Nonpunitive Response to Error" which has a decrease of 16.7 percentage points. 42.5% of the respondents reported one incident or more compared to 58.4% of the baseline.

**Conclusion:** The patient safety surveys that have been validated in the developed countries can be administered in any health care setting with good infrastructure in developing world. The results of this study are useful for patient safety experts and hospital policy makers. To make the best of these results, further evaluation is needed.

**Keywords:** Safety, NICU, hospital survey

### 11.72

#### MEDICATION ERRORS AT A TERTIARY CARE HOSPITAL: UNDERLYING FACTORS AND HEALTH CARE PROFESSIONAL EXPERIENCES

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**Objective:** Medication error is considered to be an important indicator of a patient's safety. Several error producing factors contribute to its occurrence and may jeopardize the self-esteem of the health care professionals who commit the error. **Method:** Using a mixed method design, this study aimed to identify the underlying factors of medication errors and the experiences of the health care professionals who had committed medication errors. The study was conducted at a tertiary care hospital in Karachi. Following the eligibility criteria, 64 medication errors, reported in the period from December 2011 to March 2012, were included in the study. Data was collected by reviewing documents pertinent to the errors, a self-administered survey questionnaire, and face-to-face interviews with doctors, pharmacists, and nurses who had committed an error.

**Results:** Analysis of the quantitative data showed that of the 64 errors, 49 were actual errors, 15 were near misses and 2 were classified as sentinel events. The highest percentage of errors was committed in the administration phase, by nurses, in the morning shift. The content analysis of the qualitative data led to two themes—stress and workload and the violation of policies. The immediate reactions of the health care professionals to the incidents included denial, shock, anger, distress, and guilt. Their responses were mainly dependent on the nature of the incident. Support from spouses, the management staff, and colleagues helped them to cope with their emotions, but the need of official counselor was identified. Most health care professionals accepted the error as a learning opportunity but remained worried about the consequences the incident may have on their professional image and career.

**Conclusion:** The study has provided information about the causes and the feelings associated with medication errors. Recommendations provided in the light of this study may help to get information about the underlying factors of medication errors. Besides possible harm to patients, the study confirmed that medication errors can cause extreme emotional distress in the health care professionals involved in the errors. These findings have implications for the hospital administration to bring an improvement in the system.

**Keywords:** Medication errors, factors, emotional responses

### 11.74

#### METHODS USED IN SUICIDE IN PAKISTAN: IMPLICATIONS FOR PREVENTION

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**Method:** Literature search using keywords "Pakistan" and ("suicide" or "attempted suicide" or "parasuicide" or "deliberate self-harm" or "drug overdose" or "self-poisoning"

or “acute poisoning” or “organophosphate poisoning” or “suicidal behavior”).

**Results:** Using the above strategy a total of 54 articles were retrieved. Of these 17 related to completed suicide. The most common methods, in order of frequency were: poisons (33%), hanging (26%), firearms (14%), jumping (heights, in front of trains or vehicles, sea) (14%), self-immolation (6%), and stabbing (3%). Drugs and medications were used by a small minority (0.9%). The most common method in women was self-poisoning while hanging was the most common method in men. In Pakistan ‘poisons’ commonly include insecticides and pesticides, household bleach, detergents and ‘wheat pill’ (aluminum phosphide).

**Conclusion:** The three most common methods used in committing suicide in Pakistan are hanging, poisons and firearms. While hanging is extremely difficult to control, controlling other two methods i.e. poisons and firearms, can potentially result in reduction of suicide incidences by almost 50%. This would require a massive public awareness campaign through the media for safe storage of both insecticides and firearms in homes. There is urgent need to recognize and address the problem of suicide at public health level in Pakistan.

**Keywords:** Suicide, Pakistan, self-poisoning

#### 11.75

##### MINIMIZING MEDICATION DISPENSING ERRORS IN A TERTIARY CARE HOSPITAL – OPTIONS FOR LOW BUDGET SCENARIO

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**Objective:** Objective was to minimize dispensing errors by 25% thereby enhancing patient’s safety through process improvement. Medication errors are common and often preventable. A study was conducted at a tertiary care hospital for trend analysis of dispensing errors in a hospital pharmacy over past two (2) years. **Method:** Data of reported dispensing errors of last 2 years was reviewed by pharmacy task force committee. Study included all dispensing errors that remained undetected during filling & checking process in pharmacy but reported before administration. Data revealed that 44% of dispensing errors were reported through incident forms in 2009, 53% in 2010 and 63% in quarter-one of 2011. Major reasons of dispensing errors were identified as look alike, sound alike drugs (LASA), inappropriate differentiation between checked and un-checked medications, failure to follow filling, checking parameters, label format, and environmental factors. The pharmacy task force committee applied PDSA (plan-do-study-act) methodology for quality improvement. An action plan was implemented which included: mark of identification of a drug on labels (example: color/shape) in the computerized drug label for LASA drugs, separate storage location for LASA drugs, generic based drug mnemonics with strengths to minimize calculation error, developing formulary update safety checklist, Regular CEs for staff education and sensitization, redesigning of staff scheduled activities to provide back-up during peak hours. Post analysis data compiled for quarter 2, 3 and 4 of year 2011.

**Results:** Post intervention results showed marked improvement. Medication errors reduced by 6% as compared to 2009, 15% compared to 2010 and 25% compared to quarter-1 of 2011. **Conclusion:** Scientific approach and quality improvement initiatives by medication task force committee results in enhancement of medication safety processes and improved patient care.

**Keywords:** Medication error, patient safety

#### 11.76

##### MRI FINDINGS IN METHANOL INTOXICATION: A REPORT OF THREE CASES

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**Objective:** Methanol is a highly toxic substance and acute methanol poisoning produces severe metabolic acidosis and serious neurological symptoms, including severe visual impairment, extrapyramidal signs and coma. We present three cases of accidental methanol intoxication and discuss the MRI findings.

**Method:** Standard sequences were unenhanced FLAIR, T1-weighted, T2-weighted images in all patients, and contrast-enhanced T1-weighted imaging. The regions involved were recorded on the basis of these sequences. All MRI scans were performed on a SIEMENS AVANTO (1.5 Tesla) MRI scanner. **Results:** Methanol poisoning affects the optic nerve and the central nervous system with a predilection for basal ganglia, resulting in symptoms of visual disturbances, blindness, drowsiness, seizures and coma. CT and MR imaging are able to demonstrate toxic effects of methanol in the CNS. Putaminal necrosis with or without hemorrhage are the most frequent reported finding. Other affected areas that were reported in the literature are subcortical white matter, hippocampus, optic nerve, tegmentum, cerebral gray matter and cerebellum. **Conclusion:** When symmetrical lesions are detected in the basal ganglia and white matter along with sudden visual disturbance, methanol intoxication should be considered in the differential diagnosis. Early diagnosis may improve the prognosis in acute phase.

**Keywords:** Magnetic resonance imaging, central nervous system, methanol intoxication

#### 11.77

##### MULTIPLE AUTOIMMUNE SYNDROME ASSOCIATED WITH PSORIASIS.

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**Case Report:** Introduction Various autoimmune diseases have association with each other but it is very rare to see multiple autoimmune diseases in one patient. The combination of at least three autoimmune diseases in the same patient has defined as multiple autoimmune syndromes (MAS). About 25 percent of patients with autoimmune diseases have a tendency to develop

additional autoimmune diseases. These patients often have at least one dermatological condition, usually vitiligo or alopecia areata. We presented an interesting case of multiple autoimmune syndrome who presented with four different conditions. The patient had autoimmune hemolytic anemia, systemic lupus erythematosus (SLE), vitiligo and psoriasis. It is a very interesting and rare case as psoriasis has not been reported previously under the spectrum of autoimmune syndrome and we described a new combination of autoimmune diseases.

**Method:** Case presentation A 42 years old Asian lady had been diagnosed as a case of Coombs Positive Autoimmune Hemolytic Anemia 13 years ago, and subsequently after 5 years was diagnosed as a case of Systemic Lupus Erythematosus (SLE). She also had Psoriasis for a short duration and after its complete resolution she presented with lesions of vitiligo.

**Conclusion:** Although the relationship of autoimmune conditions with each other has been explored in the past, this case adds yet another dimension to the unique evolution of autoimmune pathologies. Our patient presented a combination of four autoimmune diseases consisting in the diagnosis of type three multiple autoimmune syndromes with the addition of psoriasis

**Keywords:** Vitiligo, systemic lupus erythematosus, psoriasis

#### 11.78

MULTIPLE MINOR ISOFORMS OF CALPAIN 10 (B, D, E, F & H): A FUNCTIONAL PROPHECY FOR HUMAN AILMENTS

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**Objective:** Calpain 10 is an atypical calpain exist in all human tissues with calcium dependent cysteine endopeptidase activity. On translation it exhibits eight isoforms (a-h). Overall calpain10, play a vital role in glucose homeostasis but actual mechanism of action for itself and of its isoforms is still to be ascertained. We have predicted the role of Isoform a, c and g previously in different diseases with common characteristics of mu and m-calpain. Mechanism of action and possibility of involvement in diseases for isoform b, d, e, f and h is presented here.

**Method:** NCBI Blast and Conserved domains tools were used for nucleotide and protein alignments of these isoforms.

**Results:** There was 100% identity among the cysteine protease domain of calpain 10 isoforms. Results of blast query coverage showed 87%, 84%, 87%, 94% and 34% identity with canonical sequence of calpain 10 a for isoform b, d, e, f and h respectively. Conserved domain analyses of protein sequences of isoforms revealed significant structural similarities of their N-terminal domain I and II with catalytic domain of cysteine protease superfamily PC1 and PC2 with an e-value of CAPN10b=2.41e-76, CAPN10d=2.47e-76, CAPN10e=6.45e-75, CAPN10f=1.07e-43 and CAPN10g=, 1.13e-17. Isoform b, d and e have one consecutive domain which was found to be as similar with C2 like subdomain III (e-value=2.92e-32, 1.03e-35, 1.88e-14) and was classified in CAPN10 group of Pal b subfamily. Isoform f and h lacked this domain.

**Conclusion:** Although structural similarities are not guaranteed for similar actions without wet lab experiments but domain homology predicted functional similarity as of calpain I and II.

**Keywords:** Calpain 10, Cystein proteases super family, Pal B subfamily

#### 11.79

NEUROBLASTOMA, GANGLIONEUROBLASTOMA AND GANGLIONEUROMA: FROM IMMATURE TO MATURE

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**Objective:** Neuroblastoma, ganglioneuroblastoma, and ganglioneuroma are tumors of shifting maturity and these are originated from the primordial neural crest cells that make up the sympathetic nervous system. These cells may be undifferentiated as neuroblasts or may mature to ganglion and Schwann cells. A tumor composed principally of neuroblasts is referred to as neuroblastoma, which represents 10% of all pediatric tumors. The presence of immature tissue in NB and GNB indicates malignant or potentially malignant behaviour.

**Method:** A retrospective study from 2002 till 2012, including all cases of neuroblastoma, ganglioneuroblastoma and ganglioneuroma.

**Results:** Total 184 cases were retrieved and out of these 110 were neuroblastomas (59.8%), 55 were ganglioneuromas (Fig-1) (29.9%) and 19 (10.3%) were ganglioneuroblastomas (fig-2). Two ganglioneuromas were associated with paraganglioma and one was in gastrointestinal tract presenting as ganglioneuromatosis. Male gender was predominant with n=110 (59.8%). Common sites were adrenal glands, abdomen (retroperitoneum), paraspinal region, pelvis, brain and posterior mediastinum etc. Lymph node metastasis was also frequently seen (31 cases) mostly in neuroblastomas (n=29).

**Conclusion:** Neuroblastoma, ganglioneuroblastoma, and ganglioneuroma are more frequently seen in male children with most of the cases during first decade of life. Metastasis is also frequently seen in neuroblastomas, and a search for blastomatous component should be sought for in these tumors due to significantly bad prognosis.

**Keywords:** Neuroblastoma, ganglioneuroblastoma, ganglioneuroma

#### 11.80

OCCURRENCE OF FREE FLUID ON FAST ULTRASOUND IN TRAUMA PATIENT

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**Objective:** The patients presenting with blunt trauma in emergency department of our hospital undergo different radiological examination like pelvic, chest, cervical spine x rays as per

international protocol. Focused Assessment with Sonography for Trauma (FAST) is also performed to find out the intraperitoneal fluid. The FAST exam is distinguished from the other modalities by being a rapid, non-invasive and non ionizing bedside test. However increases the cost of management in trauma patients.

*Method:* This was Observational study conducted at emergency department of Aga Khan University Hospital. The data collection was from the date 1ST January to 3rd March 2012. The study included all patients in whom ultra sound FAST was performed in emergency department. Rest of the portable ultra sound performed in wards were excluded.

*Results:* In our study we had 150 patients all these patients had underwent ultrasound FAST examination. Intraperitoneal fluid is found positive in 20 patients out of 150 patients. Among these 20 patients who had intraperitoneal fluid 10 patients underwent CT abdomen examination for further evaluation. Details of results of outcome are presented

*Conclusion:* Ultrasound FAST is a primary tool to evaluate the intraperitoneal in blunt trauma patients. With high number of negative rate we need to consider if it is necessary in every trauma patient or tailored as per clinical suspicion

*Keywords:* Ultrasound fast, fluid, trauma patient

#### 11.81

##### OCULAR MANIFESTATION, COMPLICATIONS AND ETIOLOGICAL FACTORS IN STEVEN JOHNSON SYNDROME OR TOXIC EPIDERMAL NECROLYSIS

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*Objective:* To describe the acute and late ocular manifestations and complications in toxic epidermal necrosis (TEN) and Stevens–Johnson syndrome (SJS), and Identify the possible etiological factors.

*Method:* This descriptive cross sectional study was done at The Aga Khan University Hospital, which is a tertiary Hospital located in Karachi, Pakistan. A total number of 250 patients diagnosed as Steven Johnson or toxic epidermal necrolysis were treated in a decade (2001 to 2011). The study was comprised of 87 patients out of 250 patients. Due to incomplete treatment at the hospital and poor follow up only 87 patients were included in the study. The demographic data, etiology, general and ocular clinical presentations were recorded. The data was entered in a prearranged proforma and statistical analysis was performed using SPSS version 19.

*Results:* Out of 87 patients 55.2% were female and 44.8% were male. 33.3% patients were under the age of 18 years, 29.9% were between the age of 18 to 40 years, and remaining 36.8% were above the of age of 40 years. Unknown etiology was the main culprit for the SJS or TEN in our patients that was 23%. NSAID 12.6% and anti-epileptics 12.6% were the second most cause followed by fluoroquinolones 9.2%, anti-malarial 8%, anti-gout 6.9%, penicillin and cephalosporin 5.7% each, metronidazole 3.4%, anti tuberculosis and macrolide 2.3% each, anti helminthes, calrithrocyin, acetaminophen, tetracycline and anti fungal 1.1% each. In our group oral mucosa was affected in 84(96.55%)

patients, 45(51.72%) had Ocular involvement and 27(31.03%) had genital mucosal involvement. The patients were treated symptomatically. Glass roding were performed in 16(18.39%) of the patients due to minor adhesion formation in between conjunctiva. Even after judicious use of lubricants only two patients developed long standing sign and symptoms of dryness and conjunctival adhesions leading to an ulcer formation in one of the patients. The ulcer resolved leaving a non central corneal scar.

*Conclusion:* Ocular manifestations are frequent in SJS/TEN and can be mild to severe. They may possibly lead to acute and late complications. Early care and suitable intervention at some stage in early manifestations might prevent complications. Drugs are most often the reason for SJS/TEN but the precise etiology is not easy to identify. Further studies are vital to more understand and identify the possible etiology.

*Keywords:* Steven Johnson Syndrome, toxic epidermal necrolysis, ocular manifestations and complications

#### 11.82

##### OUTCOMES OF THYROIDECTOMY IN HYPERTHYROID PATIENT 10 YEARS' EXPERIENCE IN AKU

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*Objective:* To review and compare the outcomes of subtotal and total thyroidectomy in our patients with hyperthyroidism  
*Method:* All those patients who diagnosed as hyperthyroid and underwent subtotal or total thyroidectomy were included in the study. Data was collected by retrospective review of files from 2002 to 2011 maintained by Department of Health Information and Management, retrieved by ICD-9 coding. Patients with missing or incomplete records were excluded. Data was entered and analyzed on SPSS 19. All the continuous variables e.g. age, length of hospital stay, operating time and follow up would be expressed in means and S.D. Chi-square tests and pie tests for the categorical variables. The categorical variables i.e. gender, surgery type, complications etc would be expressed as proportions and percentages.

*Results:* A total of 40 patients were reviewed. 3 patients were excluded due to missing and incomplete data. 70% of the study population were female (n= 26) and 30% (n=11) were male. The mean age of our patient was 51 years and most of our patients 92% (n=34) were diagnosed as toxic multinodular goiter. Indication for surgery was made in 78% (n=29) as cosmetic or compressive symptoms while 22% (n=8) had resistant hyperthyroidism. 59% (n=22) Of our patient were underwent subtotal thyroidectomy rest of 41% (n=15) underwent total thyroidectomy. The mean operating time for subtotal and total thyroidectomy was 149.1 and 167.3 respectively. The mean hospital stay for STT and TT was 3 days and mean follow up was 3.5 years. The final histopath: of 94% (n=35) was benign nodular hyperplasia followed by 6% (n=2) were thyroiditis. 5% (n=2) and 10% (n=4) patients required calcium supplement on discharge in the STT and TT groups, respectively. 5% (n=2) and 2% (n=1) patients developed permanent hypocalcaemia, respectively. No cases of recurrent laryngeal nerve paralysis and recurrence of hyperthyroidism seen. During a mean follow up

of 3.5 years, 15 patients in the TT group required thyroxine replacement.

*Conclusion:* Both subtotal and total thyroidectomy is adequate surgical options for hyperthyroid patients. STT had an advantage over TT both in terms of lesser operative time and no lifelong thyroxin. Studies including large series of patients are required to make any recommendation

*Keywords:* Hyperthyroidism, thyroidectomy, thyroxine

### 11.83

#### PAK-NEDS – FALL RELATED INJURIES VISITING TO EMERGENCY DEPARTMENT

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*Objective:* Fall related injuries pose substantial public health and economic challenges especially in a low income country like Pakistan. We aimed to analyze the frequency and patterns of fall related injuries coming to the emergency departments across Pakistan

*Method:* Information on 68,390 injury patients registered in the Pak-NEDS surveillance system was included in the analysis. Data were collected from December 2010 to March 2011 in seven major tertiary care centers from all four provinces of Pakistan. These centers included 5 public and 2 private hospitals having a collective annual census of over one million patients. The data collection tool was finalized after consultation with the emergency department heads of all institutions. We analyzed information on basic demography, types, causes and outcomes of injuries, modes of arrival and delays, pre-hospital care and history, investigations, procedures and outcomes.  
*Results:* Fall related injuries account for 17.5% ED visits. Almost 68% of patients were male and most of them belonged to the Pathan ethnicity (40.3%) followed by Punjabi (34%). Most of the patients (72%) were between 15-45 years of age. Mostly patients arrived by themselves (91.4%) and only 7.8% of the cases were brought in via ambulances. Majority of the falls (59.7%) were due to slipping, followed by fall from height (25%). Intentional falls were reported in 34% of patients. Most frequent injuries were of extremities (53.4%) and head and face (24.7%). There were 32 (1.3%) expiries with 80.2% patients being discharged.

*Conclusion:* Fall related injuries impose a major burden on the Pakistani healthcare system. An improvement in pre-hospital care and safety measures at home and in workplaces are important steps in reducing this burden.

*Keywords:* Fall injuries, emergency department, Pakistan

### 11.84

#### PAK-NEDS – HEAD INJURIES COMING TO THE EMERGENCY DEPARTMENTS

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*Objective:* Head injury is a common cause of death and disability in young people. We aimed to analyze the frequency of head injuries coming to Emergency Departments (ED) across Pakistan for interventions aimed to improve quality of healthcare.  
*Method:* Information on 10,749 head injury patients registered in the Pak-NEDS surveillance system was included in the analysis. Data were collected from December 2010 to March 2011 from all four provinces of Pakistan in seven (5 public and 2 private) major tertiary care centers. The data collection tool was finalized after consultation with the ED heads of institutions. We analyzed information on basic demography, modes of arrival, cause of injuries, triaging, examination and outcomes.  
*Results:* About 72% were male and majority belonged to Pathan (40%) and Punjab (36%) ethnicity. Most (66%) of these patients were 16-45 years of age. Only 12% were brought in via ambulances. Major causes included Road traffic injuries (RTI) (60%), assault (23%) and falls (18%). Only 20% of the patient underwent triaging and 4% had Glasgow Coma Scale checked (mild traumatic brain injury [TBI] 50%, moderate TBI 29%, and severe TBI 21%). Majority of the patients were seen by medical officers/house officers. A total of 10.6% patients were admitted and 1.3% expired.

*Conclusion:* Head injury is a major burden for Pakistani healthcare system. Policies should focus on pre-hospital emergency care services and prevention of RTI. Advanced Trauma Life Support/ Primary Trauma Care guidelines should be made compulsory for the management of trauma patients.

*Keywords:* Head injury, Emergency Department, traumatic brain injury

### 11.85

#### PARENT -TEACHER AGREEMENT ON CHILDREN'S BEHAVIORAL PROBLEM BY USING STRENGTH AND DIFFICULTY QUESTIONNAIRE (SDQ)

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*Objective:* Assessing emotional and behavioral problems in children can be difficult and requires multiple informants. Besides observing the child, most mental health practitioners rely on information from the child's main caregivers including parents and teachers. Studies have shown that parents and teachers have disparate views and show little agreement when asked to rate the child's behavior. The aim of current study is to examine agreement between parent and teacher ratings on childhood behavioral problems using the Strength and Difficulty Questionnaire (SDQ).



**Method:** A Total 1495 pre-primary children were assessed from December 2010-February 2011 in three district of Sindh province on the Strength and Difficulty Questionnaire (SDQ). Mother and teacher ratings were taken on a community sample. Mean scores and Pearson correlation was calculated to see the relationship between parents and teacher rating on total score and sub-scales.

**Results:** Mean score rated by parents is higher as compare to teacher's rating. The weak correlation range from (-.051- 0.058) were found between parents and teachers rating on total and five sub-scales of SDQ.

**Conclusion:** Parent and teacher rating have no relationship for childhood behavioral problems on SDQ.

**Keywords:** Social and emotional problem, parent and teacher agreement, SDQ

#### 11.86

##### PATIENTS' PERCEPTIONS OF MAGNETIC RESONANCE IMAGING

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**Objective:** In the MRI Suit patients are usually given an explanation of the imaging procedure before they are scanned. This can determine the perception patient have of the examination and even the successful completion of the procedure. Claustrophobia is defined as abnormal fear of being in narrow or enclosed spaces. Problem experienced by the patient in the scanner included anxiety, panic symptoms, negative Cognitions (such as 'I will suffocate'). Other general measures used included depression, health anxiety and fears of restriction and suffocation.

**Method:** : Data was collected prospectively in the department of Radiology Aga Khan University and Hospital Karachi from Jan 2011 to August 2011. All MRI of different body part taken on Siemens Magnetom Avanto System during the study period total 5800 patients were included in the study. The entire patient who goes to the magnet room feel anxiety most of the exam cancelled due to claustrophobia.

**Results:** Total 111 MRI were cancelled out of ( 5800), 62% due to claustrophobia, 12% Anxiety fell restless 3% , 8% uncooperative, , 8 % un stable, 4% Involuntary movement and 4% patients were rescheduled under GA .15% patient were rescheduled for next day or other day for MRI after good explanations and have an attendant within the scanning room.

**Conclusion:** MR imaging using Magnetom Avanto 1.5 Tesla claustrophobic patients cannot lie down. MRI scan cancelled most common reason due to claustrophobia. If patient explained properly before the examination we can reduced the claustrophobic.

**Keywords:** MRI, claustrophobia, anxiety

#### 11.87

##### PATTERN OF EMERGENCY DEPARTMENT VISITS BY ELDERLY: DATA FROM A TERTIARY CARE HOSPITAL

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**Background:** The proportion of elderly population is increasing worldwide. Currently in Pakistan 7.3 million people (5.6% of total population) are more than 60 years old. In 1951, around 1.92 million people were over 60 while this figure is projected to increase to 22.07 million by 2030. This age shift has emerged as an important health issue and is associated with an increased utilization of emergency services by the elderly. **Objectives:** To study the pattern of elderly patients (>60 years) who visited emergency department in comparison to young adults (18-60 years).

**Method:** This study will be carried in the Emergency Department (ED) of AKUH. Data would be collected retrospectively of patient aged 60 years or more and then would be compared to patients aged between 18-60 years during the study period of 2 years (2009-2010) .Data collection sheet includes patient's demographic information, triage category, reason for visit, clinical presentation, ED length of stay, day and time of presentation and their disposition. Data would be entered and analyzed using SPSS version 19.0. Descriptive statistics were used to describe patient's demographics. Test of significance would be applied to analyze the continuous and categorical variables .A set of independent factors for admission and death among elderly patients will be derived by a multiple logistic regression

**Results:** Almost 24% (13014) of all adults (54588) presenting to the ED were over the age of 60 years. More than 57% (7499) of these belonged to the high priority (P1) triage category compared to 35% in younger patients. The median length of stay in the ER for elderly was 379 minutes in the elderly (252 min in under-60 yr patients) and they were more likely to get admitted to in-patient departments compared to younger patients (OR 1.7 CI 1.6-1.8). A high proportion of those admitted (20%) required intensive or special care. This was accompanied by a higher mortality risk in the elderly with an odds ratio of 2.3 (CI 2-2.5).

**Conclusion:** Our study elucidates an increasing trend of elderly ED visit over years. Elderly ED users differ significantly from younger adults in terms of criticality on presentation. Targeted interventions should be planned to provide optimal care for elderly patients with unique characteristics.

**Keywords:** Emergency department, elderly, Pakistan

#### 11.88

##### PENETRATING INJURY TO THE INNOMINATE ARTERY, ASCENDING AORTA AND INNOMINATE ARTERY AND ITS SUCCESSFUL REPAIR

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**Case Report:** 55 yr old man presented to the ER with Gun Shot injury to the manubrium. The bullet was found to be lying in

the mediastinum. Patient was immediately rushed to the operation theater and via median sternotomy, the mediastinum was exposed. The bullet had gone through the innominate vein, innominate artery and the arch of the aorta and was lying anterior to the trachea. Cardiopulmonary bypass was not immediately available but the bleeding had to be fixed. All the vessels and the aorta was repaired perfectly after a very challenging surgery. An interposition ringed gortex graft was placed between the ascending aorta and the innominate artery. Patient had a prolonged ICU course but he recovered completely with no neurological sequelae. Patient is doing well on a long term follow-up.

*Conclusion:* Gun shot wounds to the mediastinum and injuries to major vessels are usually fatal. However if they arrive early, time should not be wasted and these patients should be rushed to the OR immediately to give them the best chance for survival.

*Keywords:* Innominate, trauma, aorta

### 11.89

#### PERINATAL ARTERIAL ISCHEMIC STROKE

*Anila Haroon*

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*Case Report:* Stroke is not uncommon in neonates, but in developing countries like us with limited resources it has been missed and remains undiagnosed. The incidence of ischemic perinatal stroke ranges between 1 in 200 to 1 in 5000 births. The true incidence of this condition from our country is not known as neuroimaging facilities are available only in few centers, and cost constrains, most of these cases remain undiagnosed. We present a case report of a baby with arterial ischemic stroke.

*Conclusion:* Over the past decades, IPS has emerged as an important cause of brain injury in the perinatal period and remains a leading cause of CP. In developing country like us where there is limited facilities and resources for neuroimaging and other investigations, these cases are often not diagnosed and increased the morbidity in the form of cerebral palsy. There is a need for prospective study in a tertiary care setting with neuro imaging facilities available to know the real burden of this condition in our country

*Keywords:* Neonate, arterial ischemic stroke, neuroimaging

### 11.90

#### PERSPECTIVE OF CAREGIVERS IN THE PATH WAY OF EMPOWERMENT AND REHABILITATION OF CHILDREN WITH DISABILITIES IN KARACHI, PAKISTAN

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*Human Development Programme, Aga Khan University, Karachi*

*Objective:* This research is an output of the Research Programme Consortium on Women's Empowerment in Muslim Contexts, led by the City University of Hong Kong. It has been made possible by funding from the UK Department for International

Development (DFID) for the benefit of developing countries. The objectives were: 1. To explore the influence of children with disabilities on the daily lives of their mothers. 2. To describe the factors which influence the care-giving capacity of mothers. *Method:* A participatory qualitative research design was implemented in a low income community in Karachi. A women's group of caregivers, mostly mothers, of children with disabilities was formed. Several different Participatory Rural Appraisal (PRA) tools were used during the course of the group meetings to facilitate discussion including, social mapping and venn diagram. A thematic analysis on issues around care-giving and the relationship between the mother and her child with disabilities was conducted.

*Results:* Lack of accessibility in health, education and social services were reported by the caregivers, stigma was another barrier to reduce the accessibility of educational facility within the community that influenced the empowerment and rehabilitation of children with disabilities.

*Conclusion:* There are many factors including lack of the participation in decision making, anxiety about the future of children with disabilities, and lack of growth and development of children with disabilities caused distress amongst caregivers. However, community-based rehabilitation strategies in collaboration with policy implementation can enhance the process of well-being of children with disabilities and their families.

*Keywords:* PRA, Disability, empowerment

### 11.91

#### POSTOPERATIVE AMMENDMENTS BY THE ACUTE PAIN MANAGEMENT SERVICES TO OPTIMIZE PAIN MANAGEMENT IN PATIENTS RECEIVING EPIDURAL INFUSIONS AND INTRAVENOUS PATIENT-CONTROLLED ANALGESIA

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*Objective:* The principle responsibility of acute pain service (APS) is to ensure adequate pain relief with minimal side effects. APS often needs to make amendments to the originally prescribed pain management strategies. We performed a prospective observational study to assess the frequency and types of amendments made over a four months' period

*Method:* APS members assessed pain and side effects in patients receiving epidural infusions or intravenous patient controlled analgesia (PCA). Adjustments were made in doses or additional analgesics were added where indicated. Side effects were treated as required. Data were collected on the amendments made and their effects. Frequencies and percentages were computed for all categorical variables.

*Results:* During four months 323 patients were followed up, 209 (64.7%) receiving epidural infusions, and 114 receiving PCA. Overall 114 patients (35.3%) required amendments, 76 (36.4%) with epidural and 38 (33.3%) with PCA. Ninety eight (85.9%) had inadequate pain relief, 61 (29.1% of 209) with epidural, 37 (32.4% of 114) with PCA. Amendments in the epidural group were additional boluses (41), or bolus plus additional analgesics (19). With PCA, 19 patients required change of PCA settings and 18 received additional analgesics. Motor block occurred in

13: switch over to lower concentration worked in 11, and change in position in two. Epidural was discontinued in one patient for refractory hypotension. One patient required ondansetron. Improvement was seen in all patients after the amendments. *Conclusion:* APS plays an important role in improvement of the quality of pain relief and management of side effects.

*Keywords:* Postoperative pain, pain management service, epidural infusion

### 11.92 PREDICTORS OF OUTCOME IN PATIENTS PRESENTING WITH MODERATE TO SEVERE HYPERKALEMIA

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*Objective:* One of the most common electrolyte imbalance dealt by Emergency Departments (ED) is hyperkalemia [Potassium (K) level > 5.5 mEq/ dL]. Moderate to severe hyperkalemia (K level > 6.0 mEq/ dL) can cause serious arrhythmias therefore it is important to correct hyperkalemia promptly and treat the underlying cause. The objective of the study is to assess the survival of patients presenting to ED with moderate to severe hyperkalemia. We will also assess the factors associated with poor survival in moderate to severe hyperkalemia. *Method:* The study was conducted in Aga Khan University ED during November 2008 till October 2009. All adult patients (age 16 and above) who presented to ED with moderate to severe hyperkalemia were included. The charts of all the eligible patients were reviewed and data was collected including demographic information, comorbid conditions, presenting complaints, physical examination, laboratory workup, treatment and survival. Data was analyzed using SPSS version 16. Frequencies and proportions of categorical data were calculated. 2x2 tables were used to assess the association between moderate and severe hyperkalemia vs. age, sex, co morbidities, presenting complaints, presence of hypotension and chronic kidney disease (CKD). Statistically significant variables were entered into a multiple logistic regression model to determine the strength of association and control confounders.

*Results:* Total number of eligible patients was 247, out of which 51.8% were males and rest were females. 45% patients were between 46-65 years of age and 43% were above 65 years of age with only 12.3% patients between 15-45 years. 29% patients had 1-2 comorbid conditions, whereas 69% of patients had 3 or more comorbidities. Survival data was available for 213 patients; out of whom 186 (87.3%) patients survived till discharge. Of expired, 89% patients had K level 6.0-7.0 mEq/ dL and only 11% had K level of > 7.0 mEq/ dL. Age, coronary artery disease, high anion gap and moderate hyperkalemia were negatively associated with survival.

*Conclusion:* In patients presenting with hyperkalemia, increasing age, high anion gap acidosis and moderate hyperkalemia (K level 6.0-7.0 mEq/ dL) are predictors of poor survival.

*Keywords:* Hyperkalemia, Emergency Department, Survival

### 11.93 PREDICTORS OF OUTCOME IN SURGICAL ICU PATIENTS

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*Objective:* Our purpose is to evaluate and assess the morbidity and mortality of the surgical ICU patients and identify predictors and parameters that affect their outcome (i.e. mortality). Evaluate the predictive ability of APACHE II score for prognostication in our patient population.

*Method:* All adult patients admitted in surgical ICU (General Surgery) were included in the study. Data was collected by retrospective review of files from January 2009 to Dec 2011 maintained by Department of Health Information and Management, retrieved by ICD-9 coding. Patients with missing or incomplete records were excluded. Data was entered and analyzed on SPSS 19. All the continuous variables e.g. age, length of hospital stay etc. would be expressed in means and S.D. Chi-square tests for the categorical variables. The categorical variables i.e. gender, surgery type, complications, ASA status etc. would be expressed as proportions and percentages. Logistic regression analysis was done to compare mortality rates for the individual predictors and parameters in Surgical ICU (e.g. Age group, Co-morbidity, Surgery type, presence of sepsis, infections, APACHE score, etc.).

*Results:* A total of 157 patients were reviewed. 74% of the study population were male (n= 116) and 26% (n=41) were female. The most common mode of admission was through emergency (57%, n=91) and highest number of patients were in ASA IV category 30% (n=47). 26% (n=40) of them were trauma cases, out of them 18% were penetrating and rest were blunt (8%, n=13). 91(57%) of them underwent emergency surgery. Mean hospital course of 15 +/- 10 days. Overall morbidity was 63%. Surgical morbidity was seen in 20% of the patients, while non-surgical morbidity was observed in 54% of our patient population. Acinetobacter 17% (n=27) was the most common nosocomial infection followed by Pseudomonas 14% (n=22). Our in-hospital mortality was 43% (n=68) with a ICU mortality of 35% (n=55). Mean APACHE score of the patients in ICU was 23. Multi-variate analysis showed Male gender, APACHE score, presence of sepsis and Acute renal failure as an independent predictor of mortality in surgical ICU patients.

*Conclusion:* Mortality is significantly higher as compared to an international institution, with a slightly higher morbidity rates. Few significant, independent risk factors of poor outcome were identified. An attempt to provide objective probability and prognostic score estimates for critically ill hospitalized patients treated in ICUs. Prospective Studies in larger, more heterogeneous ICU patient populations are needed to confirm our observation. Standards of care, patient population and the availability of human and material resources are likely to be different, hence validated and calibrated predictive models are required. Lack of proper documentation, retrieval of data and poor follow-up are major set back in our setting

*Keywords:* Surgical ICU, APACHE Score

#### 11.94 PRENATAL DIAGNOSIS FOR BETA-THALASSEMIA MAJOR DETECTS NEW AND RARE MUTATIONS IN PAKISTANI POPULATION.

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**Objective:** To study  $\beta$ -globin gene mutations in chorionic villus Samples of  $\beta$ -thalassemia minor parents. Background:  $\beta$ -thalassemia is one of the most common autosomal single-gene disorder in Pakistan. Approximately 5% of the Pakistani population carries  $\beta$ -thalassemia trait and every year more than 6000 new children are born with the disease. A possible solution to this problem is prenatal diagnosis.

**Method:** Fetal cells obtained from chorionic villus sampling or amniocentesis was used as source of fetal DNA for mutation analysis in  $\beta$ -globin gene. Most common mutations were screened by the Amplification Refractory Mutation System. Linkage analysis was done for uncharacterized mutations and DNA sequencing was performed for unknown mutations by cycle sequencing method using Beckman Coulter genetic analysis system.

**Results:** A total 383 families were tested using a panel of 13 common and rare mutations by ARMS-PCR. Out of 13 mutations IVS1-5 (G-C), Codon 8/9 (+G) and 619bp deletion accounted 71% of the total mutations detected. Four unidentified samples were confirmed by DNA sequencing in which -88 (C-T), -90 (C-T) and codon 59 (+T) were identified. These mutations were first time reported in the Pakistani patients. In addition, 19.2% fetal samples were normal, 52.3% heterozygous and 26.4% were thalassaemia Major.

**Conclusion:** Our study presented distribution of  $\beta$ -thalassaemia mutations in Pakistani patients and describe some new and rare mutations in major ethnic groups. The outcome will assist in prenatal diagnosis and carrier screening, which represents an effective approach for prevention of beta thalassaemia in Pakistan.

**Keywords:** :  $\beta$ -thalassaemia, ARMS-PCR, Prenatal diagnosis and CVS

#### 11.95 PREVALENCE OF HEPATITIS B VIRUS INFECTION AMONG BARBERS AND THEIR KNOWLEDGE, ATTITUDE AND PRACTICES IN DISTRICT SUKKUR

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**Objective:** In many developing countries, several occupations lack regulatory mechanisms. Occupation of barbers is among such professions. For a barber, use of blades and razors is part of their profession. Therefore, exposure to blood due to cuts while making shave and/or cutting hairs of customers is a routine phenomenon putting them at risk of many blood borne diseases including hepatitis B. We conducted this study in order to

determine the prevalence of Hepatitis B virus infection among barbers in district Sukkur. Secondary objective was to determine their knowledge, attitude and practices regarding risk factors leading to HBV

**Method:** This cross sectional study was conducted from September – December 2011 in Sukkur and Rohri talukas of district Sukkur on a sample of 385 barbers. Sampling strategy was consecutive sampling. Data regarding socio-demographic characteristics, knowledge, attitude and practices was collected using structured questionnaire. Blood samples were collected for HBV serology. Descriptive statistics were used to report Socio-demographic characteristics and proportions for each item were calculated for knowledge, attitude and practices. A scale was developed to determine the proportions of responses to KAP items

**Results:** Prevalence of HBV among barbers was 2.1%. Though 93.7% used new blade on every customers but, knowledge of barbers about HBV and its transmission routes was poor. 60% barbers knew about the spread of HBV via contaminated blood (59%), 22.5% reported hand washing between customers, 22% used anti-septic for cleaning instruments and 94% reported frequency of cuts < once a week. Overall response to attitude items was good except that only 35.1% and 33.8% agreed to have vaccination against HBV for themselves and for families respectively. 72.4% used antiseptic for hand washing. Proportions of knowledge and practice scale showed poor scores and proportion of those having knowledge was limited to maximum of 4 items out of 9 items. Despite poor knowledge and practice, almost 80% barbers responded positively to all 9 items of attitude scale

**Conclusion:** Prevalence of HBV among barbers was lower compared to available figures for national prevalence; however a comparative study design with appropriately calculated sample size may be more suitable to make such comparisons. Poor knowledge, attitude and practices of barbers highlight the need for enforcing policies to ensure standardized work environment and reduce the exposure via risky behaviors

**Keywords:** Hepatitis B, Barbers, Sukkur

#### 11.97 PROLONGED-STAY PATIENTS IN THE PACU: A REVIEW OF THE LITERATURE

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**Objective:** Postanesthesia care unit (PACU) has evolved from general to intensive care specialty area, thereby creating a space to provide complex care to patients. Patients with extensive surgeries are now being kept in PACU until their condition is stabilized before shifting them to their designated wards. This creates more demands on the PACU nurses, because, in many extensive surgeries patients require clinical monitoring for safe recovery from postanesthesia and therefore spend longer time in PACU. A prolonged-stay patient in a PACU is a crucial issue as it creates bottlenecks in the PACU and results in slowing down of surgical schedule.

**Method:** A comprehensive search was carried on data base searches of cumulative index nursing health and allied literature (CINHAL) and Science Direct, for both researched and non-researched articles. The research studies and review articles from 1994 to 2011 were included. The literature review is based on research topics relevant to the care of patients with prolonged-stay in PACU, which includes definition, causes for prolonged-stay in a PACU, impact of prolonged-stay patients in a PACU, and a critical appraisal of studies.

**Results:** Limited studies discuss the impact of prolonged-stay patients on PACU patients, families and PACU nurses. The patients' prolonged stay in the PACU; affects the quality care of other postoperative patients as it increases the workload of a nurse. It may also affect the morale of PACU nurses as they may think that they are not doing justice by providing suboptimal care to their patients. The availability of beds in PACU changes depending on the condition of each patient. Moreover if a patient is ready for transfer and beds are not available on the wards a backlog is created in the PACU results in slowing down of surgical schedule which lead to dissatisfaction for surgeons, nurses, patients and their families

**Conclusion:** The literature is consistent in stating that PACU prolonged-stay and ICU overflow is a universal problem in the field of perioperative care but there is scarcity of data on the extent of the practice and the consequences on patients and PACU nurses. Further research is required to explore the experiences of PACU nurses, patients and their families

**Keywords:** Postanesthesia care unit, literature review, length of stay

#### 11.98

##### PROMPT ACTION SAVE LIVES 'RESUSCITATION STEP DOWN UNIT IN ED'

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**Objective:** 1) To provide an area of critical patient care within ED premise to any patient who requires respiratory supportive care and invasive monitoring. 2) To provide an area for intensive care management and monitoring within ED premise when the availability of ICU bed cannot be assured. 3) To help the Institution in ensuring need based care in most pressing situations  
**Method:** In order to combat ED crowding, flexible bed management strategies are needed, so that all patient care areas are optimally utilized. Based on this a high dependency area within ED premise was conceptualized. This area was named as Resuscitation Step down Unit and had the following infrastructure details. Four monitored beds with 2 registered nurses to cater the patient's nursing needs and 2 emergency physicians (1 senior and 1 junior) provides oversight and coverage to RSD. Faculty rounds would be conducted during the start of each physician shift i.e. 12 hourly and at time as per need as well. Nursing coverage is strengthened by PCC (Patient Care

Coordinators). Administrative oversight is provided by Clinical Manager (DEM), Administrator on-call (AOC), & Service Coordinator

**Results:** Total admissions (including patients who were ventilated or put on BiPaP) were 839 from Jan -July 2011. Out of these 839 patients, 63% were ventilated and the rest were put on BiPaP i.e. 37%. Average LOS in RSD was 14.57 hour. Mortality rate of RSD was 4.4%. 58% patient were admitted in ICU-AKUH from RSD. 26% of patients were admitted in areas other than ICU, e.g. SCU/Step Down Unit/CCU. 4% patients were transferred out from RSD. 8.3 % patients left RSD against medical advice. Gender distribution of RSD admission was 57% males and 43% females. Of the total 839 patients, 85% of patient belonged to PI, & 8% were PII. Most common admitting diagnosis in RSD are shortness of breath (n=148), Chest pain (n=31), RTA (n=52), h/o fall (n=20), Drowsiness (n=48), Fever (n=19).  
**Conclusion:** Need for Resuscitation Step down unit within ED premise is clearly been established. RSD admission is cost effective, safe and is more accessible, especially in situations where ventilated bed is not available and patient's management necessitates immediate intensive care management.

**Keywords:** Emergency department, Pakistan, resuscitation step down unit

#### 11.99

##### RECURRENT GIANT MEDIASTINAL LIPOBLASTOMA IN A 14 YEAR OLD GIRL: A CASE REPORT

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**Objective:** Lipoblastoma is a rare benign tumor of immature fat with majority of the cases presenting in the first three years of life. Most tumors are small and occur in the extremities, trunk, head and neck and occasionally mediastinum and retroperitoneum.

**Method:** One case of mediastinal lipoblastoma was studied along with literature review.

**Results:** We report a case of giant lipoblastoma of mediastinum in a 14 year old Afghani female who presented with progressive dyspnea. On initial incision biopsy, a possibility of lipoblastoma was raised which was followed by excision of the mass. The resected tumor measured 21x18 cm. A diagnosis of lipoblastoma was made. The patient was on follow up and developed recurrence 18 months after the initial surgery

**Conclusion:** Lipoblastoma of mediastinum is rare. The current tumour is the second largest tumor reported in the English literature. Recurrence is rare, but noted in our case. Follow up is therefore recommended in these patients.

**Keywords:** Giant lipoblastoma, mediastinum, recurrence

**11.100****RESPONDING TO DISASTER – EXPERIENCE FROM ER PHARMACY OF A TERTIARY CARE HOSPITAL IN PAKISTAN**

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**Background:** Emergency pharmacy (EP) of Aga Khan hospital (AKUH) operates 24/7, deals not only with emergency department (ED) admitted patients but also with discharges of ED. EP plays very important role in disaster management. The country has undergone a succession of traumatic sociopolitical experiences. We had dealt with two major bomb blasts in the past 3 years resulting in mass causality victims being treated and managed in ED.

**Method:** AKUH has a proper disaster management plan with a capacity to handle 100 simultaneous casualties. The main medication list for managing casualty influx is collectively prepared and approved by Pharmacy & Therapeutics Committee, EP team and ED physicians. As soon as ED received >5 casualties, disaster alert was declared. EP delivered disaster cart to the nursing station in resuscitation room of ED. EP pharmacists (PHT) monitored the availability of all medicines at patient bedside, PHT and pharmacy technician helped the nursing staff for the administration of drugs. At restoration of the situations, PHT checked the consumed medicines and refilled the cart and processed all medicines used in disaster victims to ensure proper drug documentation. EP on monthly basis inspects the disaster cart for availability of all life saving medications, proper storage and expiry management.

**Conclusion:** EP has vital role in disaster preparedness and actual management in critical scenarios. EP PHT participation helped in availability of all life saving medications when needed and with proper profiling in patients' charts and inventory/expiry management.

**Keywords:** Disaster preparedness, actual management, proper profiling in patients' charts and inventory/expiry management

**11.101****ROLE OF PHARMACIST INTERVENTION IN EMERGENCY DEPARTMENT TO ENSURE MEDICATION SAFETY AND COST EFFECTIVENESS**

*Feroza Perveen, Abdul Latif Sheikh, Syed Shamim Raza, Salwa Zubair, Aisha Akram, Abdul Rauf, Haris Mazhar*  
*Department of Pharmacy, Aga Khan University, Karachi*

**Background:** The purpose of this study was to perform a descriptive analysis of pharmacist interventions (PI) and to evaluate pharmacist participation in cost reduction in the Emergency Department (ED). Sufficient literature supports that PI plays pivotal role in ensuring the safe and more effective medication therapy in ED where quick decision is required. Pharmacists are also valuable in tracking and reducing both

Adverse Drug Reactions (ADRs) and Medication errors.

**Method:** Pharmacist reviews all medication orders and rectifies any possible medication errors in the patient profile. Recommendations by the pharmacist to optimize the therapy are documented in computerized physician order entry (CPOE) system as "pharmacist intervention", categorized according to type and severity. For this study we retrieved data of six months (January- June 2011) from the recorded intervention logs in the CPOE system.

**Results:** During the study period, 630 pharmacist interventions were documented, 43% were related to antibiotics, 12% painkillers, 8% antiemetics and PPIs; according to the age wise categorization, 28% were in the age group 0 - 10 years while 72% above 10 years. 54% problem prescriptions required 1-10 min while 46% 10-30 min. The most frequent interventions were above therapeutic dose 31%, pharmacist recommendations 21%. Cost avoidance during the study was determined to be ~107600 Rs

**Conclusion:** Our results are consistent with the international literature which supports the pharmacist role in providing the most appropriate, safe and cost effective therapy for desired outcomes in ED patients.

**Keywords:** Pharmacist interventions, medication safety, cost effectiveness

**11.102****SECRETORY CARCINOMA OF BREAST: CLINICOPATHOLOGIC STUDY OF 8 CASES**

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**Objective:** Secretory carcinoma of breast is a rare variant of ductal carcinoma comprising less than 0.1% of all breast cancers. The objective of our study is to describe clinicopathological features of secretory carcinoma of breast (SCB) on a cohort of cases

**Method:** We retrieved reported cases of SCB in the Section of Histopathology, Department of Pathology & Microbiology Aga Khan University Hospital Karachi, from May 2004 to Dec 2011. The slides were reviewed and clinicopathological features were noted.

**Results:** A total of 8 cases of SCB were found. The age ranged from 17 to 60 years (median 41 years) with a female to male ratio of 7:1. Lumpectomy was done in 6 cases and mastectomy in 2 cases. The tumor size ranged from 2.5 to 10 cm (mean 5.5 cm). Histologically, abundant extra and intracellular secretory material was seen in all cases. Most of the tumors showed mixtures of patterns with dominant microcystic and papillary patterns. In situ component was seen in only 1 case. Lymph node metastases were seen in both cases with lymph node sampling.

**Conclusion:** SCB is a rare type of ductal breast carcinoma. The papillary pattern of SCB is rare according to published data, but was seen in majority of our cases. In-situ secretory carcinoma

is even rarer and to date we have seen a single case only. Though, the majority occurs in females, these can be seen in males as well.

*Keywords:* Secretory carcinoma, papillary patten, in- situ secretory carcinoma

### 11.103

#### SHORT TERM NEONATAL OUTCOME: RISK IN LATE PRETERM VS TERM INFANTS IN A TERTIARY CARE

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

*Objective:* To determine the short term neonatal outcome in late preterm infants compared to term infants, and their association with maternal risk factors.

*Method:* This retrospective cohort study involves 326 late preterm babies and equal number of term control babies born during Jan 2009-Dec 2009 at Aga Khan University Hospital Karachi. Data were retrieved from patients medical records on a structured questionnaire, this include obstetric history, maternal complications, neonatal morbidities etc. All these information's were reviewed and compared with the control group.

*Results:* Late preterms constitute 11% of all deliveries and 70% of all live preterm births. Respiratory distress syndrome, intrauterine growth retardation, hyperbilirubinemia and sepsis were significant morbidities in the study group. Maternal risk factors that were more common in late preterm group were hypertension, PROM and urinary tract infection. *Conclusion:* Our data support recent literature regarding susceptibility of late preterm group which seems to be healthy and apparently mature as term babies. Thus these babies need to be managed more vigilantly to decrease the overall neonatal mortality rate.

*Keywords:* Late preterm birth, neonatal morbidities

### 11.104

#### SPINAL NEEDLE STABILIZATION USING A HAND LOCKING MANEUVER WITH THE CONVENTIONAL BACK-EYE COMBINED SPINAL-EPIDURAL SET

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*Objective:* The stabilization of spinal needle while performing the combined spinal epidural procedure with a hand locking maneuver. This technique has facilitate the complete immobilization of the spinal needle throughout the procedure.

*Method:* As the procedure begins and the epidural and subarachnoid spaces are identified, the gap between the hubs of both needles is approximately 1-2 cm and can easily be filled by grasping the exposed part of the spinal needle behind the epidural needle hub with a hand locking maneuver. The left hand index finger and thumb are used to stabilize the needles, and the other three fingers rest on the patient's back.

*Conclusion:* When properly applied, this maneuver prevents forward and backward movement of the spinal needle while the block is being performed and during drug injection. In our experience, this technique is easy to use; it preserves the dural click and may minimize the risk of damaging the tip of the spinal needle.

*Keywords:* Spinal needle, epidural needle, combined spinal epidural needle

### 11.105

#### SURGICAL SITE INFECTION FOLLOWING HERNIA REPAIR IN THE DAY CARE SETTING OF A DEVELOPING COUNTRY: A RETROSPECTIVE REVIEW

*Amyr Pardhan, Samia Mazahir, Abdul Rehman Alvi, Ghulam Murtaza*

*Department of General Surgery, Aga Khan University, Karachi*

*Objective:* to determine the incidence proportion of SSI following hernia repair in the day care setting from a tertiary care hospital of a low income country.

*Method:* This is a retrospective audit of Aga Khan University Hospital from 1st June 2008 to 30th May 2009. Patients with age >15 years, who underwent Lichenstein's open mesh repair in day care were included. SSI was labelled if the records revealed any of the following; 1) opening of the wound by the primary surgeon, 2) pain, tenderness and raised temperature of skin, 3) Purulent discharge from the wound, 4) if surgeon has documented as SSI.

*Results:* 104 patients were included in the study, out of which 102 were males and 2 were females. Mean age was about 45.6 yrs. After reviewing the retrieved files, 104 patients were found eligible, 102 were males and 02 females. Overall wound related complications were found in 12.5%, where as SSI was found in 7.7% patients. Smoking and irreducibility were found significantly associated with SSI.

*Conclusion:* We found 7% incidence of SSI after hernia repair with mesh in a day care setting at a tertiary care hospital of a low income country, which is higher than internationally reported incidence. Smoking and irreducibility were found significant risk factor for SSI.

*Keywords:* Surgical Day Care, Inguinal Hernia, Surgical Site Infection

### 11.106

#### THE DIVIDED WORLD OF THE CHILDREN: DIVORCE AND ROLE OF CO-PARENTING IN CHILD ADJUSTMENT

*Seema Akbar*

*Nursing Services, Aga Khan University, Karachi*

*Objective:* Recently, there has been wide interest in the association of Parental divorce and children adjustment. It is generally accepted that divorce primarily impact on children and their overall development. Researchers also proposed that this traumatic event brings long-term negative effects on children life style.

*Method:* The literature review approach has been utilized for this study and various researches has been reviewed and incorporated in this study. The various themes indicated that child experience several inner and outer adjustment in their life time.

*Results:* In order to reduce these consequences of adjustment, Co-parenting provides central attention to the children and helps them in strengthening their mental health. The question remains that how and what parenting can strengthen parent-child relationship? Hence, the aim of the present study is to elucidate the children adjustment and parental role followed by divorce. Moreover, this study particularly explains child internal and external adjustment as well as the association of parental role following divorce.

*Conclusion:* This study begins with the objectives that aim to explore the effects of the children adjustments. Furthermore, To accomplish the purpose of this study, it discussed about the parenting styles which helps in better development of the children as well as it minimizes the rate of negative effects on children overall health. In addition to that, this study elaborates that parenting is very important to overcome the negative effects of children adjustment after divorce.

*Keywords:* Parental divorce, child inner or internal and outer or external adjustments, co-parenting.

#### 11.107

##### THE FREQUENCY OF DEPRESSION IN POST SURGICAL HEAD AND NECK CANCER PATIENTS AT TERTIARY CARE HOSPITAL.

*Nabeel, Mohammad Sohail Awan, Salman Ahmed Mangrio*  
*Department of Surgery, Aga Khan University, Karachi*

*Objective:* Depression is an important condition in HNC patients often remains under diagnosed and leads to major problems in these patients like non-compliance to treatment. There are multiple causes which may include diagnosis of cancer itself, treatment, pain, and disfigurement. To screen these patients different structured diagnostic instruments are available. We used HADS, as it was designed originally as a screening test, and was meant to be used with medically ill populations and it was also validated in URDU. Western literature has constantly shown prevalence of MDD in post-surgical HNC patients, we aimed to determine the same in our population as there is no local data available and by knowing it we will be able to decide the magnitude of the problem in our patients and help in designing strategies towards the better outcome. To determine the frequency of depression in post-surgical head and neck cancer patients.

*Method:* This is a prospective cross-sectional study. Done at Aga Khan University Hospital. Biosy proven cases of squamous cell carcinoma of head and neck were included and HADS was calculated pre and post operatively on 96 patients

*Results:* The frequency of depression in post-surgical HNC patients was found to be 53.1%. and worsens in patients with, large tumor size, some specific sites involved by tumor.

*Conclusion:* The frequency of depression in head and neck cancer patients post operatively is 53.1% in our region.

*Keywords:* Head and neck cancer, surgical treatment, depression

#### 11.108

##### TITLE: CAN 'PAY FOR PERFORMANCE' INCREASE UTILIZATION OF HEALTH SERVICES AND IMPROVE THE QUALITY OF CARE IN LOW AND MIDDLE INCOME COUNTRIES? A REVIEW OF LITERATURE

*Mubashir Zafar, Neelofar Sami*  
*Department of Community Health Sciences, Aga Khan University, Karachi*

*Objective:* The "pay-for-performance" (P4P) tool has been used in low and middle-income countries in order to improve the performance of health care providers. Pay for performance can be defined as a payment or financial incentive associated with achieving defined and measurable goals related to improvement in performance of health care providers. Studies have shown that It helps to improve the quality of care and efficiency but has a drawback that it has a focus on a single condition and do not reflect the complexity of caring for patients with multiple conditions. There are various types of "Pay for performance" including Conditional cash transfer, transportation subsidies, financial rewards etc. Objective We conducted this review in order to assess the impact of various strategies implemented under the umbrella of 'pay for performance', on the utilization of health services and quality of care in low and middle income countries.

*Method:* Different documents, papers, reports and literature of was search to assess the impact " pay for performance" on utilization and quality of health services and used Google search engine for this purpose. Following terms were used: quality of health care; insurance, health, reimbursement; physician incentive plans; and reimbursement, incentive. Analysis of the papers and project documents within last 10 years i.e. from 2002 to 2012 was conducted.

*Results:* The P4P schemes range from very large national programs to localized pilots and has been successfully implemented in post-conflict/ fragile areas. It contributes to overcome the financial and physical barriers to access the poor household face, increasing the utilization of health services and overcoming barriers pretended by stigma. Pay for performance model implemented in Dera ghazi Kahn district in Pakistan was implemented through free of cost vouchers given to pregnant women for antenatal checkup and transport facilities. The facility based deliveries increased from 20 to 90%. In Morocco P4P model implemented through paid to the physicians for quality of care, screening of cervical cancer increased from 1.7 to 5.3% and hemoglobin A1c increase from 0.2 to 2.1%.

*Conclusion:* Paying physicians and patient to reach a common, fixed performance target may produce improvement in quality and utilization of services and will largely reward those with higher performance at baseline.

*Keywords:* Pay for performance, middle and low income countries, health system



### 11.109

#### TO ASSESS PATIENT REPORT TURNAROUND TIME FOR ALL RADIOLOGY PROCEDURES.

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Aga Khan Hospital for Women & Children and Department of Radiology, Aga Khan University, Karachi

**Objective:** To achieve the target as = 90% completion of radiology procedures with Reports within 24 hours for all OSR patients & 48 hours for In-Patients (OPD) on working days, except emergency cases. Effective time management focuses on knowing what needs to be done. When time is a vital resource for providing quality services in radiology department includes prompt information services, cash counter, appointment services, timely perform radiology examination associated with prompt reporting services.

**Method:** Retrospective analytic study conducted from February 1 to July 31, 2011 at AKU (Stadium Road) and Aga Khan Hospital for Women & Children (Kharadar). Data calculated with the help of two different formulas: A: Total Time for Radiology process: Time Out - Time In Total No. of Reports completed within time B: % of reports completed within time frame 100. Total no. of Patient

**Results:** About 11772 (100%) patients were Examination, Out of these 11009 (93.518 %) had completed reports within time frame & 763 (6.5%) patient were examined within time limits (Reported Examination) and collected their X-Ray films as "WET FILMS", so we had marked these patients in the RIS as " Non Reported Examination". Then we used a checklist for counter check our finding and analyzed. Total 245 patients were randomly selected & calculated total expending time at radiology department to meet service i.e. 808 hours & 31 minutes & we achieved a meantime of three hours & two minutes 3.2 hours per patient. It is proved that we achieved our target with smart manner & managing the time effectively.

**Conclusion:** Along with precision, clarity and completeness timeliness are also very important. Therefore, in order to get desirable results from RIS appointment mechanism needs to be strengthened. Formula: A: Total Time for Radiology process: Time Out (Computerized print on Radiology Report) minus Time In (computerized print on Flow Slip) {TT:TO-TI}. Numerator: Total No. of Reports completed within time B: % of reports completed within time frame.

**Keywords:** RIS [Radiology Information System]

### 11.110

#### TO EVALUATE THE FREQUENCY AND TYPES OF INCIDENTAL FINDINGS IN INCIDENTAL FINDINGS OF THE MDCT UROGRAPHY.

Muhammad Asif Bilal, Uzma Naz, Raza Sayani, Amin Rajani  
Department of Radiology, Aga Khan University, Karachi

**Objective:** The objective of our study was to evaluate the frequency and types of incidental findings in MDCT urography.

**Method:** The study was conducted in radiology department of tertiary care hospital. This was the retrospective study. The

sample size based on 100 patients who came in radiology for CT KUB between March 2012 to April 2012. We include patients with age group from 18 to 65 yrs rest of others were excluded. Data of 100 patients was collected from the archiving system (PACS).

**Results:** In our study overall 100 patients were evaluated (44 females and 66 males), CT KUB was normal in 24 patients however in 76 patients KUB related findings were identified. 63 patients had incidental findings were also noted which were not related to urinary system. Hepatomagely and hypodense liver was most common in 18 cases, Fracture of pars interarticularis of L5 vertebra is noted in 3 patients, 3 patients had prostatomagely, 8 patients had degenerative changes in dorsolumbar spine, Appendicoliths noted in 8 patients, 21 patients had different incidental findings like wedging of T11 vertebra, pneumobilia, splenunculus, bilateral adrenal adenomas, umbilical hernia, paraganglioma, free fluid, massive ascites with omental thickening, bulky left ovary with cyst, calcified lymph node, high density ascities, bilateral spondylolysis of L5 vertebra, external iliac lymph node, calcified cysts and prostatic calcifications.

**Conclusion:** Incidental findings are common in both gender. An awareness of the prevalence of the incidental findings detected at CT KUB is helpful for diagnosing any other abnormality which may actually be the cause of symptom not related to urinary system.

**Keywords:** Urography, incidental findings, CT

### 11.111

#### TO EVALUATE THE FREQUENCY AND TYPES OF INCIDENTAL FINDINGS IN MDCT UROGRAPHY

Muhammad Asif Bilal, Uzma Naz, Raza Sayani, Amin Rajani  
Department of Radiology, Aga Khan University, Karachi

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*Conclusion:* Incidental findings are common in both gender. An awareness of the prevalence of the incidental findings detected at CT KUB is helpful for diagnosing any other abnormality which may actually be the cause of symptom not related to urinary system.

*Keywords:* Incidental findings, urography, free fluid

### 11.112

#### TRAINING COMMUNITY FIELD WORKERS TO CONDUCT QUALITY EARLY CHILD DEVELOPMENT ASSESSMENTS: EXPERIENCES FROM AN ECD TRIAL, NAUSHERO FEROZE, SINDH

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

*Objective:* More than 200 million children younger than 5 years from developing countries are not attaining their developmental potential. In order to advocate for early child development (ECD) interventions for these children, interventions need to be designed and tested for effectiveness through measures of different ECD outcomes. In developing countries, where these interventions are most needed, it is difficult to find personnel with expertise in evaluating child development. The current paper describes the training process of community based workers to conduct high quality assessments from an ECD trial in rural Sindh. *Method:* The battery of assessments in the trial outcomes included different measures of mothers (e.g. maternal depression) and children (e.g. cognitive development). A team of community based child development assessors (CCDAs) were identified for administering assessments who were local, fluent in Sindhi and had core competencies required for assessments (e.g. comfortable with children, good communication skills, good observation skills). The training comprised of classroom training on ECD concepts and principles of evaluating child development supplemented with supervised field practice. The quality assurance strategy comprised three core components: (1) Daily debriefings (2) Observation and coaching with Master Trainer (3) Knowledge building in child development through workshops, conferences and meetings. Bland and Altman's test was used to assess inter-rater agreements for each measure with the Master trainer (gold standard).

*Results:* The results indicated a high agreement between the Master Trainer and the CCDAs ranging from 0.97 to 0.99 for performance tools and 0.60-0.83 for observation tools. *Conclusion:* A feedback loop mechanism should be an integral part of the quality assurance strategies used in child development assessments. The framework can be applied to other community based data collection measures.

*Keywords:* Early Child Development, community based assessors, quality assurance strategies

### 11.113

#### TRAUMA SERIES: IS IT REALLY NECESSARY FOR EVERY TRAUMA PATIENT??

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

*Objective:* There is an important role of Trauma series in Road Traffic Accidents (RTA) patients. This has been recommended in multiple guidelines internationally. However does this recommendation apply in our local setup is questionable. This may be due to financial constraints and also the difference in trauma impact.

*Method:* A retrospective descriptive study was carried out between April 2011 to February 2012 in the Department of Diagnostic Radiology, Aga Khan University Hospital Karachi. Subject of our study were adult patients with blunt trauma who had undergone trauma series.

*Results:* Total of 600 x-rays of 200 patients were reviewed. The age range from 16 - 65 years (Mean 24.5 +/- 8.5). Trauma series was negative in 162 patients, as they had normal lateral cervical spine, anteroposterior chest, and anteroposterior pelvis x-rays, however it turned out to be positive in 38 patients. These 38 patients were received in Emergency with history of trauma among these most of the patients had the history of RTA. Out of 38 positive cases (total 45 sites of injury), 10 rib fracture, 10 fractures of clavicle, 1 pneumothorax, 2 pleural effusion, 4 cervical spine fracture, 1 dislocation of cervical spine, 1 rudimentary intervertebral disc at C6-C7, 7 fracture of femur and 4 fracture of pubic rami, 1 ischium fracture, 2 iliac fracture, 1 hip dislocation, 1 intertrochantric region fracture identified. *Conclusion:* This study suggests that use of whole trauma series (include lateral cervical spine, AP chest, and anteroposterior pelvis) in evaluation of trauma considering local setup, in conscious patient is not necessary, when adequate clinical information can be obtained. Instead, a selective approach by using individual component of whole trauma series in conscious patient, when an adequate clinical examination can be performed, would be safe, avoid unnecessary ionizing radiation exposure, less time consuming and cost effective.

*Keywords:* Trauma, Fracture, Radiation

### 11.114

#### UNDERSTANDING THE LINKAGE BETWEEN DISABILITY AND POVERTY: A QUALITATIVE OUTLOOK

*Ghazala Rafique, Sayeeda Amber Sayed, Seema Lassi*  
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*Objective:* Emerging evidence from the studies confirms an inherent and mutually reinforcing link between poverty and disability. People with disabilities are the poorest of the poor and the most vulnerable group in a society. Most vulnerable are the disabled children in their early phases of growth. Poor nutrition, inadequate feeding, poor insanitary conditions, inaccessible buildings and transport, lack of health care facilities

and schooling, all contributes to the reinforcement of disability and poverty. This study intended to gain a better understanding of the local definitions and perceptions of disability and the bi-directional connection between disability and poverty which entraps children in developing countries like Pakistan.

**Method:** This specific publication is part of a large quantitative and qualitative disability research conducted in four districts of Gilgit-Baltistan to explore various aspects of children with disabilities aged 0-15 years. 27 FGDs were conducted to collect culturally specific and contextually rich data regarding the perceptions and experiences of children with disabilities in Gilgit Baltistan from parents, teachers and rehabilitation staff and disabled children themselves. Data was transcribed as verbatim and analyzed through N Vivo version 2 for thematic coding.

**Results:** The major themes which linked disability and poverty included unaffordability resulting in inaccessible medical care for the disabled child, lack of education and skill development facilities and inadequate living conditions due to poverty which intensify the disability in a disabled child. Participants reported that a child with disabilities is at a risk of being and remaining among the poorest. Lack of nutritious food harms children's maturation and development, which results in mental retardation. Inadequate sanitary installations leads to intestinal infections, which are remain untreated in a poor environment and causes illness and impairment. Lack of access to health care creates and increases impairment. The unavailability of basic medicines and specialized care, leads to disability or worsens disabling conditions. Households with disabled children face the additional financial costs associated with caring for a disabled child thereby enhancing poverty in the family.

**Conclusion:** Understanding the processes that underpin the poverty-disability dynamic, and the reasons that prevent disabled children from participating in, or benefiting from, development opportunities is, therefore, a pre-requisite for suggesting pro-disabled people's policy interventions.

**Keywords:** Disability, Poverty, Development

#### **11.115** UNDERSTANDING THE ROLE OF MEN AND WOMEN FOR FAMILY PLANNING DECISION MAKING IN HYDERABAD CITY, PAKISTAN

*Ayesha Aziz, Rozeena Gillani, Sayeeda Amber Sayed*  
Department of Human Development Programme, Aga Khan  
University, Karachi

**Objective:** Pakistan is the 6th most populous country in the world that recently exceed 7 billion populace, moreover it has South Asia's highest fertility rate, which is about four children per woman. In the midst of enormous electricity shortfalls, shutdown of schools, high unemployment rate with low literacy level and rising Islamist militancy, the uncontrollable population increment is a ticking time bomb. Contraception is shunned under traditional social mores. Above all, the bigger cultural hurdles are reported to be the powerlessness of many women to make their own decisions. Objectives: • To understand the role of men and women in family planning decision making in Taluka Hyderabad, Pakistan • To determine the decision-maker in the acceptance of family planning in Taluka Hyderabad, Pakistan

**Method:** We conducted a cross sectional survey with a total of 378 participants (who were ever married and aged 15-50 years) in Hyderabad city. Participants were recruited through multiple cluster stage sampling and interviewed through a structured close ended questionnaire consisting of 22 items.

**Results:** There is a huge gap between FP knowledge and practice. 70% participants knew about at least one method of FP but only 30% participants have ever used contraceptives; among them only 18% chose contraceptive by themselves. Upon asking the reasons of not using F.P methods, 37% participants reported the desire for male child, 35% had religious constraints while 14% reported lack of cooperation from husbands. 56% females informed that their husbands never go with them to seek family planning services. Moreover, 45% participants shared a misconception that usage of contraceptive pills and injection leads to infertility.

**Conclusion:** Study results presents a complex picture, in which contraceptive prevalence rate has remained almost unaffected over the last two decades. Undeniably, the knowledge regarding FP methods has increased but In the patriarchal fabric of Pakistani society, Pakistani males need to be actively involved to ensure responsible parenthood. There is an immediate need of structural changes in the present national family planning program, giving more stress on broader involvement of men in family planning. Men's awareness regarding family planning should be raised through mass-media and male focused behaviour change campaigns need to be undertaken to change their perspective by informing them about the benefits and choice of FP methods.

**Keywords:** family planning, decision making, decision maker

#### **11.116** UTILITY OF COAGULATION STUDIES IN PATIENTS WITH SUDDEN EPISTAXIS

*Nabeel, Mohammad Sohail Awan, Ramiz*  
Department of Surgery, Aga Khan University, Karachi

**Objective:** Patients presenting with epistaxis are anxious and fear bleeding to death. We had noticed a high request rate of clotting screens for patients with epistaxis in our department and in the ED regardless of whether they possessed risk factors for bleeding or not, which result in prolonged stay of these patients and putting an extra burden of investigations on them. The medical literature over the past two decades does not favor blanket clotting screening in all epistaxis patients. Our aim was to determine the frequency of deranged coagulation in patients coming to Emergency department of our institute we also determined the group of patients in which coagulation studies are helpful

**Method:** A retrospective designed review of one year, encompassing the patients attending the emergency department with epistaxis. Patients were excluded if they had history of nasal surgery, trauma, nasal mass or had received treatment before. 136 patients were included. Frequencies & percentages were calculated and association of significance was seen with the help of fisher's exact test (p value > 0.05).

**Results:** In our series there was male predominance with male constituting 57% of study population; age was distributed from minimum of year to maximum of 89 years. There were seventeen

patients (12.5%) with deranged coagulation. The association of different variables was seen with that of deranged coagulation and family history, bleeding disorder, refractory epistaxis were highly significant. The management options did not show any significant association in either group.

*Conclusion:* All patients attending emergency department with epistaxis are not the candidate for coagulation work up. • Group of patients in which coagulation studies are helpful would be:  
o Positive family history  
o Known bleeding disorder  
o Refractory epistaxis

*Keywords:* Epistaxis, deranged coagulation, nasal bleed

### 11.118 VACCINATION CARD RETENTION IN KARACHI, PAKISTAN

*Sana Sadiq Sheikh, Syed Asad Ali, Anita Zaidi*  
*Department of Obstetrics & Gynaecology, Aga Khan University, Karachi*

*Background:* Low card retention has been a barrier in accurately estimating the vaccine uptake. Vaccine coverage surveys have to use both parental recall and vaccine card review but parental recall has been questionable to estimate vaccine coverage. Improving vaccine card retention is the key to evaluate correct vaccine coverage rates. Objective: To determine the risk factors of vaccination card retention among care takers of 12-59 months old children in Karachi, Pakistan.

*Method:* It was an analytical cross-sectional study in Karachi. Households were randomly selected through multistage cluster sampling technique. 504 eligible children 12-59 months of age from these households 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 SPSS 19 using logistic regression.

*Results:* Among 462 vaccinated children, caretakers of only 33% 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). Gender of child, parental education and access to electronic media were not significant predictors in our study.

*Conclusion:* Our study showed that vaccine card retention for children 12-59 months of age was low (33%) in Karachi. There is a need to educate caretakers of young children regarding importance of vaccination card keeping 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, Pakistan

### 11.119 VIEWS OF HEALTHCARE PROVIDERS ON MEDICAL ERRORS IN KARACHI, PAKISTAN

*Sarosh Saleem, Madiha Beg*  
*Aga Khan University, Karachi*

*Objective:* Incidence of medical errors is area of concern for health-care providers and policy makers. In an underdeveloped country like Pakistan, patient safety is an important trepidation as it poses great cost burden on healthcare system. Objectives: To estimate the rate of medical errors and assess the factors that may influence medical error reporting in different hospitals of Karachi, Pakistan.

*Method:* Study objectives of this cross-sectional analytical study are, to estimate the rate of medical errors and to assess the factors that influence medical error reporting in Pakistan. Data was collected over period of three months, via self-administered survey questionnaire. 250 participants, including doctors, nurses and paramedics from private and government hospitals of Karachi were selected by non-probability convenience sampling technique to gather information about number of errors witnessed and reported, and factors that influence the error-reporting, after an informed consent.

*Results:* Approximately 90 percent of healthcare professional believe that medical errors are common. More than 50 percent have witnessed medical errors. 80 percent have experienced a medical error and believe that medical errors are not often reported in our country.

*Conclusion:* Though substantial number of the healthcare professional in Karachi have ever witnessed or experienced a medical error, not many medical errors are reported or disclosed. Improving healthcare system for patient safety is need of hour. Both management and healthcare professionals need to improve error-reporting systems in Pakistan

*Keywords:* Medical Error, Quality of care, patient safety

### 11.120 WAITING AND APPOINTMENT TIMES

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*Department of Radiology, Aga Khan University, Karachi*

*Objective:* Waiting time of patients prior to appointment  
*Method:* According to a locally agreed standard 90% of patients should be called into the examination room within 15 minutes of their allocated appointment time. The waiting time for patients within the Department of Radiology and the delays in inpatient and outpatient arrival for appointments was audited over a 4 week period during month of August 2011. These delays have been compared with pre-set targets. The target for waiting times within the department was set at 30 min.. There was a wide range of delays in ward patient arrival times for appointments. The aim of this study was to assess the patient's own reasons for non-attendance and to determine what epidemiological factors are related to nonattendance. All 100 MRI reports were reviewed. Data was collected recorded on preset Performa and was subsequently entered and analyzed using SPSS version 19. --  
*Results:* A total number of 100 MRI reports are reviewed 52%

were male and 48% were female. 25% of showed 15 mts delay and 75% patients showed 30 mts delay. 35 % of patients arrived on time, 33 % patients arrived 10 min before and 32 % patient arrived 20 min before the appointment time. Patient procedure start on time in 61% and was delayed in 39% .

*Conclusion:* Most patients were scanned on time however 39% patients were scanned late due to late coming. Those patient who were not on time have to wait for the procedure and sometime they needed to be rescheduled

*Keywords:* Appointment time, outpatient, inpatient

### 11.121

#### WHAT DRIVES PERFORMANCE OF THE NON-PROFIT SECTOR IN HEALTH SECTOR OF LOW AND MIDDLE INCOME COUNTRIES?

*Shehla Zaidi, Dr. Agha Xaher Gul*

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

*Objective:* There is increasing international interest in Non-Profit Organizations (NPOs) as preferred providers of health services in low and middle income countries (LMIC). Despite international policy hype, there is wide variation in performance and little understanding of what drives NPO performance in health. This paper attempts to analyze the effect of the policy context on NPO performance and how these influences may be reoriented to achieve attributes associated with NGOs.

*Method:* A broad search of both peer reviewed and 'grey' literature was attempted using the search terms of 'NPO performance', 'NPO effectiveness', 'reproductive health' 'women's health' 'women's development' and 'case studies'. Bibliographical citations from selected case studies were also looked up. Effect on NPOs was broadly interpreted in terms of influences on growth, work autonomy and network development amongst NPOs.

*Results:* NPOs in many LMICs are constrained by patronage based power distribution, too little or too restrictive state policies and heavy donor dependency. These directly influence NPO operational space, autonomy, networking and work priorities, and in turn are expected to influence NPO growth and performance in the health sector. Our findings posit a framework combining the three strands of socio-political context, state policies and donor dependency. However investment in NPOs continues to be project driven with little investment in supportive policy legislations, policy dialogue, networking, capacity building and revenue generation support.

*Conclusion:* NPO performance is influenced by wide policy context which needs better recognition. Enhancement of NPO role will need investments in building the policy capital required.

*Keywords:* Health Policy, Non Profit performance, Health NGO

### 11.122

#### A CASE OF ORBITAL APEX SYNDROME IN A PATIENT WITH MALIGNANT OTITIS EXTERNA

*Rashid Baig, Qazi Assad Khan, Mohammad Ali Sadiq, Sohail Awan, Khabir Ahmad*

*Department of Surgery, Aga Khan University, Karachi*

*Case Report:* A rare case of skull base infection with a rapid clinical course leading to visual loss and eventually death in a poorly controlled diabetic patient is presented. A 37-year-old woman presented to our clinic with a history of visual loss and painful protrusion of the right eye for the past 3 days. This was accompanied by vertigo and right-sided facial weakness. The patient had perception of light in her right eye and 20/25 (presenting visual acuity) in the fellow eye, accompanied by right-sided proptosis, total ophthalmoplegia, optic disc pallor and central retinal artery occlusion. Magnetic resonance imaging showed the presence of edema with soft tissue thickening in the right external auditory canal along with evidence of fluid within the middle ear cavity and mastoid air cells on the right side. A diagnosis of orbital apex syndrome was made and treatment initiated.

*Keywords:* Orbital apex syndrome, malignant otitis externa, ophthalmoplegia

### 11.123

#### ADOLESCENT REPRODUCTIVE HEALTH: WE HAVE THE RIGHT TO KNOW

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*Objective:* Globally young people aged between 10 to 24 years are having the biggest share of the population (1.75 billion) since they are no longer children but not yet adults; therefore have specific health and developmental needs. There is a need for each health institutions to provide health services to capture their needs. *Objective:* The intent of this research paper was to assess the current reproductive health care guidelines of a community based organization.

*Method:* For this qualitative research a mix of methodologies was used which included: Secondary data was collected through literature review, desk review of documents including reproductive health guidelines (in light with the Standard reproductive health components available in the International Conferences on Population & Development plan of action (ICPD-PoA) Cairo census 1994), annual/activity reports and information education and communication (IEC) material. Primary data was collected by five face to face interviews, discussion with key informants, observatory visits to the health facilities and by self-participation in reproductive health workshops and activities held in various health facilities. Based on the initial assessment key area as a gap was identified which was further justified by using a qualitative approach and finally recommendations were given

**Results:** The results of the secondary data revealed Adolescent Reproductive Health (ARH) as an area not addressed in the current guidelines. Further supported by the results from the primary data; a categorical analysis of the face to face interviews presented the following key categories; ARH; Comprehensive approach for maintain wellbeing of adolescents, stage of physiological changes, need of timely, ethical information to the adolescents, role of parents & Media, Concept of "KHOSHAAL GHARANA" (Happy family), Premarital/preconception counseling, limited scope of ARH in the community based organization, data base of target population, ARH to be initiated as separate program, Master training of staff, & need of Collaborative initiative.

**Conclusion:** This study based on primary and secondary data concluded that this institution needs to strengthen health services for the provision of health for adolescents. They must be thought of and treated as a diverse division of population with specific developmental needs. Launching programmatic interventions will help to disseminate reliable and timely information to the adolescent, parents, teachers and health care providers. It will help fostering a new generation of productive adults who can help their communities' progress.

**Keywords:** Reproductive health, adolescents health

#### 11.124

##### EXON DUPLICATIONS AND DELETIONS OF DYSTROPHIN GENE IN DUCHENE MUSCULAR DYSTROPHY PATIENTS

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**Background & Objective:** Duchene muscular dystrophy (DMD) is characterized by rapid progressive muscle degeneration, leading to paralysis and death. It is caused by mutations, mainly deletions and duplications, in the dystrophin gene located at Xq21.2. The objective was to study deletions and duplications in blood samples of DMD patients for the confirmation of their disease status.

**Methods:** Overall, 35 blood specimen from male patients were analyzed by a commercially available MLPA kit (MRC-Holland), which can detect deletions and duplications in all 79 exons of the dystrophin gene. Ligation and amplification steps were carried out in the ABI 9700 thermal cycler followed by separation of Cy5 labeled amplified fragments by capillary electrophoresis using Beckman Coulter genetic analysis system.

**Results:** Exon deletions in dystrophin gene were detected in 17 out of 35 (49%) patients. All patients were less than 10 years of age. Their average CPK value was 6878 IU/L (range 2975-12779). The symptoms included muscular weakness, low endurance, and enlargement of calf and deltoid muscles. Exons 12, 17 and 19 were deleted in one patient, whereas exons 22-30 were deleted in one patient, Exons 45-50 were deleted in

seven patients. Exons 51-55 were deleted in three patients. Single exon deletions were observed in five patients.

**Conclusions:** MLPA is a rapid, reliable and cost effective technique for the detection of DNA rearrangements among DMD patients and carriers. However, due to lack of awareness in Pakistan many cases of DMD remained undiagnosed.

**Keywords:** DMD, MLPA, CPK, Dystrophin gene, Exon deletion.

#### 11.125

##### MOLECULAR ANALYSIS OF HUMAN LEUKOCYTE ANTIGEN CLASS I AND II ALLELE FREQUENCIES AND HAPLOTYPE DISTRIBUTION IN PAKISTANI POPULATION

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**Background & Objective:** HLA antigens are cell surface glycoproteins, which plays important role in immune system. HLA typing is important since the degree of HLA compatibility between the donors and recipient influences outcome of graft survival in transplant patients. The objective was to study distribution of HLA class I and class II alleles in Pakistani Population and comparison with the data reported for Africans, Caucasoid, Orientals and Arab populations.

**Methods:** Blood samples were collected in EDTA containing tubes; DNA was extracted from WBCs, and amplified by *Taq* polymerase using sequence specific primers for HLA- A, B, C, DR and DQ alleles. Amplified products were then separated on 2% agarose gel and HLA alleles were interpreted from the banding pattern of the Amplicons as described by Manufacturer. **Results:** The most frequently observed Class I alleles were A\*02, B\*35 and Cw\*07, with frequencies of 19.2, 13.7 and 20% respectively. Fifteen distinct HLA-DRB1 alleles and eight HLA-DQB1 alleles were recognized. The most frequently observed DRB1 alleles which represented more than 60% of the subjects were DRB1 \*03, \*07, \*11 and \* 15. In addition, at DRB1-DQB1 loci there were 179 different haplotypes and 285 unique genotypes, and the most common haplotype was DRB1 \*15-DQB1\*06. A class I haplotype A \*33-B\*58-Cw\*03 reported primarily in the Orientals was also found in the local population. **Conclusions:** Our study showed a close similarity of HLA class I and class II alleles with that of European, Caucasoid and Orientals suggesting an admixture of different races due to migration to and from this region.

**Keywords:** HLA, transplant, graft survival, haplotype, PCR

### 11.126

#### RAPID RESPONSE TEAMS (RRT) IMPACT ON CLINICAL OUTCOMES: *A SYSTEMATIC REVIEW*

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**Background:** Patient safety and patient centered care are the two emerging key principles after the break through report of Institute of Medicine (IOM) linked with quality care and promoting culture of safety and customer satisfaction in a hospital environment. Health professionals are challenged for transforming “no harm” culture in day to day patient care processes and team functioning i.e., the way every team member feels responsibility and recognizes their obligation and therefore these concepts are translated for proper coordination and collaboration. Rapid response systems have initiated to addresses patient safety apprehensions and to expanding instant medical help to bedside clinicians for deteriorating conditions.

**Objectives:** The primary objective is to determine the impact of rapid response teams on code calls and mortality rates in an inpatient adult setting.

**Search Strategy:** The review was carried in electronic databases, general search engines like Google and Google scholar , relevant websites, hand searching, and reference list of articles, Database of Abstracts of Reviews of Effects (DARE) from Cochrane library 2012 issue 2 was searched for the related reviews, Cochrane Central Register of Controlled Trials (CENTRAL) part of Cochrane library 2012 issue 3, CINHALL, EBSCO (2000 to 2012), EMBASE Ovid, (2000 to 2012).

**Selection Criteria:** Randomized controlled trials (RCTs), other controlled clinical trials (CCTs), before and after studies which measured cardiac arrest and mortality rates following implementation of Rapid Response Systems (RRT) and Medical emergency teams (MET) in an adult patients of an inpatient setting using recognition approach with early warning signs, activation of team and monitoring of its effect on patients outcomes were included in the review.

**Data Collection:** Data collection was performed by a single researcher and all eligible studies were evaluated for quality. Studies that met the inclusion criteria were further assessed for quality through Quality Assessment Tool for Quantitative Studies (2008) by National collaborating Centre Methods and Tools by Effective public health practice project (EPHPP)

**Results:** The search from all electronic databases resulted in n=13 relevant researches to be included in the review. Among n=13 studies n=6 found to be weak, n=4 were moderate and n=3 were strong studies. Studies represented were from developed countries and none of the studies reported from developing countries; n=6 studies reported reduction in cardiac arrest and n=5 reported RRT effect on mortality rate. This review presents weak to moderate evidence to recommend the effect of RRT on reducing code rates and mortality.

**Keywords:** RRT, clinical outcomes, systematic review, code rates

**12.1****A NUTRITION EDUCATION INTERVENTION TO COMBAT UNDERNUTRITION: EXPERIENCE FROM A DEVELOPING COUNTRY**

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**Objective:** Undernutrition is a major public health concern in Pakistan and is of greatest consequence in young children. Undernutrition is common among all sections of the Pakistani population, but is of greatest consequence in young children. This study reports the results of a nutrition education intervention strategy.

**Method:** Study participants were from two sites of Pakistan (Tandojam and Quetta). The intervention strategy focused on nutrition education based on individual counseling sessions targeting the primary caregivers of undernourished children. Direct counseling sessions were also conducted with undernourished children 5 years and older. The primary outcome was decrease in severity of wasting as well as changes in feeding practices of the care givers. The 24 hour dietary recall was used for nutritional assessment. The ECDWs received structured training to assess dietary patterns through 24 HDR and to provide nutrition counseling based on the dietary assessment. Where needed dietary advice was further modified according to individual family circumstances.

**Results:** In Tandojam the prevalence of mildly wasted dropped from 81% to 60%. In Quetta, the impact was stronger with the number of mildly wasted reducing from 82% to 49%. At both sites there was a significant increase in the number of meals per day taken by the children.

**Conclusion:** The intervention was successful in reducing malnutrition at both field sites. Nearly 36% children in Tandojam and 32% children at Quetta progressed to a normal nutritional status. Results suggest that poor households within their given resources without food provision can improve growth if focused nutrition education is provided to them.

**Keywords:** community-based intervention, nutrition education, 24 hours dietary recall

**12.2****A SURVEY TO ASSESS THE FEMALE SEXUAL HARASSMENT IN THE HIGHER EDUCATIONAL INSTITUTES OF KARACHI, PAKISTAN**

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**Background:** Sexual harassment is a serious social and psychological issue and the women from every walk of life are affected by it. The victim may feel threatened, humiliated, harassed and insecure. The cases are not reported by victims because of various reasons. This is the least spoken issue in

Pakistani society. **Objectives:** To determine the nature and frequency of the exposure of female students to sexual harassment at higher educational institutes; and explore the adverse effects on the victims and coping strategies implied by them. **Method:** Subjects and 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, 2009.

**Results:** A total of 460 (96%) students returned the filled questionnaires. Among them, 65% reported sexual harassment of various degrees/levels. They were harassed by the fellow students (37%), faculty (32%), the staff (2%) and strangers (64%) who included patients, attendants, visitors and passersby. The victims reported feelings of powerlessness, humiliation, disbelief, shock, anger, fear, anxiety and depression, badly affected studies/academic activities, and transient suicidal tendencies. Though 98% wanted a punishment for the harassers, yet 78% were reluctant to disclose perpetrators. **Conclusion:** Sexual harassment seems prevalent in various forms at higher level educational institutes. Many cases go unreported. The victims were reluctant to talk against their agony because of the fear of humiliation for themselves and their families. There is a need to sensitize the society to tackle this issue seriously.

**Keywords:** Females, Sexual Harassment, Higher Educational Institutes

**12.4****ADOLESCENTS' SMOKING PRACTICES AND NICOTINE DEPENDENCE: RESULTS FROM A COMMUNITY-BASED STUDY IN PAKISTAN**

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**Objective:** To find out the smoking prevalence and associated factors among in school and out of school adolescents aged 12-18 years and their nicotine dependence in two rural districts of Pakistan.

**Method:** A cross-sectional study was conducted from April - June 2008 with a total of 1014 adolescents aged 12-18 years residing in two rural districts of Sindh and Punjab. 8 trained interviewers collected information from adolescents regarding age, ethnicity, religion, occupation and education of parents, smoking behavior, smoking history of family/friend, type of family system, number of siblings and place of residence. Statistical package Epi-Info version 6 was used to enter the data and analysis was performed by using SPSS version 12. **Results:** The mean age for was 14.7 + 1.9 and 14.6 + 1.8 for girls and boys respectively. The prevalence of smoking among girls was 7.9 % and among boys was 20.2%. The smoking prevalence was 15.2% with 121 boys and 33 girls reported to be current smokers. Of these, 50% were moderately nicotine dependent. The prevalence among in school adolescents was 14.6% compared to out of school adolescents 16.1%.



**Conclusion:** Although there was a significant difference found between the prevalence of smoking among adolescent males and females but we failed to establish any difference among in school and out of school adolescents smoking prevalence in two rural districts of Sindh and Punjab.

**Keywords:** Adolescent, smoking and nicotine dependence, in-school and out-school

## 12.5 AMOUNT OF FAT IN WHEATABLE AND DIGESTIVE BISCUITS

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**Background:** During clinical, it was observed that Doctors and Dietitians recommended Wheatable and Digestive biscuits to Diabetic, Oncological, Obese, Myocardial and Hypertensive patients. The purpose is to supply the most concentrated fuel for the body, to help the body absorb important vitamins, to insulate the body and to cushion organs. Medical students and ordinary people prefer Wheatable biscuits over Digestive biscuits. Fats are the substance found in nuts, meats, oils, eggs, chocolate, margarine, olives, biscuits, dairy foods and so on. Based on this information a mini research project was conducted in our biochemistry lab in which we compared which of these two biscuits contained more amount of fat.

**Method:** A standard method was used in which a quantitative measurement of invisible fat was done. Change of visual observation of fat was also noted in both the biscuits.  
**Results:** The data were collected at a large scale for each type of biscuit. It was observed that the wheatable biscuits contained 9.83% of fat whereas Digestive biscuits contained 8.78% of fat. The experimental readings were near to the nutritional facts of both the biscuits.

**Conclusion:** Both the biscuits have negligible difference and are advisable to be given to all.

**Keywords:** Invisible Fat, Physiological disorders, Public Health

## 12.6 ASSOCIATION BETWEEN BREAST FEEDING AND CHILDHOOD OBESITY IN SCHOOL GOING CHILDREN (5-16 YEARS OF AGE) IN KARACHI, PAKISTAN.

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**Objective:** This study aimed to investigate the association between breast feeding and childhood obesity in school going children (5-16 years of age) in Karachi, Pakistan.

**Method:** A matched-case control study was conducted during April 2012 to July 2012. In this study, 528 school going children, aged 5-14 years of age (132 cases and 396 controls) matched

on age and gender, were recruited from public and private schools. Data was collected on socio-demographic profile, and lifestyle domains (dietary patterns, physical activity, sedentarism, and breast feeding) from children and their mothers at the schools. Anthropometric measurements were done using standardized procedures and BMI was calculated. Analysis was done using the Statistical Package for Social Sciences (SPSS version 19.0), and Statistical Analysis System (SAS version 9.2).

**Results:** Conditional logistic regression results showed that having a history of not being exclusively breast fed [mORadj= 5.5; 95% CI (2.3-12.9)], exclusively breast fed for less than 3 months [mORadj= 4, 95% CI (2.0-7.8)], and exclusively breast fed for 4-5 months in school going children was [mORadj= 2.6; 95% CI (1.5-4.7)] associated with a higher obesity risk. However, in this study being moderately active [mORadj=0.5; 95% CI (0.3-0.8)], as well as lower extent of participation [mORadj=0.3; 95% CI (0.15-0.7)] in moderate to vigorous physical activity was protective against childhood obesity.

**Conclusion:** Longer duration of exclusive breast feeding have a protective effect against childhood obesity in a dose-response manner. In Pakistan, future longitudinal studies are urged to confirm this association because of its implications for public health. Further studies are also needed to better understand the independent link between physical activity and sedentarism in children.

**Keywords:** breast feeding, obesity, children

## 12.7 AWARENESS OF NOISE INDUCED HEARING LOSS AMONG AUDIO DEVICE USERS

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**Objective:** Introduction: Nowadays more and more audio devices (AD) are being introduced for personal use for listening to music such as iPods, mp3 players with headsets. These devices are more commonly being used by the younger age group between the ages of 14-30 years. This daily exposure to high levels of noise is leading to Noise Induced Hearing Loss (NIHL) at a younger age as compared to the fore fathers of these teenagers and young adults. Increasing NIHL among young age group will have a major economic impact on the community as these teenagers and young adults may require hearing aids at a younger age as compared to their fore fathers. In Pakistan it has an even more economic impact on the families of such young people with hearing loss. No such study has been done in Pakistan for the documentation of this major problem uptill now. **Objective:** To assess the awareness among young users of personal Headset users about NIHL caused by these devices. Document the listening habits of youth

**Method:** Materials & Methods: A cross sectional survey was conducted on 400 university going students on a Performa developed for taking the required data. The data was analyzed on Spss 16.

**Results:**Result: The majority of earphone users are young adults between the ages of 19-22 of respondents who are experiencing hearing impairment and 29% difficulty understanding speech despite their young ages. Though 80% of respondents knew about NIHL but very few were actually using earplugs for noise protection.

**Conclusion:**Most adolescents and young adults are willing to change their practices if proper guidance is given to them about NIHL and how to take preventative measures against it.

**Keywords:** hearing loss,, music, stereo headset users

### 12.10

#### DESI EGG CONTAINS MORE PROTEIN THAN FARM EGG

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**Background:** It has been observed through our survey that 90% of the people think that brown egg is more nutritious than white egg. We studied the literature which says one large egg contains 92% of protein therefore incredible amount of nutrition which supports immune system because it provides all essential amino acids which our body cannot synthesis itself. These observations have forced us to study that desi eggs really do contain more protein or not.

**Method:** A standardized spectrophotometric method was used to conduct the project. The observations were made at a wavelength of 540 nm and the transmittance was noted. Same procedures were performed with both the eggs.

**Results:** The mean % transmittance of sample containing Desi egg was 71.12% while % transmittance of farm egg was 83.37%. More transmittance was found in farm egg therefore less absorbance and less protein content is present while less transmittance was found in desi egg hence, more absorption and more protein content was present.

**Conclusion:** Thus it was proved that desi egg contains more protein than farm egg.

**Keywords:** Desi egg, Protein

### 12.11

#### DEVELOPMENT & EVALUATION OF TEACHERS' TRAINING MANUAL ON MENTAL HEALTH IN PAKISTAN

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**Objective:**A teacher training manual was prepared with intent to raise awareness of school teachers regarding mental health issues in Peshawar, Pakistan. The main aim of the manual was to train teachers of a selected school in the early identification of high risk students, effective communication of the issue to students, their parents/guardians and to provide guidance on where to get treatment. This study evaluates the impact of the training workshop on the teachers' knowledge of mental health issues of school age children.

**Method:** One school with separate girls' and boys' section was selected; both the sections of the school shared characteristics such as school size and student to teacher ratio. 40 teachers (20 from each of the boys and girls section) were given a 12-item questionnaire before and after the training workshop. **Results:**Before the teacher training workshop mental health awareness of the school teachers was low with a pretest mean of 5.2. After the teacher training workshop the mean score increased to 7.2 ( $P < 0.001$ ).

**Conclusion:**This school based mental health training program was successful in improving the awareness of school teachers regarding mental health issues of school age children. There is a need to assess the long term effectiveness of this program in order to evaluate its substantial impact on awareness of school teachers.

**Keywords:** Evaluation, Teachers' Training, Mental Health

### 12.14

#### DISSEMINATING CHILDHOOD HOME INJURY RISK REDUCTION INFORMATION IN PAKISTAN: RESULTS FROM A COMMUNITY-BASED PILOT STUDY

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**Objective:**Most childhood unintentional injuries occur in the home; however, very little home injury prevention information is tailored to developing countries. We developed educational materials and a home hazard risk assessment tool tailored to a low-income neighborhood in Pakistan, and pilot tested their effectiveness.

**Method:** Two low-income neighborhoods were mapped identifying families with a child between 12 and 59 months. All enrolled households underwent a home hazard assessment at the time of being given hazard reduction education using a tutorial or a pamphlet. A follow up assessment was conducted 3-4 months later.

**Results:**503 households were enrolled; 256 received a tutorial and 247 a pamphlet. The two groups differed significantly ( $p < 0.05$ ) in level of maternal education and relationship of child's primary caregiver. However, when controlling for these variables, those receiving an in-home tutorial had a higher odds of hazard reduction than the pamphlet group of 2.14 (95% CI: 1.28, 3.58) for uncovered vats of water, 3.55 (95% CI: 1.80, 7.00) for an open fire within reach of the child, and 1.86 (95% CI: 1.07, 3.25) for inappropriately labeled cooking fuel containers. **Conclusion:**This pilot project demonstrates the potential utility of using home-visit tutorials to decrease home hazards in a low-income neighborhood in Pakistan. A longer-term randomized study is needed to assess actual effectiveness of the use of community health workers for home-based injury education and whether this results in decreased home injuries.

**Keywords:** Injury, Home, Risk Assessment Tool

### 12.15 ECONOMIC BURDEN OF MENTAL HEALTH IN PAKISTAN DURING 2005-06

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Karachi*

*Objective:* Mental illnesses in Pakistan are on the rise. Decade long terrorism, suicide bombings, natural catastrophes, political uncertainty rising prices and economic downturn are some of the key factors contributing to increasing burden of mental illnesses in the country. This study emphasizes the importance of economic consequences of mental illness. It provides an estimate on cost on mental health in Pakistan.

*Method:* Aga Khan University hospital, Psychiatry department data set on inpatients (N=727) and outpatients (N=1458) for the year 2005-06 is classified into ICD-10. Costs are estimated drawing a stratified random sample for both inpatients and outpatients. Direct costs include consultation fee, diagnostics, bed charges, laboratory charges and medication. Indirect costs comprises travel expenses, caregiver time and productivity losses  
*Results:* Initial findings identify Schizophrenia (N=227) and mood/depressive disorders (N=415) as major contributors to the burden of mental health in inpatient and outpatient care (82% and 75% respectively). Mean cost for all categories in inpatient care is Pak Rupees: 21701 per treatment episode in a year. Anorexia is the most costly (Mean=Rs.71687) while dementia and other organic disorders are relatively less expensive to treat (Mean=Pak Rs.1183). These estimates are significantly higher than the estimated per capita out-of-pocket health expenditure in 2004-05 (Pak.Rs.597).

*Conclusion:* Initial findings show that once the complete costs envelop is extrapolated to the whole population, the economic burden of mental health will be alarmingly high. Majority of the population, especially transitory and chronic poor cannot afford the cost of treatment of their mental illness. As such further research is required to identify cost effective strategies to treat mental illness in either in community setting and or tertiary care hospitals in Pakistan.

*Keywords:* Mental health, cost of illness, health economics and Policy

### 12.16 EFFECTIVENESS OF PUBLIC PRIVATE MIX TUBERCULOSIS DOTS PROGRAM IN AN URBAN AREA IN PAKISTAN: NEED OF CONTEXT SPECIFIC APPROACH

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*Objective:* One of the key strategies of STOP TB is to involve all health care providers via public private mix (PPM) context specific approach. Pakistan implemented 100% coverage for TBDOTS in public sector health facilities in 2005 however, population coverage remains dismal. A public private mix DOTS project was implemented in Karachi the largest city of Pakistan

to enhance coverage and improves collaboration between the public and private sectors, with an objective to increase case detection and to improve TB case management. This paper shares the effectiveness in terms of treatment outcome of the patients registered for the public private mix TB DOTS program in a large urban area.

*Method:* General practitioners (GPs) were trained to provide DOTS services in six of the 18 towns in Karachi, Pakistan. Collaboration of private laboratory network was established for provision of sputum acid fast bacilli (AFB) microscopy in these towns. Provincial public sector reference laboratory provided the training to the staff of private labs. Patients were diagnosed and treated as per national guidelines for tuberculosis management and outcomes were reported to national tuberculosis control program. Patients enrolled for treatment were followed till reaching treatment completion, reported after a year, by the GPs with the help of project staff. Project staff made regular follow-up visits to GPs to record the progress of the project. All services were provided free of cost.

*Results:* A total of 94 GPs were trained in 6 selected towns of Karachi city. 57.4% of trained GPs remained actively involved in the project. Overall treatment success rate of the patients enrolled with the project was 86.3% with 8.7% default patients. Variable level of interest and engagement was demonstrated by GPs across different towns of project area. The treatment outcome of patients enrolled across different towns of the city ranged between 26% and 92%.

*Conclusion:* This study provides an effectiveness of PPMDOTS program in terms of treatment outcome in a large urban city. Experience suggests that a more stringent selection criteria need to be followed for inclusion of GPs in the program to decrease the cost and improve the success of the program. A multifaceted context specific approach is needed while working with private health care providers.

*Keywords:* Public private mix, TB-DOTS, Pakistan

### 12.17 EMERGING CHALLENGE OF NON-COMMUNICABLE DISEASES IN PAKISTAN; A REVIEW OF HEALTH CARE FINANCING POLICES AND HEALTH SYSTEM.

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*Objective:* The burden of non-communicable diseases has over numbered the communicable diseases since last two decades. Non-communicable diseases are posing threat to the economy of country not only in terms of premature deaths but also due to their chronic nature and associated economic and social consequences. The focus of health system and policy in Pakistan is however inclined towards communicable disease and maternal & child health. This research reviews health financing and health resources in the backdrop of the emerging challenge of NCD in the country

*Method:* A thorough literature search on PubMed and Google Scholar was done. Official record, reports and other material pertaining to healthcare financing polices and reforms of key government and non-government agencies in health sector in

Pakistan was reviewed through archival analysis and snow bowling techniques. This was followed by interview of key informant in health sector.

*Results:* Several health system issues emerged through the review of the healthcare financing trends and health system capacity in managing NCD. These included lack of political commitment, services focus on communicable disease and MNCH, inadequate human resources, lack of inter-sectoral approach, insufficient funding opportunities and fragmented health system. *Conclusion:* Enhanced and sustainable financing for health care systems is essential to meet the challenge of NCDs. Cost effective community based intervention focusing life style modification through health education and effective prevention of NCDs and their timely management can reduce the burden of NCD in then country. Insectoral approach is required to build national health system which can respond to the full range of population's health needs in Pakistan from policy reforms that can encourage relevance, and efficiency in health-care financing to instruments and structures for health governance; recruitment, training, and deployment of health workers; health-information systems; supply management; and delivery of health services.

*Keywords:* Non Communicable Disease, Healthcare financing, Pakistan.

### 12.19

#### EXPLORING BARRIERS AND FINANCIAL FACTORS FOR MATERNAL AND NEWBORN HEALTH SERVICE UTILIZATION: A COMPARISON BETWEEN AREAS SERVED BY CONTRACTED AND NON-CONTRACTED RURAL HEALTH CENTRES IN THE SELECTED DISTRICTS OF PAKISTAN

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*Objective:* Influence of contracting on financial factors for MNH service utilization is understudied. Aim of this study was to explore barriers, financial factors and underlying dynamics influencing MNH service utilization by mothers in remote rural areas, and improvements if any with contracting RHCs. *Method:* A qualitative exploratory study design was used and 36 Focus Group Discussions as secondary data were analysed. FGDs were conducted purposively with pregnant/ recently delivered women and husbands in catchment areas of contracted and non-contracted RHCs in district Thatta and Chitral, as part of a parent study assessing comparative effectiveness of contracted RHCs Vs. non-contracted RHCs. NVivo version 10.0 was used for data analysis using inductive approach. Themes and sub-themes were developed after summarizing data and coding. *Results:* This study showed although contracting RHCs reduced healthcare supply side constraints but other barriers remained unaffected. Financial constraints became more salient in areas served by contracted RHCs. Willingness to pay was highest for emergency and least for preventive healthcare services in both contracted and non-contracted. Coping was similar in both areas and included mainly efforts to manage money at household level, institutional level, societal level and compromising healthcare in case of inability to manage funds. Women's

economic autonomy and role in decision making was least in both areas of contracted and non-contracted RHCs, and husbands appeared as main authority figures in households. *Conclusion:* This study concluded that contracting RHCs alone is not enough and need accompanied measures such as financial safety nets, demand side incentives and programs focusing empowerment of rural women.

*Keywords:* Contracting, financial barriers, maternal/newborn health

### 12.20

#### FAMILY DYNAMICS AND MENTAL HEALTH

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*Objective:* Man is a social animal. He spends his life in a circle of various relationships. Family holds a significant position in this regard. Since birth, family proves to be a vital support to one. If this support is subtracted or affected by poor relationship, one finds it difficult to cope. Poor family relations, whether it be with parents, intimate partner or siblings, exerts negative impact on person's mental health. Therefore, importance of family dynamics cannot be overlooked.

*Method:* A thorough literature search of various journals helped in identifying certain causes of poor family dynamics and its impact upon mental health.

*Results:* This abstract aims to highlight some of these such as child-parent interaction, authoritarian parenting style, family's social interaction with other and parent's mental health themselves. Therefore, the importance of family dynamics in the promotion of mental health cannot be denied. In order to help families maintain a healthy relationship, it is necessary to cater the needs of all family members and create grounds for mutual co-operation and consensus.

*Conclusion:* Parents play a key role in the promotion of family dynamics. Proper parenting style and provision flourishes a positive relationship between the parents and children. Hence interventions for the family are planned together to benefit family member and education be provided to parents at an early level.

*Keywords:* Family dynamics, parenting, mental health

### 12.21

#### FEMALE ROAD USERS IN SOUTH ASIA ARE MOST AT RISK OF INJURY AS PILLION PASSENGERS DUE TO CLOTHING-RELATED MOTORCYCLE CRASHES

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*Objective:* Reports of road crashes and injury due to entanglement of clothes in motorcycles have been increasingly appearing in the literature from India and Pakistan but no epidemiological

studies are available for such injuries. Objective: To assess the injury burden and severity of clothing-related motorcycle crashes in Pakistan

*Method:* Data was recruited from ongoing traffic injury surveillance in Karachi, Pakistan. Cases were defined as riders and pillion passengers of motorcycles involved in a crash as a result of entanglement of clothing in moving parts of the vehicle. For each case, Abbreviated Injury Scale (AIS) of involved body parts was recorded and used in computation of New Injury Severity Score (NISS).

*Results:* In the study 99,155 victims of road traffic injury were recorded by the surveillance system from January 2007 to December 2009, with 11,146 females (11.2 %). Of these, a total of 986 injuries were reported as clothing-related and most involved were females (73.9%) and pillion riders (80.6%). These crashes were mostly single vehicle (98.5%) and involved head (41.5%), face (35.9%), limbs (51.0%), and external body i.e. skin (60.3%). As per NISS, one-third of injuries were moderate (26.7%) to severe (10.2%). A total of 10 deaths were reported. Female gender (11.4%), age = 45 years (19.4%), pillion riders (11.3%) and crashes occurring at intersections (12.3%) were more likely to result in severe NISS than other users ( $P < 0.001$ ).

*Conclusion:* Injuries due to entanglement of loose fitting clothing in motorcycles are common in Karachi, mostly affecting female pillion passengers.

*Keywords:* Pillion passengers, female, scarf/dupatta

## 12.22

### FSWS TYPOLOGY AND CONDOMS USE AMONG HIV HIGH RISK GROUPS IN

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*Objective:* We aimed to determine the association of FSWs typology with condom use among HIV high risk groups in Sindh, Pakistan

*Method:* Data was extracted from Second Generation Surveillance, Integrated behavioral and biological survey, Round IV for HIV infection conducted by Agriteam Canada in partnership with National AIDS Control Program, Pakistan in 2011. It was a cross sectional survey for high risk groups including FSWs from Pakistan. It was ethically approved by Review Board of the Public Health Agency of Canada and HOPE International's Ethical Review Board, Pakistan. From Sindh province, FSWs based in Karachi, Sukkur and Larkana were recruited. Considering typology, they were categorized as mobile or facility based. After informed consent, socio-demographic and risk behavior were inquired. HIV was tested by ELISA/EIA and confirmed by Western Blot. Data was analyzed on SPSS 19. Continuous variables were expressed as mean±SD while categorical as frequency(%). Logistic regression assessed the association of FSWs typology with condoms use among HIV high risk groups

*Results:* Out of 4567 high risk population, 1127 were identified as FSWs. Mean age was 26.9 years. Most of them were facility based (72.8%) and 81.3% used condoms. Typology, age, education, duration of involvement, number of client per day, number of paid oral sex per month, knowledge about STI

and knowledge about drop in center were significantly associated with condom use among HIV high risk groups.

*Conclusion:* Majority of facility based FSWs use condoms to prevent HIV infection. Awareness and access to home based FSWs should be increased.

*Keywords:* FSW, Condom, Pakistan

## 12.23

### HEALTH CARE PERSONNEL AND WORKPLACE VIOLENCE IN THE EMERGENCY DEPARTMENTS OF A VOLATILE METROPOLIS: RESULTS FROM A MULTICENTER STUDY IN KARACHI, PAKISTAN

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*Objective:* Workplace Violence (WPV), verbal abuse and actual or threatened physical violence, is an important challenge faced by physicians and nurses in the Emergency Departments (EDs) the world over. WPV is expected to be a particular problem in a large volatile metropolis like Karachi, Pakistan but it has remained understudied. The aim of this study was to determine the prevalence and nature of WPV reported by physicians and nurses working in the EDs of four large tertiary care hospitals in Karachi and to understand the mental health impact of experiencing WPV.

*Method:* This cross-sectional survey was conducted at the EDs of four of the largest private- and public-sector hospitals in Karachi. The survey was conducted between September and November 2008 using an adapted ILO/ICN/WHO/PSI questionnaire. Overall 266 (96%) questionnaires were complete and included in this study.

*Results:* A total of 44 (16.5%) physicians and nurses said they had been physically attacked while 193 (72.5%) said that they had experienced verbal abuse in the last 12 months. Respondents less than 30 years old, singles, physicians, those working in LNH and CHK or with a work experience less than 5 years in the health sector, and those working the night shift or with a temporary employment status were less likely to have reported both being physically attacked as well as experiencing verbal abuse. Among those who reported being physically attacked, 29.6% reported that the last time they were physically attacked involved "physical violence with a weapon", and in 64% of cases the attacker was a relative of a patient or someone accompanying the patient followed by the patient him/herself (20.4%). 86% thought that the last attack could have been prevented, 48% reported that no action was taken to investigate the causes of the incident, and 64% said that no action was taken against the attacker. Among those who experienced verbal abuse physicians were significantly more bothered by the feeling that everything is an effort compared to nurses. After adjusting for covariates, physicians were less likely (OR: 0.42) to report physical attack than the nurses, and compared to those working in AKUH, those working in CHK were only a third as likely (OR: 0.33) and those working in JPMC were twice as likely (OR: 2.05) to report being physically attacked. Compared to those working in AKUH, those working in CHK were less likely (OR: 0.49) and those working in JPMC were more likely (OR:

1.74) to report being verbally abused. Compared to those with a work experience of less than 1 year, those with a work experience between 1-5 years (OR: 5.47) and more than 5 years (OR: 16.5) were more likely to report being verbally abused. *Conclusion:* WPV is an important challenge in the EDs of large hospitals in Karachi. A majority of respondents feel that WPV is preventable but only a minority of attackers face consequences. It is possible that being a full time employee, having more age or work experience, and working in a private hospital empowers individuals to report physical or verbal WPV but further research is needed in this area. VPW is clearly associated with mental health effects. Having clear and well publicized reporting procedures for reporting WPV and an institutional commitment to prevent and prosecute WPV are important steps in dealing with this problem.

*Keywords:* Workplace violence, emergency department, mental Health

#### 12.24

##### HELMET FOR ALL. PERCEPTIONS OF HELMET USE IN PILLION RIDERS, WOMEN AND CHILDREN- A QUALITATIVE STUDY FROM PAKISTAN

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*Objective:* In spite of being a significant life-saving device, helmet usage remains remarkably low. The objective of this study is to gauge perceptions and barriers to helmet usage among male motorcycle riders and to assess their opinions on pillion rider, women and children helmet use.

*Method:* Data was collected from four focus group discussions (FGDs) held with male volunteers working at the Aga Khan University (AKU), using motor-cycles as their primary mode of transportation. Interviews were transcribed verbatim and imported into NVivo2. Written informed consent was taken from each participant before the beginning of each discussion. *Results:* Major themes included 1) Main reason for not using a helmet by the rider was discomfort. 2) Main reasons for pillion rider not using a helmet were a) lack of space, as helmets collided if breaks were applied suddenly and b) security issues, as participants mentioned they were considered a security threat by the police when both the rider and pillion passenger were wearing helmets. 3) Most of them were shocked and mocked the idea of women wearing helmets. They believed women already wore dupattas and abayas and thus helmets would only attract unwanted attention. 4) Unavailability of appropriate sized helmets was voiced as the main issue with usage among children. 5) All the participants emphasized on strict implementation of law and a need to spread awareness about helmet use. *Conclusion:* Although helmet was considered important in motor-cycle rider; participants were not receptive to the idea of helmet use in pillion passenger, women and children.

*Keywords:* Focus group discussions, pillion rider, helmet

#### 12.25

##### HYDATID CYST: CAN HISTOLOGY PREDICT RECURRENCE?

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*Objective:* Hydatid cyst disease is a familiar condition with a long history from the time of Hippocrates, and was first described in the 17th century by Thebesius. Humans acquire the parasite through fecal-oral contact. Pakistan is one of endemic regions. Most frequently the cysts arise in the liver and lungs; however, any other organ may also be involved, which may make both diagnosis and treatment more complex. *Objectives:* To determine the clinicopathological characteristics of hydatid disease and correlation of recurrence with histological presence of scoleces and calcification. appear blue on your screen, but it does print lavender.

*Method:* All cases of hydatid disease cases diagnosed during 2002 to 2012 at Section of Histopathology, Department of Pathology & Microbiology, Aga Khan University were included. *Results:* Total 242 cases of hydatid disease were studied. Mean age + SD was 33.5 + 15.86 years. Average size of lesion was 8 cms. Male: female ratio was 1:1.31. The most common site was liver (38%), 7 cases of liver hydatid cyst were also involving other organs (lung, spleen and kidney). 33 cases involved lung, other sites included rare sites such as brain and spinal cord, abdomen, spleen, breast, ovary, uterus, kidney, muscle and soft tissue, orbit, pericardium and urinary bladder. Histologically scoleces were present in 111 cases (45.9%) (Figure:1) and calcification was absent in 218 (90%) cases (Figure:2). 9 cases showed calcification along with scoleces. (Figure 3) Follow-up was available in 160 cases and recurrence was seen in most of cases with histologically positive scoleces, which also reached statistical significance.

*Conclusion:* Hydatid disease is common and involves a variety of sites. Recurrence is associated with the scoleces present in histological sections. Long-term aggressive treatment along with reasonable duration follow-up is suggested in these cases.

*Keywords:* Hydatid disease, scoleces, recurrence

#### 12.26

##### IDENTIFICATION OF LEADERSHIP STYLES OF HEALTH MANAGERS IN PUBLIC AND PRIVATE HOSPITALS OF KARACHI

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*Objective:* Healthcare providers in healthcare industries, particularly hospitals have been operating in a shifting landscape since a long time. Advances in technology and new standards of care, new business models, a growing population and changing

demographics have propelled ongoing change in the healthcare sector. Regulation, access to care, cost pressures, conflicts, legal and ethical considerations add to the complexity, as do healthcare reforms. Understanding of leadership styles plays a pivotal role for the health care organizations. The objectives of this study were to identify leadership style prevalent in healthcare managers of public and private hospitals of Karachi.

**Method:** The study was designed as a cross sectional survey of healthcare managers of public and private hospitals of Karachi. A self-administered rated questionnaire was developed and processed for the study based on Black and Mount managerial grid from 200 health managers. Consent was obtained before administering the questionnaire and assurance of confidentiality of responses was given to each respondent.

**Results:** The mean scores of concern for people (6.9) and concern for tasks (5.6) reflects the characteristics of a "team leadership style" indicating high concern for people and high concerns for tasks. It was also noted that level of education and type of organization was associated with leadership style and the seniority also played a role in deciding the leadership style of the respondents.

**Conclusion:** This study identified the leadership style prevalent in public and private hospitals of Karachi, Pakistan. Nevertheless, the examination of relationship between different individual characteristics and leadership styles could be valuable for improving relations and productivity in hospitals. There are practical implications for understanding how individuals, depending on their demographic and work characteristics, exhibit leading styles and handle conflicts.

**Keywords:** Health manager, leadership, leadership style

### 12.27

IMMUNOGENICITY OF COMBINED BIVALENT OPV AND IPV VACCINES AT 9 - 12 MONTHS OF AGE COMPARED TO BOPV ALONE IN MALNOURISHED AND NON-MALNOURISHED PAKISTANI INFANTS.

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**Objective:** Pakistan is the final frontier for a polio-free world, accounting for more than half of polio virus cases among endemic countries. There is limited evidence to show if OPV and IPV given together results in a sufficient antigenic load to induce enhanced immunogenicity (intestinal and serological) in moderate to severe chronically malnourished children. We aim to evaluate whether an IPV dose administered together with OPV results in higher immunogenicity compared to OPV alone in chronically malnourished children. Further, this study will compare the effect of administering IPV in chronically malnourished children compared to non-malnourished children 9 - 12 months of age.

**Method:** This would be community based open label interventional randomized trial with parallel assignment of an intervention and reference arm in chronically malnourished infants and non-malnourished infants. Infants aged 9 -12 month of either gender living in five peri-urban slums (Bilal colony, Bhains colony, Ali Akbar Shah, Rehri Goth and Ibrahim Haideri of Karachi. Infants enrolled in any polio trial or found acutely

malnourished (WHZ score) will be excluded. Outcomes will be serological immunity assessed by seroconversion and geometric mean titers of P1, P2 and P3 at first encounter and one month after the intervention, while the mucosal immunity assessed by virus excretion of P1, P2 and P3 after one week of bOPV challenge dose.

**Results:** The study started from 15th October 2012 and till date we had forty infants enrolled in the study.

**Conclusion:** If the combination of IPV with OPV enhances seroconversion and mucosal immunity these findings could lead to use of IPV in routine EPI – Pakistan in district with high malnutrition rates

**Keywords:** IPV, Chronic malnourished, Serological and mucosal immunity

### 12.29

IMPLEMENTATION OF INTEGRATED MANAGEMENT OF NEONATAL AND CHILDHOOD ILLNESS (IMNCI) STRATEGY: RESULTS FROM A MIX METHOD DESIGN IN A RURAL DISTRICT OF SINDH, PAKISTAN

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**Objective:** IMNCI is a Primary Health Care (PHC) strategy which targets five major childhood killers: pneumonia, diarrhea, measles, malaria and malnutrition to reduce under-five morbidity and mortality in developing countries. Evidence indicates that IMNCI improves pediatric health outcomes. In Pakistan, the intervention has not been scaled up nationally, despite constant occurrence of under-five deaths from preventable causes; which are the targets of the strategy. The objective of this study was to determine factors influencing IMNCI implementation in public sector primary health care facilities in a district of Sindh, Pakistan.

**Method:** An exploratory study with mix method concurrent design was conducted during July-September 2009 in district Matiari. Qualitative part included, in-depth interviews with stakeholders at provincial (n=4) and district (n=4) levels and with IMNCI trained PHC physicians (n=8) at PHC facility level. Purposive sampling was done to select stakeholders. Quantitative part involved, facility survey to assess availability of required logistics (medicines, supplies, related tools etc.) for IMNCI strategy in all PHC facilities (n=16) using WHO health facility assessment checklist. The study was approved by Ethical Review Committee of Aga Khan University & Hospital Karachi, Pakistan

**Results:** Major factors supporting IMNCI implementation were knowledge about IMNCI and belief in the strategy to improve child health. Lack of implementation policy, ambiguity in responsibilities among stakeholders, lack of supervisory mechanisms and inadequate availability of supplies, and medicines were the major constraints. Facility survey further substantiated inadequate availability of supplies and medicines. Notable findings were 44% availability of IMNCI chart booklet and unavailability of mothers' counseling card. Metronidazole was the only drug available in all facilities. Availability of other medicines ranged from 0% to 93%.

*Conclusion:* The district significantly lacked adequate health system support for IMNCI implementation. Provincial Maternal Neonatal and Child Health Program needs to streamline the implementation in the district by ensuring the required logistic and managerial support.

*Keywords:* IMNCI strategy, Implementation, factors (supporting and constraining)

### 12.30

#### INSIGHTS ON HOW PATIENT PERCEPTIONS OF AMBULANCE SYSTEMS AFFECT AMBULANCE USAGE IN KARACHI, PAKISTAN

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*Objective:* Pre-hospital care is a vital part of emergency medical care. Countries with decentralized ambulance systems, such as Pakistan, require patient knowledge to when to call an ambulance and which service to call. Very little is known about patient perceptions of ambulance services in Karachi. Conduct a qualitative exploration of the attitudes and perceptions affecting the use of ambulance services by patients in Karachi, Pakistan. *Method:* A qualitative interview was conducted with 30 individuals selected by convenience sampling representing patients who came to the emergency department by private transport versus one of two of the main ambulance service providers.

*Results:* Similar to what has been seen in other low and middle income countries (LMIC), two of the major themes that emerged that affect patient decision making with regards to ambulance use were a mistrust in the ambulance system or providers and a sense of inadequacy of the local system as compared with international standards. In addition, which had not been shown in previous studies, was a fundamental misunderstanding of the role of ambulance services in the healthcare infrastructure. *Conclusion:* This study identified some of the major issues that affect patient use of ambulance services in Karachi, Pakistan. This insight offers possible targets for patient education that will be essential to increase the proper usage of ambulances in order to optimize outcomes from serious injury and illness.

*Keywords:* Qualitative, ambulance, Pakistan

### 12.31

#### KNOWLEDGE AND EXPERIENCES OF MENSTRUAL ABNORMALITIES AND RELATED SYMPTOMS IN UNIVERSITY STUDENTS IN KARACHI

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*Objective:* Menstruation is a normal part of a woman's physiology. Menstruation can be viewed positively or negatively by society. In Pakistan a previous study in three squatter settlements of Karachi, Pakistan has shown that only 19% women consider menstruation a normal physiological process. The primary objective of this study was to assess the level of knowledge of abnormal menstrual symptoms in female non medical university students. Focused knowledge of common ailments which caused abnormal menstruation was also evaluated including polycystic ovaries.

*Method:* Cross-sectional survey among girls aged 17 -29 years from four universities of Karachi was conducted.

*Results:* The most commonly experienced menstruation related symptom experienced was pain. Acne was the symptom for which greatest frequency of participant visited the doctor. Otherwise, participant either did not seek treatment or self treated mostly. Primary sources of knowledge were overwhelmingly mothers and over 90% of the participants wanted formal menstrual education.

*Conclusion:* The pathology related to the female reproductive cycle if identified early can improve prognosis. The results of our study can be used to guide awareness programs addressing these.

*Keywords:* Polycystic ovaries, menstruation, university

### 12.32

#### KNOWLEDGE AND PERCEPTIONS REGARDING USE OF WATER PIPE IN FEMALE UNDERGRADUATE STUDENTS OF KARACHI

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*Objective:* Water pipe is becoming a global phenomenon and a growing trend in South Asia. In Pakistan, this trend is spreading to the urban population and a majority of its users are young adolescents. The aims of this study were to assess: i) the knowledge about health hazards of Water pipe use, ii) the perception and acceptability of female water pipe use, iii) the current prevalence of water pipe use, in female undergraduate students of Karachi.

*Method:* This was a cross sectional study carried out in 3 universities of Karachi. Based on convenience sampling, a



sample size of 362 was obtained. Descriptive statistics were presented through frequencies and tables. Pearson chi-square and Independent-sample t test was applied to measure association between variables.

**Results:** Ever-water pipe use was reported by 106 people (29.3 %). The mean knowledge score was calculated to be  $5.36 \pm 2.65$ , for water pipe users, and  $5.78 \pm 2.45$  for non-smokers. The majority linked rising trends in water pipe use to easy availability (29.3 %) and greater acceptability (29.3 %). Female water pipe smokers were more likely to consider water pipe smoking as an acceptable practice (OR: 4.97, CI: 2.96-8.31). They also believed that they were judged more harshly than men (OR= 1.91, CI: 1.05-3.49).  
**Conclusion:** Knowledge scores between female water pipe smokers and non-smokers were somewhat similar. A majority of the population reported the rise in water pipe smoking due to easy availability and greater acceptability. Actions should be taken to control the distribution of water pipe to minimize its use.

**Keywords:** Water pipe, knowledge, female

### 12.34

#### KNOWLEDGE, ATTITUDES AND PRACTICES REGARDING PHYSICAL ACTIVITY AMONG COLLEGE STUDENTS IN KARACHI, PAKISTAN

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**Background:** Physical inactivity is a leading risk factor worldwide for global mortality. College students are at a stage in life where they are transitioning from childhood practices to lifelong adult patterns of behavior. Knowing the levels of activity in this population and their attitudes towards and knowledge regarding physical activity could be beneficial in targeting barriers to physical activity and encouraging healthy practices, leading to a healthy adult population overall. **Objective:** To assess the knowledge, attitudes and practices of undergraduate college students enrolled in institutions in an urban center of Pakistan. **Method:** Quantitative cross-sectional study, using data collected by a self-administered questionnaire. **Results:** 52.6% (221/420) of students had a high level of activity, 18.3% (77/420) had a moderate level of activity, and 29.0% (122/420) had a low level of activity. Students displayed a varying amount of knowledge regarding physical activity and its advantages. Attitudes towards physical activity were positive, with a majority expressing a desire to engage in more activity. The most commonly identified barrier was lack of facilities. **Conclusion:** College students are moderately aware of the benefits of physical activity and demonstrate a positive attitude towards it. A large number of students were found to engage in high levels of physical activity and it is assumed that given the removal of identified barriers more students will be able to engage in levels of physical activity required to have a healthy lifestyle.

**Keywords:** Physical inactivity, college students, public health

### 12.35

#### KNOWLEDGE, AWARENESS AND PRACTICES REGARDING ENERGY-DRINK CONSUMPTION IN THE UNDERGRADUATE STUDENTS OF KARACHI, PAKISTAN

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**Objective:** The Pakistani youth has been touched by the growing popularity of energy drinks and there has been little research regarding the pattern of energy drink consumption among university students in Karachi. Multiple adverse effects of energy drink consumption have been reported ranging from mild to potentially life-threatening. The purpose of this study was to determine awareness regarding contents and potential adverse effects of energy drink consumption, with identification of pattern of consumption in our population.

**Method:** A cross-sectional study was conducted at three universities of Karachi. Students were selected by convenience sampling aged between 17-25 years who completed a self-administered questionnaire after giving consent. **Results:** There were 381 samples with a mean age of  $20.16 \pm 1.483$ . 57.2% (n=218) were males and 42.8% (n=163) females. 81.6% (311) reported of ever consuming energy drink; whereas the prevalence was 43.7% with the criteria of consuming one energy drink at least once every month for 6 months. The mean period of consumption was found to be  $23.8 \pm 24$  months with 27.3% (n=85) consuming frequently and 8.4% (n=26) consuming >365 energy drinks per year. 42.4% consumed energy drink because of its good taste whereas 56 (18%) had got a free sample. 13.1% had experienced side effects which included headache, dizziness, GI upset and unconsciousness. Out of 10, the mean score of knowledge of ingredients was  $3.40 \pm 2.137$  and of side effects was  $2.27 \pm 2.156$ . 28.1% (n=107) had no knowledge about the side effects though 65.6% were of the opinion that energy drinks are harmful to health. A significant difference was found between the mean scores of knowledge of side effects with the non-users having a higher mean score ( $3.5 \pm 2.4$ ) as compared to energy drink users ( $2.0 \pm 2.0$ ) with a p-value < 0.001. **Conclusion:** These results suggest the urgent need to plan health education programs to correct the wrong perceptions and to create awareness regarding effects of intake of energy drinks.

**Keywords:** Energy drinks, university students, awareness

### 12.37

#### LEVELS OF SELF-PERCEIVED PSYCHOLOGICAL STRESS IN PAKISTAN: A MULTI CENTRE STUDY OF PREVALENCE, AND ITS ASSOCIATED SOCIO-DEMOGRAPHIC AND LIFESTYLE DETERMINANTS

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**Objective:** Mental stress has a well-evident risk on an individual's psychological and physical health and may account for major cause of anxiety and depressive disorder, especially in the low

income countries. The study aims to estimate the prevalence of self-perceived mental stress and its association with socio-demographic and lifestyle determinants in Pakistan. *Method:* A cross sectional study was conducted during April 2010 till December 2011 in three primary care clinics of Karachi and Islamabad. A total of 641 participants were recruited through consecutive sampling and a pre-tested structured questionnaire was used for collecting information. Data analysis was done on SPSS version 19 and multivariable logistic regression was applied to identify the factors associated with self perceived stress.

*Results:* Overall, 73.3% of the study participants reported to have mental stress. The socio demographic factors found to be independently associated with self perceived stress in this study are, being female (AOR=1.63; 95% CI: 0.9-2.8) older age (AOR =1.63, 95% CI: 0.9-2.8), less educated (AOR= 8.7, 95% CI: 5.0-9.2), being housewife (AOR = 2.7, 95% CI: 0.3-6.8) and unemployed (AOR = 3.2, 95% CI: 1.8-7.6). Life style Factors associated with stress were: using smokeless tobacco (AOR=2.7, 95% CI: 1.3-5.8), being physically active (AOR=0.7, 95% CI: 0.3-0.8) was protective against stress. However, using any form of tobacco and self-perceived health status was not statistically associated with self-perceived mental stress.

*Conclusion:* The results of the study suggest associations between higher levels of self-perceived psychological stress and socio-demographic and lifestyle determinant. This demands awareness program and well established support system to reduce the increasing stress level. Further research studies needs to be conducted to emphasize these concerns and to evaluate the effectiveness of possible solutions in the general population.

*Keywords:* Psychological stress, life style factors, Pakistan

### 12.38

#### OPERATIONAL RESEARCH TO EXPLORE RESEARCH FATIGUE AMONG INJECTING DRUG USERS IN KARACHI, PAKISTAN

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*Objective:* Karachi is the largest metropolis of Pakistan attracting domestic migrants for economic opportunities. It is also epicenter of HIV epidemic in the country. Since 2004, one pilot study and four behavioral and biological surveillance rounds have been conducted in Karachi. As a result of this extra ordinary exposure of same kind of questions, IDUs know how to respond to high value questions related to sharing of needles or unsafe sexual practices. An operational research was conducted to explore the element of research fatigue among IDUs. Objectives • To explore the needle/syringe sharing behaviors of IDUs in Karachi through operational research • To develop strategies to improve sharing practices of IDUs

*Method:* This operational research was conducted on 36 spots in Karachi, selected on the basis of estimate of IDUs at each spot. A trained field worker (recovered IDU) visited each spot, observed sharing behavior of IDUs and asked questions related to practices in January 2009. Verbal consent was obtained from each respondent before asking questions.

*Results:* On average 14 IDUs were present at each spot and out of 36 selected spots, 81% were active while more than two groups were present at 69% spots. Sharing of syringes, needles and distilled water was observed at 63% spots while professional injector/street doctor was present at 60% spots.

*Conclusion:* There is a need to check internal consistency in surveillance research. It is likely that IDUs and other risk groups know how to respond to key questions but their responses do not match with the practices making the results doubtful.

*Keywords:* HIV, IDUs, operational research

### 12.39

#### PAK-NEDS – A TSUNAMI OF EMERGENCY CARE BURDEN IN EMERGENCY DEPARTMENTS IN PAKISTAN

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*Objective:* Pakistan on the verge of security and economical downfall cannot close eyes on the emerging infections and disease patterns which are pivotal in monitoring and formulating future strategies in the health care in the ED. Pak-NEDS aim to pilot a model surveillance system in the ED of Pakistan which could fill this gap.

*Method:* We conducted a prospective cohort study from December 2010 to March 2011 in 7 tertiary care centers in Pakistan. Data was gathered from 274,436 registered patients. Data collection tool was finalized after consultation with all the emergency department heads. Information on basic demography, presenting complaints, pre-hospital care and history, investigations, procedures and outcomes was collected from patients presenting to the ED.

*Results:* Almost 61% (162755 out of 267455) patients were male while (70.6%) cases were between 15-45 years of age. Elderly (over 60yrs) were 7.2% of the sample. 10546(4.1%) arrived via ambulance while 136439 (52.4%) were walk-in patients. The most frequent presenting complaints included fever (15.9%), abdominal pain (11.6%), chest pain (9.7%) and vomiting/Nausea/Diarrhea (12.6%). Injuries (head/neck/face, upper limb), and trauma (lower limb) were the reason for visit in 11% and 8.5% cases. Major provisional diagnosis included fever (21.6%) and abdominal pain (13.8%). Mortality was 1.8% and 8.5% detained for observation.

*Conclusion:* Majority of patients coming to the ED involve trauma, and walk-in cases. Policy decisions need to take this into account and a national database on ED patients should be introduced for continuous monitoring of healthcare dynamics and needs of the population.

*Keywords:* Emergency, disease, healthcare

#### 12.40

##### PAK-NEDS – PAEDIATRIC DISEASE SPECTRUM IN EMERGENCY DEPARTMENT OF PAKISTAN

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**Objective:** Each year a large group of critically ill children presented to the emergency room (ER) of a tertiary care hospital of a developing countries. The knowledge of the pediatric disease spectrum and their frequencies is an important factor to plan a cost effective service delivery system within limited resources. Pakistan National Emergency Department (Pak-NEDS) surveillance system identifies the major disease spectrum of children visiting in Pakistani emergency department.

**Method:** Data was collected from December 2010 to March 2011 in seven major tertiary care centers from all four provinces of Pakistan. These centers included 5 public and 2 private hospitals having a collective annual census of over one million patients. The data collection tool was finalized after consultation with the emergency department heads of all institutions.

**Results:** 25052 children were registered in the Pak-NEDS surveillance system. 61.1% were male and 38.9% were female. 38.4% were children between 10-14 years of age, 27% were less than 15 years, 21.4% were children between 5-9 years and 13.2 % were children between 0-5 years. The most common chief complaints were injury (31%), fever (12.7%), vomiting, nausea and diarrhea (8.4%), generalized body ache (6%), pain in abdomen (5.4%) and URTI (9.5%). The most common final diagnosis were fever (18.4%), abdominal pain (13.5%), limb injury (14.5%), non-cardiac chest pain (10.2%), generalized pain (8%), headache (7.6%) and gastroenteritis (4.4%). Discharges from the emergency room were (89.1%), mortality was (1.3%) and admissions were (9.5%).

**Conclusion:** Paediatric disease spectrum data will help to initiate guidelines for comparison with best practices, to conduct outcomes studies and to elaborate a strategy for promoting first line pediatric emergency services in Pakistan.

**Keywords:** Paediatric, diseases spectrum, emergency department

#### 12.41

##### PATTERNS OF SUBSTANCE ABUSE AMONG ADOLESCENTS IN KARACHI, PAKISTAN: A KNOWLEDGE, ATTITUDE AND PRACTICE STUDY

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**Objective:** Substance abuse among adolescents is increasing day by day and it poses a great risk to adolescents' health. Although the health consequences among adolescent age group appears late but they can be devastating. There are very few studies conducted in Pakistan to see Knowledge, attitude and practices (KAP) of adolescents who are substance abusers. Therefore this study attempted to explore Knowledge, attitude and practices of such adolescents. Simultaneously the study also aimed to identify risk factors, consequences and prevalence of substance abuse.

**Method:** A cross-sectional qualitative study was conducted among male and female adolescents (15-25 years) of Karachi belonging to middle and high socio-economic status in January 2012. KAP (Knowledge Attitude and Practices) questionnaire was used as a survey tool. Sample size=100.

**Results:** 80% interviewed, were abusing currently at least one type of substance. 26% who were previous users succeeded to quit substance abuse. 2 had poor knowledge about consequences of substance abuse. 54% have satisfactory knowledge but they are not ready to change their attitude of abusing substance. One of the reasons explored was their perception of inability to do so. Only 3 were suffering from health consequences (Upper respiratory tract infection, Oral sores). Among types of substances; 28% used betel nuts, and shisha was second most common (23%). The main pulling factors identified were peer pressure (38.46%) and fashion (28.2%).

**Conclusion:** There is a dire need of serious attention to be given to substance abuse among adolescents. Existing laws need to be implemented more strictly regarding its abuse, sale and purchase. This study with small sample size (n=39) highlights the need for further researches to be conducted among this age group belonging to different socio-economic status. This study concludes that there is a significant need to change the attitudes of adolescents regarding substance abuse in society.

**Keywords:** Substance abuse, adolescents, knowledge, attitude and practice

#### 12.43

##### PHYSICIANS' PERSPECTIVES ON FACTORS INFLUENCING PEDIATRIC CARE MANAGEMENT FOLLOWING INTEGRATED MANAGEMENT OF NEONATAL AND CHILDHOOD ILLNESS (IMNCI) STRATEGY IN A DISTRICT OF SINDH, PAKISTAN

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**Objective:** IMNCI is a Primary Health Care (PHC) strategy which targets five major childhood killers: pneumonia, diarrhea, measles, malaria and malnutrition to reduce under-five morbidity and mortality in developing countries. Evidence indicates that IMNCI improves pediatric health outcomes. Pakistan is having persistent under five morbidities and mortalities due to above listed preventable causes. This aggravates the need to understand the determinants of strategy implementation from IMNCI trained providers. Therefore, the objective of this study was to explore IMNCI trained physicians' perspectives on factors influencing pediatric care management following IMNCI strategy in a district of Sindh, Pakistan.

**Method:** A qualitative exploratory study was conducted during July-September 2009 in district Matiari. In depth interviews were conducted with eight IMNCI trained physicians posted at public sector PHC facilities. Interviews were audio taped and continued till theoretical saturation point.

**Results:** Major factors supporting trained providers' practice to IMNCI strategy were significance of the strategy and belief in its potential to improve child health. On the other hand, practice was found to be constrained due to unavailability of required medicines, reporting tools, unavailability of separate pediatric

outpatient clinic, lack of supervision to trained physicians, inefficient referral system and non-compliance by child's parents on prescribed medicines.

*Conclusion:* Physicians' practice according to IMNCI protocol has been significantly affected due to ineffective district health care system support. Therefore, district health management team needs to provide required logistic and managerial support to trained physicians towards pediatric care management in collaboration with Provincial Maternal, Neonatal and Child Health Program.

*Keywords:* IMNCI strategy, Implementation, factors (supporting and constraining)

#### 12.44

PREVALENCE OF INTENTIONAL SELF-INFLICTED INJURIES PRESENTING IN THE EMERGENCY DEPARTMENTS IN PAKISTAN: RESULTS FROM THE PAKISTAN NATIONAL EMERGENCY DEPARTMENT SURVEILLANCE STUDY (PAK-NEDS).

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*Objective:* Despite their immense burden on scarce resources, intentional self-inflicted injuries remain understudied in Pakistan. The aim of this study was to examine the frequency and patterns of intentional self-inflicted injuries presenting in the emergency departments (ED) across Pakistan.

*Method:* Data were collected from December 2010 to March 2011 in seven major tertiary care centers from all four provinces of Pakistan. These centers included 5 public and 2 private hospitals having a collective annual census of over one million patients. We analyzed information on basic demography, types, causes and outcomes of injuries, modes of arrival and delays, pre-hospital care and history, investigations, procedures and outcomes.

*Results:* Out of a total of 274,436 patients registered in the PAK-NEDS study, 14,571 (5.3%) were recorded as having intentional injuries, of which 4,347 had self-inflicted intentional injuries. Among patients with self-inflicted intentional injuries the mean age was 27 (SD=14.4) years, 70% were males, 37% were walk-ins while 8% were brought by an ambulance. A majority (89%) had not received any treatment within 72 hours. 6.9% of these patients received no treatment, 33% received dressing or debridement, 14% received a plaster or cast and 12% received antibiotics. 10% of these patients were admitted to inpatient care, 0.5% to the intensive care unit, 1.7% died, 2.6% were referred to an outside physician, and 61% were asked to follow up.

*Conclusion:* Intentional self-inflicted injuries are a substantial component of the burden of injuries. There is a need to develop policies aimed at better prevention and management of these injuries.

*Keywords:* Intentional self-inflicted injuries, surveillance, ER

#### 12.47

RADIOLOGY RECOVERY ROOM, HOW WELL WE ARE USING IT?

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*Objective:* The Primary objective of this audit was to see the utility of recovery room in radiology. To identify the sections from where patients were referred their reasons for referral, time occupancy, requirements and the short comings.

*Method:* All patients received in radiology recovery room between June 2011 and August 2011 were included in the audit. Data was reviewed with respect to the modality from where the patient came before or after the procedure. The reason for patient's visit to recovery was also evaluated during the audit; keeping in mind that each patients has particular requirements like I.V cannulation, vital monitoring and post procedure care etc. Important factor considered in the audit was patient's time occupancy of recovery room and check if proper documentation was done by the relevant modality from where the patient had come for recovery and whether the recovery room staff did proper documentation upon discharge of patient from there. *Results:* Total of 291 patients' were managed in recovery room, amongst which 175 were outpatients and 116 were inpatients. 182 patients came before procedure and 141 were for post procedure management. Maximum patients in our department were from intervention suite (non cardiac vascular as well as non vascular) however 55 were from ultrasound, 46 from CT scan, 21 from MRI and 28 for miscellaneous reasons. We explain in detail the average time occupancy with our three bedded recovery room, identifying the medical surgical items utilized. Emergencies were managed by nursing staff and documentation was performed.

*Conclusion:* Beyond doubt recovery room are becoming an indispensable unit of radiology departments. Recognition of shortcomings in recovery room will help plan in expansion of not only the physical unit and facilities, but also emphasize on improvement of quality and quantity of the dedicated nursing staff.

*Keywords:* Radiology, Recovery room, Anesthesia

#### 12.49

RAW PAPAYA CAN TENDERIZE THE MEAT MORE EFFECTIVELY AS COMPARED TO RIPEN PAPAYA

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*Introduction:* Papaya contain papain enzyme which penetrate in fibrous muscles and thus help to tenderize the meat. Housewives usually prefer raw papaya for meat tenderizing but in recent advances chefs recommend to use ripen papaya. The literature suggests that the latex of raw papaya can cause skin irritation and can rupture the lining of uterus which can lead to miscarriage.

*Method:* This study aims to compare the effect of raw and ripen papaya on meat (beef). We also assessed that the presence of papain enzyme in both the papayas with the help of gelatin

solution as it has ability to denature protein and found that test tube containing raw papaya showed more liquid gelatin when compared to ripen and confirmed the presence of more papain in raw papaya. We conducted another experiment to observe the effect of raw and ripen papaya on meat tenderization, in which we marinated ½ kg of meat with raw papaya & ½ kg with ripen papaya for 18 hours. We completed a series of 20 cycles (each of 40 minutes) by boiling the meat of same size (length + width). *Results:* It was observed that raw papaya tenderizes the meat 90% and ripen papaya 85% under controlled conditions. *Conclusion:* We reported successive tenderization of meat and concluded that raw papaya tenderized the meat only 5% more than ripen papaya, which is not that significant as compared to the ripen one. Furthermore the literature shows that raw papaya is not recommended due to health reasons so it is recommended to use ripen papaya.

*Keywords:* Tenderization, enzymes, papaya

### 12.50

#### RELATIONSHIP BETWEEN MENTAL ILLNESS AS GLOBAL BURDEN OF DISEASES AND SOCIO-ECONOMIC FACTORS.

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*Objective:* To report highlight the relationship between inequality as socioeconomic domain and its impact on mental health of individuals, moreover; To highlight the factors which impact on mental aspect of individuals and to promote intervention and to flourish public mental health by working on socio-economic factors.

*Results:* Relationship between mental aspect of an individual and inequality in environment related to societal norms seems to be significant and is in risk to increase the global burden of disease related to mental illness. The most finding of increasing mental health burden of an individual were inequality in incomes rates hence increasing the communication gap between rich and poor; insecurity at workplace; broad influence of belief and practices related to health, illness and healing; discrimination and racism; limited access to health care facility especially limited to mental health; and uses of substance abuse as coping strategy among population. possible intervention which were have positive outcomes in literature review were identify and remaking of healthy public policy; utilization of access to health care; improvement in community environment that promote physical and mental well being and quality of life; address issues on unequal access based on equity; development and promotion of education, literacy and employment facilities; and to promote partnership between health and other sectors to address social and economic problems that are catalyst for distress and is carrying a higher ratio in increase the mental illness among people.

*Conclusion:* Finding reinforced that mental well being of an individual is very essential aspect which can be healed by dealing the precipitating factors.

*Keywords:* Mental illness, precipitating factors, socioeconomic factors

### 12.51

#### ROAD TRAFFIC INJURIES IN URBAN PAKISTANI CHILDREN AND ADOLESCENTS: AGE, GENDER AND ROAD USER PERSPECTIVES

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*Objective:* Approximately nine in ten child road traffic deaths occur in low and middle income countries. Such death distribution across demographic groups and different road users has not been much documented. This study investigates children road traffic injuries in Karachi, considering gender and age differences across road users and injury outcomes.

*Method:* This is cross-sectional study and reports road traffic injuries sustained by children aged < 20 years in a city wide hospital-based ongoing surveillance during 2007-2010. Three categories of unprotected road users (pedestrians, drivers and passengers of two wheelers), two protected users (drivers and passengers of three or more wheelers), four age groups (<5, 5-9, 10-14, and 15-19 years) and three outcomes (discharge, admission and death) were considered. Age and gender specific injury ratios and injury distributions across road users and outcomes were compiled.

*Results:* The total registered cases for four years were 1, 30,722. Of which 32,814 were children less than 20 years, and 86% injuries were sustained by boys. At age 5-9 years the boys to girls' ratio was 2.8 and it rose to 13.3 at 15-19 years. Injuries were common among unprotected road users; first as passengers of two wheelers (<5 years), then as pedestrians (5-9 and 10-14 years) and thereafter (15-19 years) as motorcycle passengers for girls and motorcycle drivers for boys. Pedestrians had the highest fatal cases (46%).

*Conclusion:* The gender difference and contrast in mode of transport increases with age. Unprotected road users suffer more in road traffic injuries and in fatal outcomes.

*Keywords:* Road traffic injury, children, Pakistan

### 12.53

#### SCHOOL INJURIES IN CHILDREN OF LOW-INCOME SETTING- RESULTS FROM THE PILOT INJURY SURVEILLANCE IN RAWALPINDI CITY, PAKISTAN

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*Objective:* Children pass a significant amount of their time at schools. The interaction of the students amongst themselves and with the environment can act as possible contributing factors of injury. Little is known about the epidemiology of school injuries in low-income setting. The objective was to see the epidemiology of injuries in schools that required emergency department (ED) care in a Pakistani urban setting.

**Method:** A pilot injury surveillance study was conducted at the EDs of three major tertiary-care hospitals of Rawalpindi city from July 2007 to June 2008 and included children of less than 15 years injured at school. The World Health Organization's questionnaire for injury surveillance was used.

**Results:** There were 923 school injuries. Mean age of children involved was 8.3 years (SD  $\pm$  3.3) with male female ratio 2.9:1. Majority (98%) of these school injuries were unintentional in nature; while four (0.4%) students harmed themselves deliberately and nine (1%) injuries were inflicted by another individual. Most injuries occurred while playing 85.5% (n=789); of which the most common mechanism was falls (n=797, 86.3). A total of 93.3% (n=861) patients were directly discharged home from ED. The relative proportion of having hospital admission/death was higher compared to overall average for certain factors; age 10-14 years (63.8%), male (86.7%) other education activities (40.4%), fire/heat (37.8%), burns (39.5%) and head injuries (27.9%).

**Conclusion:** Falls are the most common mechanism of injury in the schools surveyed. To develop effective injury prevention strategies for schools, injury risk assessment in schools is needed.

**Keywords:** School injuries, children, Pakistan

#### 12.54

##### SELF-PERCEIVED HEALTH AMONG SCHOOL GOING ADOLESCENTS IN PAKISTAN; INFLUENCE OF SOCIO-DEMOGRAPHIC AND LIFE STYLE FACTORS

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**Objective:** Adolescents are at substantial risk of acquiring behaviors which might influence their health status. This study was aimed to assess the proportion of school going adolescents (both males and females) with poor self-perceived health and its associated factors.

**Method:** A cross-sectional study was conducted in three major cities of Pakistan i.e. Karachi, Lahore and Quetta. From each city, six secondary schools were randomly selected (3 public and 3 private). Pre-tested, self-administered questionnaire was distributed to students. Multivariate analysis was conducted to determine independent factors associated with poor self-perceived health

**Results:** Factors significantly associated with poor self-perceived health were being male (AOR = 1.75, 95% CI: 1.09 - 2.79), living in extended family (AOR = 2.65, 95% CI: 1.66 - 4.22), unskilled employment of father (AOR = 2.17, 95% CI: 1.35 - 3.48), lack of parental-child communication (AOR = 1.74, 95% CI: 1.03 - 2.91) and unfair treatment by parents (AOR = 1.80, 95% CI: 1.09 - 2.96). Life style factors such as use of smokeless tobacco (AOR = 2.14, 95% CI: 1.26 - 3.96) and unhealthy diet (AOR = 3.60, 95% CI: 1.76 - 7.33) were associated with poor self-perceived health.

**Conclusion:** Better employment opportunities, parental counseling and increase awareness about healthy diet are recommended to improve adolescent self-perceived health in Pakistan

**Keywords:** Adolescents, self-perceived health, Pakistan

#### 12.55

##### SERO-PREVALENCE OF DENGUE VIRUS AMONG CHILDREN OF AGES 1-15 YEARS, SELECTED FROM AN

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**Background:** Dengue virus is an endemic disease which has great public health significance in the term of morbidity and mortality. About 50 to hundred million cases of Dengue fever with about half a million cases of Dengue hemorrhagic/ shock syndrome are estimated annually. Objective: 1. To estimate the prevalence of Dengue virus in children between 1-15 years 2. To estimate the prevalence with respect to increasing age among the target population

**Method:** A cross sectional survey was conducted in Garden area , 900 children were enrolled which was further stratified by area (East, West, North and South) and age group (1-5, 6-10 and 11-15 years) therefore 75 children were selected from each age group and area. SPSS & Chi square was used to compare the association between categorical variable, P-value <0.05 considered as significant.

**Results:** Among the sample obtained 47% found positive IgG virus in the Eliza. Significant difference exists with respect to age (p-value <0.001) .Low prevalence observed in 1-5 years (23%) moderate prevalence in 6-10 years (57%) and highest prevalence in 11-15 years (60%). Our study indicated high prevalence of IgG virus in all zones of Garden and statistically significant association were found in drinking water, hand washing and malnutrition.

**Conclusion:** The citizen of the Karachi are at high risk of dengue virus possibly predisposing the recurrent epidemic in future and the population of children between 11-15 years are more prone to develop infection as compare to younger ages 1-10 years

**Keywords:** Dengue virus, IgG, high risk

**12.56**

**SEXUALLY TRANSMITTED DISEASE SYNDROMIC CASE MANAGEMENT PUBLIC SECTOR FACILITIES DEVELOPMENT AND ASSESSMENT STUDY IN PUNJAB PAKISTAN**

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*Objective:* Sexually transmitted infections are among the most common illness in the world. 150 million of the cases occur in South-East Asia alone. The National AIDS control program (NACP) in 2007 felt the need to revise the STI guidelines by using the syndromic approach, a policy where there are limited laboratory services available at the PHC settings and hence it came up with the National guidelines. We thus proposed a prospective study utilizing an intervention package, which included guidelines and protocols on syndrome based management of STI adapted in light of NACP and WHO technical guidelines.

*Method:* This was an operational research prospective study which was completed in duration of 18 months (i.e. January 2009 – June 2010). The project was implemented in two districts of Punjab, Sargodha and Jhang. The intervention package included case management desk guide (based on WHO and Pakistan syndromic guideline for primary care facilities), training modules, record card and registration, performance management tools, leaflet, correct drugs together with a leaflet for each patient  
*Results:* STI had a prevalence of 25.94 per 100,000. Out of the total, 1082 are female cases and 419 are male. 75% were registered in Sargodha district, while 25% in Jhang. Vaginal discharge (80%) and abdominal pain were the most common symptoms that women presented to the STI clinics with. In male patients, those attending the rural health facility for treatment of STI have had greater chances of guidelines being followed as compared to the urban health facility after adjusting for all other confounders. It was reverse in case of female patients. Older patients (>25 years) were treated better according to guidelines as compared to younger patients.

*Conclusion:* Screening, diagnosis and treatment costs for many STI are expensive and thus a cost effective public health strategy is to adopt the STI syndromic case management.

*Keywords:* Sexually transmitted diseases, syndromic management, intervention guidelines

**12.57**

**STUDY TITLE: SUPPLEMENT TO AETIOLOGY OF NEONATAL INFECTION IN SOUTH ASIA: DEVELOPMENT OF A COMMUNITY-BASED PRESUMPTIVE CLINICAL DIAGNOSIS ALGORITHM AND TREATMENT REGIMEN FOR MATERNAL PUERPERAL SEPSIS**

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*Objective:* Goal: The goal of this study is to prevent maternal deaths and long-term health consequences of puerperal sepsis among women in two low-resource countries, Bangladesh and Pakistan, and guide global policy development for community-based maternal care by frontline health workers. Aim: The aim of this initial formative phase of the study is to develop and validate a clinical algorithm for identification and treatment of postpartum sepsis among enrolled women in study sites  
*Objective:* 1. To develop a clinical algorithm for use in the community by community health workers using both symptoms and signs to diagnose postpartum infections, specifically endometritis and puerperal sepsis.

*Method:* Location: Data collection for the formative research will involve interviews from women with post partum sepsis, their female relatives, their physicians and health-care providers about signs and symptoms of the disease will take place in two settings: •Facility: Patients with puerperal sepsis will be identified and picked from the Department of Obstetrics and Gynaecology, Jinnah Postgraduate Medical Centre, Karachi. •Community sites: Five research sites (Bilal Colony, Rehri Goth, Ibrahim Haidery, Ali Akber Shah Goth and Bhains Colony), 4 low-income communities located in peri-urban coastal fishing villages located about an hour drive from Aga Khan University (AKU) and 1 urban squatter settlement (Bilal Colony), about 30 minutes from AKU will be the community setting for this first formative phase. Design: This study relies on a prospective cohort design with a nested case-control to determine the bacterial and viral aetiology of Maternal PP Sepsis using healthy post-partum women as controls. It will draw participants from the prospective birth cohort of the ANISA study. However, in the initial clinical algorithm development phase, we will recruit interviewees from ANISA community sites and 1 high volume obstetric tertiary care facility (JPMC).

*Results:* We have just concluded this study and are running analysis of findings on anthropac and NVIVO. Results should be ready to be shared in the coming month and can be shared on request.

*Keywords:* Puerperal sepsis, Karachi, formative terms

**12.58****THE UPSURGE OF SSPE: A REFLECTION OF NATIONAL MEASLES IMMUNIZATION STATUS**

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Karachi*

**Objective:** Subacute sclerosing panencephalitis (SSPE) is a progressive, catastrophic neurodegenerative disorder caused by mutant measles virus. The epidemiology of natural measles infection is reflected by the rise in SSPE incidence. It is the result of poor measles vaccine coverage that SSPE is now frequently being reported in Pakistan.

**Method:** Data on 43 patients diagnosed with SSPE at the Pediatric Neurology ward of Aga Khan University from 2000- 2012 were collected.

**Results:** There was a male predilection ( 72% males, 28% females). 13 (30%) children were vaccinated for measles, 19(44%) were unvaccinated and immunization status for 11( 26%) children was not known. 17 (39.5%) children had a history of measles. 7 (41%) out of these suffered from measles under one year of age. 14(32.5%) kids had no history of measles whereas no clear history was elicited in 12(28%) children. Over the nine year period from 2000-2008, 19 cases of SSPE were diagnosed with a rapid rise over the past few years. A total of 24 cases were identified between 2009-2012 with 50% of cases being diagnosed in 2012 only. What is noteworthy is the fact that 66.6% of children diagnosed with SSPE over the past four years were unvaccinated.

**Conclusion:** The rise in SSPE incidence is the result of ineffective measles vaccination across the country. The younger age at onset demands revision of the measles vaccine schedule. If timely efforts are not made, we are bound to see more SSPE in the coming decade that will further accentuate the national disease burden.

**Keywords:** SSPE, measles, immunization

**12.59****TO PROVIDE THE SAFE PRACTICES IN X-RAY DEPARTMENT TO AVOID RADIATION HAZARD ON FUTURE PREGNANCIES BY PROPER DOCUMENTATION OF LMP.**

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**Introduction:** When a woman becomes pregnant, the conception occurs about 14 days after the first day of the woman's LMP. The first trimester is the most concerning regarding the issue of birth defects because that is the time period in which most of the fetus is formed, the most common adverse effects includes Microcephaly and SFD have been reported at doses between 10 and 20 rads.

**Objective:** To evaluate of proper documentation of LMP of CBW before the X-Ray, in order to avoid radiation exposure to the embryo.

**Method:** Retrospective analytic study conducted from 1st January

2009 to 31st December 2010 at Radiology (AKU). Data of LMP were collected through a LMPRF from CBW b/ w >12 &< 50 years age.

**Results:** About 8,456 (100%) female were got x-ray services. Out of these 5,256 (62.15 %) CBW were filled the LMPRF. Only 12(0.149%) women were counseled about risk of radiation exposure during pregnancy & got signed on LMPRF or flow sheet, In which 11 (11/12x100=91.66% ) had trauma & one(1/12x100=8.33%) was referred for KUB-Ultrasound, while 3200 (37.84% ) Females who has age < 12 years, divorced & post-menopausal women were excluded from the study .

**Conclusion:** By implementation of proper documentation of LMP, we can able to eliminate any chance of the malformation in "Our Future Generation".

**Recommendation:** The ideal time to schedule radiologic procedures in CBW is during the first 10 days of the menstrual cycle. [2]. The ACOG & ACR state that exposures of less than 5 rads do not increase the risk for anomalies.

**Keywords:** CBW [childbearing women], LMPRF [LMP Record Form], LMP [LAST MENSTRAL PERIOD].

**12.60****TRAINING NEEDS ASSESSMENT OF REPRODUCTIVE HEALTH LEADERS OF A LEADERSHIP DEVELOPMENT PROGRAMS IN PAKISTAN**

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**Objective:** Pakistan is reported to the sixth most populous country and is now expected to move to the fifth place in 2050, with 292 million people. Currently two third of the population resides in rural areas. Less than one third women have access to skilled birth attendants and only 16% receives at least four antenatal visits. The issue of workforce training and competency is central to the success of any public health system. The first step in designing a training and development program is to conduct a needs assessment to be effective and efficient. The objective of the study is to determine the Training Needs Assessment of Reproductive Health and Family Planning Leaders of Leadership Development Programs in Pakistan. The rapid population growth is a challenge for the Pakistan government to cope.

**Method:** Study Design: A Cross-Sectional Study Design is conducted with Reproductive Health and family planning leaders of the Leadership Development program from all over Pakistan through a structured self-administered questionnaire. **Results:** In health care system of Pakistan, responding to felt needs is important for improving performance of the reproductive health and family planning leaders. It was found that practical, problem based learning methods are not normally included in the trainings and less emphasis was drawn in enhancing communication skills. In areas of proactive management, administration, gender sensitivity and community participation, leaders highlighted the need of further training. Furthermore, Participants reported additional needs of training in areas of budget management, disaster management, emergency preparedness and strategies for health and risk communication



for better reproductive health of the Pakistani population. *Conclusion:* The study signifies that Training needs were heterogeneous and differed within professions by the tasks performed. Therefore, it is important to assess the tasks performed and training needs in order to allocate training resources appropriately. This study also illustrates that Training need assessment is a practical tool to enable participation in changing needs of community and organizations and review training needs periodically.

*Keywords:* Reproductive health, Family planning, leadership Development

### 12.61

#### USE OF SMOKE LESS TOBACCO AMONGST THE STAFF OF TERTIARY CARE HOSPITALS IN THE LARGEST CITY OF PAKISTAN

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*Objective:* Use of Smoke Less Tobacco (SLT) is very common in South and South-East Asian countries. It is significantly associated with various types of cancers. The objectives of this study were to assess the proportion of hospital staff that use SLT, to identify the factors associated with its use and their practices.

*Method:* In a cross-sectional study, 560 staffs of two tertiary care hospitals were interviewed in the year 2009. Nurses, ward boys and technicians were counted as a paramedic staff while drivers, peons, security guards and housekeeping staff were labeled as non-paramedic staff. SLT use was considered as usage of any of the following: betel quid (paan) with or without tobacco, betel nuts with or without tobacco (gutkha) and snuff (naswar). *Results:* About half (48.6%) of the hospital staff was using at least one type of SLT. Factors found to be statistically significant with SLT were being a male (OR=2.5; 95% CI=1.8-3.7); having no/less years of education (OR=1.7; 95% CI=1.2-2.4) and working as non-paramedic staff (OR=2.6; 95% CI=1.8-3.8). Majority of SLT users were using it on regular basis, for > 5 years and keeping it in oral cavity for > 30 minutes. About half of the users started due to peer pressure and had tried to quit this habit but failed.

*Conclusion:* In this study, about half of the study participants were using SLT in different forms. We suggest educational and behavioral interventions for control of SLT usage.

*Keywords:* Smokeless tobacco, hospital staff, Pakistan

### 12.62

#### VALIDATION OF PHYSICAL ACTIVITY QUESTIONNAIRE IN CHILDREN AND YOUTH IN URBAN SETTINGS OF KARACHI

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*Objective:* Physical Activity (PA) assessed through objective methods is expensive and laborious to implement during surveys

particularly in children and youth; thus, estimates of PA rely on subjective instruments. We aimed to assess validity and reliability of Youth Physical Activity Questionnaire (YPAQ) to assess PA in children and youth at larger-scale studies.

*Method:* PA measured through Actigraph-GT3X and concurrently with YPAQ for a week period. Pearson and Spearman-rank coefficients for validity and reliability were calculated with 95% CIs. Bland Altman plots constructed to assess agreement between the two methods. To process Actigraph data, Actilife version-6 and for statistical analysis SPSS and Medcalc software's were used.

*Results:* A total 252 children aged 9-14 year participated and valid accelerometer data were obtained from 234 participants. The coefficient for criterion validity on overall activities was 0.11 (95% CIs: -0.02, 0.23) and for moderate-to-vigorous physical activity (MVPA) was 0.37 (95% CIs: 0.24, 0.49). Bland-Altman plots showed YPAQ over-estimated time-spent in overall and MVPA however, under-estimated sedentary and light activities. Test-re-test coefficients for overall activities was suboptimal 0.54 (95% CI: 0.42, 0.67) and for moderate and MVPA were moderately strong, 0.61 (95% CI: 0.48, 0.73) and 0.62 (95% CI: 0.49, 0.74) respectively.

*Conclusion:* YPAQ has limited validity and reliability for overall activities, however has fair validity and reliability for MVPA. Since no subjective tool has acceptable validity and reliability, therefore YPAQ can be used at large-scale with other appropriate tool like activity-logs and diaries to reduce measurement errors and related biases.

*Keywords:* Physical activity questionnaire, validation, children and youth

### 12.63

#### YOUNG ADULTS' PERCEPTIONS ON LIFE PROSPECTS AND GENDER ROLES AS IMPORTANT FACTORS TO INFLUENCE HEALTH BEHAVIOUR: A QUALITATIVE STUDY FROM KARACHI, PAKISTAN.

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*Objective:* The purpose of this qualitative study was to explore perceptions and expectations of young males and females, in Karachi, Pakistan, regarding their life prospects and gender roles, with resulting implications for health behaviour. The main theme emerging was "Young adults' prospects in life are hampered by psychosocial and gender equality constraints". Gender inequality and the low status of women in society were described as major obstacles to the overall development. Persistent withholding of information to the younger generation on sexual and reproductive health issues was perceived to increase exposure to health risks, particularly sexually transmitted infections (STIs). The present study reveals new discourses on equality among young adults, pointing towards an increasing, sound interaction between the sexes and aspirations for more gender equal

relationships. Such views and awareness among the younger generation constitutes a strong force towards change of traditional norms, including reproductive health behaviour, and calls for policy change.

*Method:* A qualitative study design, using focus group discussions (FGDs) was adopted. In FGDs, participants actively discuss a specific topic in building new knowledge about social processes. In this study, we wanted to catch the interaction between the participants, their viewpoints, perceptions and ideas on prospects in life and their gender equality attitudes. However, as this is a sensitive topic, the participants were instructed not to reveal any personal experiences but to discuss in general terms what they believed was the current notion among people in the age group 17-21. Moreover, young people in Pakistan would hesitate to discuss such matters in individual interviews

*Results:* The present study reveals new discourses on equality among young adults, pointing towards an increasing, sound interaction between the sexes and aspirations for more gender equal relationships. Such views and awareness among the younger generation constitutes a strong force towards change of traditional norms, including reproductive health behaviour, and calls for policy change.

*Conclusion:* Young people should be equipped with proper knowledge in this area. Parental guidance, school related health education, health care services able to respond to young people's needs but also a strong support from religious leaders are required. Policy makers, institutions and non-governmental organizations need to respond appropriately to such demands and challenges.

*Keywords:* Gender inequality, gender roles, young adults

#### 12.64

##### KNOWLEDGE OF PATIENTS' VISUAL EXPERIENCE DURING CATARACT SURGERY: A SURVEY OF EYE DOCTORS IN KARACHI, PAKISTAN

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*Background:* Several recent studies have recommended that ophthalmologists must be aware of the visual sensations (and their associated anxiety/fear) experienced by patients undergoing cataract surgery. We assessed the knowledge of a group of eye doctors in Pakistan regarding these phenomena.

*Methods:* This was a cross-sectional survey. Eye doctors (ophthalmologists, residents and medical officers) attending the Ophthalmology Society of Pakistan Annual Conference 2011, in Karachi were invited to participate in the study. A self-administered structured questionnaire was used to examine their knowledge of visual sensations and their associated anxiety/fear experienced by patients during cataract surgery. Simple frequencies and proportions were calculated to describe the data.

*Results:* A total of 150 ophthalmologists, residents and medical officers were invited to participate in the study. Of these, 68 (45.3 %) responded. The mean age ( $\pm$  SD) of the participants was 42.9 (13.2) years. The proportion of participants who thought that patients could experience visual sensations during cataract surgery under regional anaesthesia was 89.7 % and that under topical anaesthesia was 73.5%. The most frequently cited sensations included: light perception, changes in light brightness,

movements, instruments and surgeon's hands or fingers. The eye doctors estimated that 38.9 % and 64.3 % patients would see at least something during cataract surgery under regional anaesthesia and topical anaesthesia, respectively. They also believed that 24.2%-36.9% of patients may experience anxiety/fear as a result of visual sensations during such surgery. Approximately half of the eye doctors did not think that retained vision was a source of fear or anxiety for the patients. While most of them acknowledged the importance of preoperative counselling in helping to alleviate such fear/anxiety, the majority of them did not regularly counsel their patients on what to expect during the surgery.

*Conclusion:* Our study reveals that a significant proportion of eye doctors do not have adequate knowledge of the visual phenomenon and their associated anxiety or fear, that patients can experience during cataract surgery. Targeted educational interventions are needed to increase awareness of this phenomenon among eye care professionals.

*Keywords:* Perceptions, visual experience, cataract surgery

#### 12.65

##### PREVALENCE AND DETERMINANT OF DRY EYE SYNDROME AMONG COMPUTER USERS

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*Objective:* To examine the prevalence and determinant of dry eye syndrome among computer users

*Methodology:* This was a cross-sectional survey. A standardised dry eye questionnaire was administered to sample of computer users at the Aga Khan University Hospital, Karachi. Dry eye was defined as the presence of one or more dry eye symptoms (i.e. eye dryness, grittiness, burning, redness, crusting and stuck shut in the morning) often or all the time. Data were also collected on age, gender, average daily computer use, average daily TV watching, contact lens use, diabetes, smoking and use of certain medications.

*Results:* A total of 324 computer users were included in the study. Nearly a third (30.9% or 100/324) had dry eye. Female participants compared with their male counterparts had higher odds of dry eye symptoms (adjusted odds ratio: 1.97; 95% CI: 1.18, 3.31). Similarly those with a daily computer use of at least 8 hours (adjusted odds ratio: 1.77; 95% CI: 1.07, 2.92) and those with at least one high-risk factor (adjusted odds ratio: 1.98; 95% CI: 1.12, 3.50) were more likely to have disease symptoms than their reference groups. No statistically significant association of dry eye was found with age and TV watching. *Conclusion:* Dry eye symptoms are highly prevalent among the computer users, especially women and those with prolonged computer use and at least one high risk factor. Frequent blinking is very important when working at a computer, as is frequent face washing.

*Keywords:* Dry eye, prevalence, computer users

**12.66**  
ASSESSING FREQUENCY OF FOOD AND ENVIRONMENTAL ALLERGENS AND CORRELATING TOTAL IgE WITH SPECIFIC IgE

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**Objective:** The aim of this study is to assess the frequency of food and environmental allergens and correlating total IgE with specific IgE

**Methods:** The study population consisted of 88 individuals (male: 47 and female: 41). The study was conducted in the clinical laboratory, Department of Pathology & Microbiology, Aga Khan University Hospital from May 2009, till May 2010. Sera of patients positive for total IgE were tested for allergen specific IgE levels by Immulite 2000, 3gAllergy™

**Results:** There were a total of 27 allergens tested on 88 individuals having positive total IgE. We have analysed the data on two cutoffs of allergen specific IgE i.e. moderate (0.7-3.49 kU/L) and high (3.5-17.49 kU/L). The results suggest that in moderate reactivity the most common allergen from environmental panel was dog epithelium (46.6%), mites (33%), cockroach (17%) and from food panel was egg white (23.9%), milk (22.7%) and soybean (13.6%) but in high reactivity the commonest allergen was mites (6.8%), cockroach (4.5%), cat dander epithelium (3.4%), D.farinae (3.4%), molds (3.4%) and weeds (3.4%) from environmental panel and egg white (2.3%), peanuts (2.3%) and shrimps (2.3%) from food panel. At very high reactivity (>52.50 kU/L) most common environmental allergens seen were mites (2.3%), cat dander epithelium (1.1%) and common food allergens were shrimps (1.1%) and peanuts (1.1%).

**Conclusions:** Results generated from our study showed that there is high frequency of environmental and food allergies in our patients and total IgE levels are correlating with specific IgE levels.

**Keywords:** Total IgE, allergen specific IgE, 3gAllergy, cat dander epithelium, mites

**12.68**  
VALIDATION OF A FOOD FREQUENCY QUESTIONNAIRE FOR ASSESSING MACRONUTRIENT AND CALCIUM INTAKE IN ADULT POPULATION RESIDING IN KARACHI

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**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.

**12.69**  
BCG VACCINATION IS ASSOCIATED WITH DECREASED SEVERITY OF TUBERCULOSIS IN PAKISTAN

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**Background & Objective:** Vaccination with Bacille Calmette-Guerin (BCG) is given at birth to protect against tuberculosis (TB) in Pakistan. The country ranks 8th amongst high burden countries worldwide and has an incidence of 231/100,000 population. The objective was to determine the association between BCG vaccination and incidence of tuberculosis in adults

**Methods:** This was a cross-sectional multi-center hospital based study. TB patients (n=218) with pulmonary (PTB, n=120) or extrapulmonary (ETB, 98) were recruited and the presence of a BCG vaccination scar was documented. Cases were further classified into minimal, moderate and advanced PTB or less severe (L-ETB) or severe disseminated (D-ETB) disease. The association of age, gender and severity of TB infections with BCG vaccination of the individual TB cases was investigated.

**Results:** We found no difference the BCG vaccination status of PTB and ETB cases, or in relation to age or gender. Patients under 29 years of age comprised the largest group. There were more females TB patients with ETB than males. The largest group within ETB comprised tuberculous lymphadenitis (LNTB, 39%). A significantly greater number of LNTB cases had received BCG vaccination than had those with pleural (unilateral) TB (p=0.004), and tuberculous meningitis (p=0.027) groups. Also, there were more immunized patients in the PTB as compared with those with pleural disease (p=0.001).

**Conclusions:** LNTB represents localised granulomatous disease and the observation of higher vaccination rates in this group suggests that BCG has protected against more severe forms of TB in this high burden region.

**Keywords:** BCG, extrapulmonary TB; tuberculous lymphadenitis

### 13.1 ADRENOCORTICAL CARCINOMA PRESENTING AS UNUSUALLY HUGE RETROPERITONEAL MASS

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**Objective:** Adrenocortical carcinoma (ACC) is rare endocrine tumor presenting as huge abdominal mass with an annual incidence of 0.5–2 per million people. Most patients present at advance stage usually with metastasis. Resection of primary tumor and metastatic deposit with or without chemotherapy has proven role in management of ACC. Aggressive management may improve survival to some extent.

**Method:** Descriptive Case Report

**Results:** The authors report a case of 40 years old male presented with huge abdominal mass which on work up diagnosed to have adrenocortical carcinoma. He underwent surgical excision of the mass and had uneventful recovery. Patient is now on adjuvant mitotane therapy and tolerating it well. These tumors are well known to present as large masses but such a huge mass (32X 22X 17 cms, weighing 6800 gms) is not hitherto reported in literature.

**Conclusion:** ACC are huge tumors carrying high potential of recurrence and metastasis. Surgical resection is the mainstay of treatment while role of chemotherapy has yet to evolve.

**Keywords:** Adrenocortical Carcinoma, Adrenalectomy, Mitotane

### 13.2 ADULT KIDNEY BIOPSY: TEN YEAR EXPERIENCE FROM AGA KHAN UNIVERSITY KARACHI

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**Background:** Kidney biopsy is one of the essential component of renal work up in appropriate setting to reach the correct diagnosis and treatment planning. There are several kidney biopsy based studies available from other parts of the world but the data from Pakistan is scanty. Here we are presenting our experience of kidney biopsies at AKU. **Objective:** To determine the histopathological pattern of renal diseases in patients referred to Aga Khan University Hospital Karachi.

**Method:** This is a cross section study of adult native kidney biopsy done over ten year period. All biopsies were done in AKU hospital Karachi by a nephrologist or a radiologist. Biopsies sent from outside for reading only were not included. Transplant Kidney biopsies were excluded. Biopsies were read by the AKU histopathologists. Light microscopy and Immunofluorescence were used. Electron microscope was not available. **Results:** The most common histopathology, regardless of the indication of biopsy, was Tubulo Interstitial Nephritis in 67 patients (15%), followed by Membranous Nephropathy in 55 (12%) and then FSGS in 38 (8%) and MPGN in 36 (8%) biopsies. Diabetic Nephropathy was the pathology identified in 29 out of 62 diabetic patients who were subjected to biopsy for suspecting non diabetic kidney disease. The pathological pattern of 26 lupus patients included all classes of lupus

nephritis. Miscellaneous group includes those diagnosis which were only in one or two in number.

**Conclusion:** Tubulo Interstitial Nephritis, Membranous Nephropathy, FSGS, and MPGN were the most common histopathological diagnosis in adult patients presented to AKU for kidney biopsy. A sub analysis of various groups and their clinical correlation is required to get the full benefit of the data available.

**Keywords:** Kidney, AKU, Biopsy

### 13.3 CHARLSON COMORBIDITY INDEX: IMPACT OF COMORBIDITY IN PREDICTING 90 DAY SURVIVAL OF PATIENTS TREATED WITH RADICAL CYSTECTOMY

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**Objective:** To evaluate the impact of Charlson's comorbidity index (CCI) on 90 day mortality in patients undergoing radical cystectomy for urothelial cancer at a tertiary care hospital.

**Method:** This retrospective cohort study was conducted at section of urology. Patients, who had undergone radical cystectomy for urothelial cancer at AKU from 1989 to 2012, were included. Files were reviewed by a urology resident for Charlson's index and 90 day mortality. Logistic regression was used to determine association between Charlson comorbidity index and 90 day mortality.

**Results:** Total 175 patients were found eligible and reviewed. Baseline variables were comparable among the three categories of CCI. Mortality was significantly higher in CCI group 3 (33.3%) as compared to CCI groups 1 and 2 (4% and 3%) respectively. On multivariable logistic regression, the odds of 90 day mortality was 13 times higher in CCI 3 (13.6% with 95% confidence interval 3.3%, 56.1%).

**Conclusion:** Charlson comorbidity index (= 4) is a strong predictor of 90 day postoperative mortality in patients undergoing radical cystectomy.

**Keywords:** Charlson comorbidity index, Radical cystectomy, 90 day survival

### 13.4 CLINICAL PRESENTATION AND PRACTICE PATTERNS IN THE TREATMENT OF INTERSTITIAL CYSTITIS – A CLINICAL AUDIT

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**Objective:** To describe the clinical presentation and practice patterns for the diagnosis and treatment of interstitial cystitis (IC) in our setting and to compare it with current evidence.

**Method:** A retrospective chart review of all patients in our center having a clinical diagnosis of IC from 1990 to 2010 was performed. The patients' presenting symptoms, physical findings, clinical evaluation, treatment received and responses to therapy

were reviewed. A total of 72 patients were identified during the study who were considered to have interstitial cystitis by expert clinicians.

**Results:** Pain was the predominant symptom in 77% of the patients. Most commonly localized to bladder (38%) and pelvis (21%). Most common associated lower urinary tract symptoms were frequency (85%), followed by urgency in 50% of the patients. Ninety three percent patient had Cystoscopy and hydrodistention was employed in 19%. Various treatment modalities were used for the management of these patients over the study period. Most commonly employed oral therapy was anticholinergics (56%) and 16% patients received oral analgesics. Twelve patients were treated with intravesical Dimethyl Sulfoxide (DMSO) and 2 received intravesical combination of Heparin, Lidocaine and Sodium Bicarbonate.

**Conclusion:** Variable modalities were used for the diagnosis and treatment of interstitial cystitis. We suggest that a validated questionnaire should be used for assessment of response to therapy. A prospectively maintained database, based upon recent evidence, will ensure continuous audit cycle and adherence to recommended guidelines

**Keywords:** Chronic pelvic pain syndrome, interstitial cystitis

### 13.5

#### DEVELOPING NOMOGRAMS FOR “AGE, GENDER, AND VOIDED VOLUME DEPENDENCY OF PEAK URINARY FLOW RATE AND UROFLOWMETRY NOMOGRAM IN THE PAKISTANI POPULATION

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**Objective:** The objective of this study is to measure urine flow parameters (known as nomograms) by a non-invasive and simple test. Variation of flow rates based on voided volume, age, and gender are described. Different nomograms are available for different populations and racial differences of urethral physiology are described. Currently, there has been no study from the Pakistan population on uroflow parameters. So the purpose of this study is to establish normal reference ranges of maximum and average flow rates, and to see the relationship of age, gender, and voided volume with flow rates, and to chart these values in the form of a nomogram.

**Method:** Different age groups of the healthy population would include Males 16 to 50 year males (Group I) and > 50 year old males (Group II). Females 16-35 year old reproductive age group (Group Ia) and 36-50 pre-menopausal females (Group IIa), while group III would include >50 years old post-menopausal females. The uroflowmetry will be done using the gravimetric method. Flow chart parameters will be analyzed and statistical calculations will be used for drawing uroflow nomograms.

**Results:** We would keep a record of measured uroflowmetric parameters in normal subjects and would compare these parameters among different ages and genders. Correlations

between peak flow rate and other parameters would also be studied.

**Conclusion:** Nomograms will be drawn in centile form to provide normal reference ranges. Qmax (rate of maximum urinary flow) values for our population will be compared with other studies

**Keywords:** Flow rate nomogram, uroflowmetry, Pakistan population

### 13.6

#### ETIOLOGY AND MANAGEMENT OF ACUTE URINARY RETENTION IN FEMALE PATIENTS

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**Objective:** Introduction: Acute urinary retention is an uncommon but important problem in females (1). The causes can be variable including obstructive, neurological, post operative, pharmacological or psychogenic (2). The optimal work up and subsequent management is still in debate, (3) especially in our part of the world. This is the first study from Pakistan focusing on etiology and management of the subset of patients presented to us. This will help us to develop an algorithm for work up and management of these patients. Objective: To identify the causes of acute urinary retention (AUR) and its management in female patients presented at a tertiary care hospital.

**Method:** We performed a descriptive retrospective study including the women admitted in our hospital either with principal diagnosis of urinary retention or went into AUR during the hospital stay from Jan 2007 to Dec 2011. Total of 156 patients were identified from the hospital data base using ICD 9 CM. All those patients with incomplete records or missing follow up were excluded. 88 evaluable patients were analyzed using SPSS version 19. Medical charts were reviewed with special emphasis on medical history, physical examination and work up.

**Results:** The mean age of presentation was 47 +/- 21 years. More than half of the patients were admitted in obstetrics service with full term pregnancy, of them more than 80% went into retention either after episiotomy (90%) or LSCS (10%). Other causes identified in descending order are postoperative (18%), UTI (9%), Fowler's syndrome (8%), Neurogenic bladder (3%), constipation (3%), post radiotherapy (2%), cystocele (1%), urethral stenosis (1%) and urethral caruncle (1%). General physical, abdominal and pelvic examination was done in all patients. Urinalysis was done in all patients while urine culture and ultrasound KUB was done in nearly half of the patients. Urodynamic study (UDS) was done in selected patients only. All patients were initially managed with foley's catheterization; trial without catheter (TWOC) was successful in 69% while 22% had failed TWOC and 9% was never given TWOC. Subsequent course of patients with failed TWOC was successful voiding in 2nd attempt of TWOC in nearly 80%, rest of them were managed with CISC, long term foley's catheterization or supra pubic catheterization.

**Conclusion:** History and examination are key component for diagnosis. Urinalysis, culture and ultrasound KUB are optimal

base line investigation while UDS should be done in selected patients. Good post-operative pain control can prevent significant number of patients from AUR. Learning points: 1. Clinical assessment with base line investigations is of prime importance. 2. Post-operative pain control can significantly reduce AUR. 3. Selective group of patients require UDS.

**Keywords :** Urinary retention in female, Neurogenic bladder, Fowler's Syndrome

### 13.7 FREQUENCY OF HYPOPHOSPHATEMIA IN PATIENTS ADMITTING TO PEDIATRIC INTENSIVE CARE UNIT

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**Objective:** Hypophosphatemia is an under recognized disorder with potentially grave complications **Objective:** To determine the Frequency of Hypophosphatemia in Patients Admitting to Pediatric Intensive Care Unit

**Method:** All patients having age between 1 month and 16 years admitted in pediatric intensive care unit and found hypophosphatemic were identified by using ICD-10-CM E83.30 system from 2007 to 2011. Their medical record was reviewed for following data; basic demographic variables including age, gender and weight. Data for clinical variables including phosphorus level, time of developing hypophosphatemia, presence or absence of malnutrition (By weight for age less than 80% by Modified Gomez Classification), use of drugs (Steroids, Furosemide, Salbutamol, Dopamine), Presence or absence of Multiple organ dysfunction Syndrome, Length of Pediatric Intensive care unit stay, Length of mechanical ventilation, Extubation failure and survival or death was collected on structured data collection sheet. All patients were replaced with phosphate salts. Descriptive analysis was done using SPSS 19 version.

**Results:** The frequency of hypophosphatemia was 2.89 % (41/1417). Mean age was 7.2 years (range 1 month-16 years). Mean time for onset of hypophosphatemia was 3.95 days. Mean length of PICU stay and mechanical ventilation was 6.5 and 4.7 respectively. Majority of hypophosphatemic patients had infectious etiologies followed by gastrointestinal, respiratory, central nervous system disorder and miscellaneous group. Presence of multiple organ dysfunction syndrome was observed in 73 % (30/41) of patients. Moderate Hypophosphatemia was observed in 75 % (31/41) followed by severe Hypophosphatemia in 14 % (6/41) of patients. Most of the patients were not malnourished and those who had malnutrition were only had grade I malnutrition. 38% patients expired and 12% had extubation failure.

**Conclusion:** Hypophosphatemia is a common electrolyte imbalance in critically ill children and it results in significant morbidity and mortality and early detection and correction could result in improved survival and less complications.

**Keywords:** Hypophosphatemia, Pediatric intensive care unit

### 13.8 HISTOPATHOLOGICAL PATTERN IN IDEOPATHIC NEPHROTIC SYNDROME : A SINGLE CENTER STUDY FROM PAKISTAN

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**Background:** Nephrotic Syndrome is among the most common indications for renal biopsy. It is essential to have tissue diagnosis in nephrotic patients for correct treatment planning. There are several studies available from other countries, however, there is no data published from Aga Khan University on this important topic.

**Objective:** To determine the histopathological pattern of kidney diseases in patients who presented to Aga Khan University Hospital Karachi with nephrotic syndrome.

**Method:** Ten year kidney biopsy data was reviewed to select the patients whose indication of kidney biopsy was nephrotic syndrome. Systemic diseases known to cause nephrotic syndrome including DM, lupus, amyloidosis as well as transplanted kidneys were excluded. All biopsies were done in AKUH Karachi and read by Pathologists of AKU. Light Microscope and Immunofluorescence were used. Electron Microscope was not available. The whole group was divided into two on the basis of age for subanalysis.

**Results:** Total of 128 patients were identified, 85 male and 43 female. Age range : 16 to 77 years with mean of 37 and SD 15. The most common overall diagnosis was Membranous Nephropathy. (Table 1) On subgroup analysis, in younger age group (Table 2) the most common diagnosis were Minimal change disease and Membranous. In older age group (Table 3) the most common pathology was Membranous. **Conclusion:** The three diseases i.e. Membranous, FSGS and Minimal change stand out as the most common identities in nephrotic adult patients at AKU. It is very interesting that our results are remarkably similar to those from other Asian and Western Countries.

**Keywords:** Nephrotic, Pathology, AKU

### 13.9 IMAGE GUIDED OUTCOME OF ANTEGRADE URETERIC STENTING.

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**Objective:** The objective of this study is to evaluate the percentage of success, complication and failure rate of Double J stent placement in radiology.

**Method:** This was retrospective study conducted in radiology department of Aga Khan Hospital. Data was collected from January 2011 to October 2012 which comprises of 36 patients. We have excluded all the patients who were unfit for interventional procedure.

**Results:** In this study 36 patients were taken, 18 were female and 18 were male. Among these 4 patients have obstructive uropathy, 6 have ureteric stricture, 4 patients have ureteric calculus, 4 have hydronephrosis, 2 have colonic carcinoma, 1

patient has nephrolithiasis, 1 has Ca breast, 1 has ureteric injury 2 patients have Ca prostate, 3 has bladder mass, 3 has rectal Ca, 1 with Ca ovary, 1 has post augmentation cytoplasty, 1 has Post TURP and 2 patients have carcinoma cervix. Bilateral DJ stenting was done in 5 patients whereas unilateral DJ stenting done in 31 patients. Among these 31 cases 17 stented on right side and 14 were on left side. DJ stent were successfully placed in 31 cases with mild to moderate extravasation in 3 cases while in 2 cases stent placement were failed due to tight stricture in distal ureter. Bilateral DJ stent were successfully placed in 2 patients without any complication whereas in 3 patients stent were placed unilaterally 2 on left side and 1 on right side and we have failed to place stent on other side due to tight narrowing and attempted later on and was successful.

*Conclusion:* Antegrade DJ stenting is a safe and effective procedure where retrograde procedure is not possible or difficult. Complication rate in our department fall well within the internationally described range.

*Keywords:* Antegrade, retrograde, complication

### 13.10 IS ABBERENT HISTOLOGY OF BLADDER CANCER ALWAYS CALLS FOR CYSTECTOMY?

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*Objective:* Urothelial carcinoma has established propensity for divergent histopathology which has different clinical course and survival outcome as shown in literature. The aim of this study is to asses the clinical outcome in different variants of bladder tumor.

*Method:* Between Jan 2011 to Jun 2012, 6 out of 79 patients were diagnosed to have divergent histology of bladder carcinoma on transurethral resection of bladder tumor (TURBT) specimen. For the purpose of analysis 6 patients were divided in to 2 groups (RC and supportive treatment group). Supportive treatment group comprise of 3 patients, referred for possible palliative chemoradiation but due to overall poor health & performance status they were only given supportive care. Statistical analysis by SPSS v19

*Results:* Out of 6 patients, 4 were females. Mean age of patients was 65 +/- 19 years. 3 patients underwent radical cystectomy & ileal conduit formation while remaining 3 patients were in supportive treatment group. Metastasis & mortality was found relatively earlier in supportive treatment group but was not found to be statistically significant ( $p=0.7$  &  $p=0.1$ ). Kaplan Maier survival estimate showed statistically significant difference between 2 groups ( $p=0.036$ ).

*Conclusion:* Patients with divergent histopathology of bladder tumor tend to have high rate of disease related morbidity, metastasis and mortality. Early cystectomy in selected patients may improve overall survival.

*Keywords:* Abberent histology of bladder cancer, Radical cystectomy, Divergent histology

### 13.11 PEDIATRIC RENAL CELL CARCINOMA; REPORT OF THREE CASES WITH DISTINCT HISTOLOGY: TRANSLOCATION XP11 / TFE3 EVALUATION IS NECESSARY OR ANCILLARY?

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*Objective:* Renal carcinoma associated with Xp11.2 translocation/TFE3 gene fusions has been recently identified and added to the recent World Health Organization (WHO) classification. These are rare tumors predominantly affecting children (1/3rd cases of RCC), but it may occur in adult patients. To date, there have been approximately 160 reported cases of this subtype. The mean age in published cases is approximately 25 years; the median age is 20 years. Macroscopically, the tumor is well encapsulated with multiple friable mural nodules on its inner surface.

*Method:* In recent years three cases were reported in patient aged 2.5, 12 and 7 year old respectively with the same distinct morphology and Immunohistochemical features as that of translocation carcinoma.

*Conclusion:* Demonstration of translocation may not be required in every case with distinct morphology and TFE3 immunohistochemistry may be less reliable than reported in the literature with numerous false positives. Lack of, or minimal, cytokeratin and EMA expression may be the most helpful immunophenotypic findings. Debate still goes on regarding the biological behavior of the translocation RCC in children and young adults. Whereas some series have suggested a good prognosis when RCC is treated with surgery alone despite presenting at a higher stage (III/IV) than TFE-RCC, a meta-analysis reports that these patients have poorer outcomes. Recurrences have been reported 20 to 30 years after the initial resection of the translocation-associated RCC.

*Keywords:* Translocation, renal cell carcinoma, case report

### 13.12 ROLE OF URODYNAMICS IN PATIENTS UNDERGOING TURP

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*Objective:* Lower urinary tract symptoms are the 2nd most common cause of urology consultation. Over the last 2 decades there has been a change in our understanding of the pathogenesis of lower urinary tract symptoms with more focus on bladder. This has been reflected in the changing pattern of evaluation for LUTS with increasing use of uroflowmetry and invasive urodynamics. Pressure flow studies are considered the gold standard for diagnosing bladder outlet obstruction. Although such evaluation is required only for a fraction of patients undergoing TURP. The aim of this study is to evaluate whether

urodynamics help in deciding the management of such patients and determining the outcome of TURP

*Method:* we retrospectively reviewed all patients between January 2002 and December 2011 who had invasive urodynamics before undergoing TURP. Data collected online spreadsheet and analysed using SPSS version 17. Factors correlating with successful outcome of TURP analysed.

*Results:* Out of 2145 patients who underwent TURP 97(4.5%) had invasive urodynamics. seventy two patients were included in the study. Most common indication of Urodynamic evaluation was urinary retention (50/72). Rate of success of TURP was 83% as determined by catheter free status and symptom improvement after TURP. Detrusor pressure (Pdetmax) on pressure-flow study predicted with success of TURP. Type of retention (painful vs painless), volume of residual urine, presence of Diabetes and other neurological disorders does not correlate with outcome. Suprapubic catheter was placed in 20 patients who had a mean maximum Detrusor pressure of 49.86, 11 of these patients remained catheter dependent.

*Keywords:* TURP, Urodynamics, Male lower urinary tract symptoms

### 13.13

#### URINARY RETENTION IN FEMALES: IS IT A REAL PROBLEM?

*Mehwash Nadeem, Tahir Yaseen, Nuzhat Faruqui*  
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*Method:* We performed a descriptive retrospective study including the women admitted in our hospital either with principal diagnosis of urinary retention or went into AUR during the hospital stay from Jan 2007 to Dec 2011. Total of 156 patients were identified from the hospital data base using ICD 9 CM. All those patients with incomplete records or missing follow up were excluded. 88 evaluable patients were analyzed using SPSS version 19. *Results:* The mean age at presentation was 47+/-21 years with mean follow up of 7 days. 54% of the patients were admitted in obstetrics service with full term pregnancy, of them about 80% went into retention either after episiotomy. Urinalysis was done in all patients while urine CS & U/S KUB was done in 51% patients. Urodynamic study was done in selected patients only. All patients were initially managed with foley's catheterization trial without catheter was successful in 69%, others required additional workup

*Conclusion:* History and examination are key component for diagnosis. Urinalysis, culture and ultrasound KUB are optimal base line investigation while UDS should be done in selected patients. Good post operative pain control can prevent significant number of patients from AUR.

*Keywords:* Urinary retention, urodynamic study, catheterization

### 13.14

#### UROLITHIASIS – CHEMICAL ANALYSIS THROUGH A DECADE 2001 TO 2010

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*Karachi*

*Objective:* The incidence of urolithiasis has been inexorably increasing in different parts of world and we are lacking such data due to non-availability of a proper registry system related to this disease in our country. Thus we explored a large laboratory data to determine frequency of urolithiasis during and over a decade of the urinary stones submitted for laboratory analysis.

*Method:* A retrospective review of all tests requested for urinary stone analysis at the Clinical laboratory of the Aga Khan University Hospital, Karachi, a referral laboratory in Pakistan, from January 2001 to December 2010 was conducted. Diasys reagent kits were used for semi-quantitative determination of the various components of stones. Calcium, oxalate, phosphate, magnesium, ammonium, uric acid and cysteine were various components of stone reported.

*Results:* Total of 36,203 stones were received for 9154 patients over ten year period. The age range of the patients was 0-95 years with mean age 34.14±15.79 years. Of the 9154 stone patients studied, 7571 (82.7%) were males while others, 1583 (17.3%) were females. Calcium was present in all stones. Oxalate, phosphate, uric acid, ammonium, cysteine and magnesium were present in 93.2%, 81.6%, 24.3%, 0.5%, 0.2% and 0.2% stones respectively. The incidence of submitting urinary stone analysis in year 2001 was 6.5% which was increased to 15.5% in year 2010. The overall male-to-female ratio was 4.78 and the most frequent stone type reported was mixed calcium oxalate phosphate stone 64.6%.

*Conclusion:* There was increase submission of urinary stones during ten year period. Male preponderance was found in stone disease however trend is slightly changed with decrease in male to female ratio.

*Keywords:* Frequency, stones, urolithiasis



#### 14.2 CMV PNEUMONITIS IN A PATIENT WITH SMALL LYMPHOCYTIC LYMPHOMA

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**Objective:** SLL is a mature (peripheral) B cell neoplasm monoclonal in origin it is an indolent disease, survival time from initial diagnosis range from 2 to 20 years, and a median survival of 10 years. CMV pneumonitis is a common presentation of CMV disease in immunocompromised patients. Respiratory failure is the leading cause of death among patients with rapidly progressive interstitial pneumonitis related to CMV. We report a case of CMV pneumonitis in a patient diagnosed and treated for SLL.

**Method:** 45 year old male, diagnosed in 2006 to have small lymphocytic lymphoma, initially received FCR but disease relapsed started on rituximab and bendamustine, followed by maintenance bendamustine, presented with two months history of worsening shortness of breath and worsening cough, and fever. He was started on broad spectrum antibiotics, subsequently underwent bronchoscopy, lavage showed acinetobacter, he was continued on broad spectrum antibiotics but had persistent fever, eventually underwent open lung biopsy to determine the cause, blood CMV PCR was negative, his hypoxemia worsened, and subsequently got intubated, developing ARDS, his biopsy specimen showed "lymphoid infiltrate seen with immunohistochemical features favouring Small Lymphocytic Lymphoma and Prominent intranuclear viral inclusion bodies consistent with Cytomegalovirus Pneumonia". He was started on valgacyclovir, later developed pancytopenia, bone marrow showed leukemic infiltrate. Due to his worsening condition and poor progression of disease it was decided by the family, ICU team and primary oncologist.

**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:** CMV pneumonia, SLL, immunosuppressed

#### 14.3 ECTOPIC THYROID FOLLICULAR LOW GRADE CARCINOMA IN THE THORACIC INLET PRESENTING WITH TRACHEAL COMPRESSION AND ITS SUCCESSFUL RESECTION

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**Case Report:** 42 yr old man presented with progressively increasing stridor for one year. He did not follow medical advice and was lost to follow-up. He presented in the Emergency room with shortness of breath and extreme stridor and inability to even lie flat. The CT Scan six months earlier showed a 7 by 6 cm mass at the thoracic inlet which was compressing the trachea. The stenosis was more than 80% even on the CT scan 6 months earlier. No further scans were possible. Patient was urgently taken to the OR and a small 6 size ET tube was placed via flexible bronchoscopic guidance. Via left posterolateral

thoracotomy, the mass was identified at the thoracic inlet compressing the trachea and encroaching the left subclavian artery and left carotid artery. With careful dissection the entire mass was removed. There was no invasion of any structures. The postoperative course was unremarkable. Patient's stridor recovered completely and his shortness of breath resolved. The histopathology showed ectopic thyroid tissue with follicular carcinoma. Patient was advised total thyroidectomy but he again got lost to follow-up.

**Conclusion:** Mediastinal tumors causing tracheal compression are common but ectopic thyroid carcinoma presenting as tracheal compression with no other evidence of disease anywhere else, is rare. Treatment is complete resection of all thyroid tissue followed by radioactive iodine ablation.

**Keywords:** Follicular, stridor, mediastinum

#### 14.4 FAMILIAL IDIOPATHIC PULMONARY FIBROSIS IN 28 YEAR OLD MALE

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**Objective:** IPF is defined as a specific form of chronic, progressive fibrosing interstitial pneumonia of unknown cause, occurring primarily in older adults, limited to the lungs, and associated with the histopathologic and/or radiologic pattern of UIP. Patients with IPF aged less than 50 years are rare. Familial forms of IPF, i.e., those affecting two or more members of the same primary biological family, account for less than 5% of total patients with IPF. Here we present a patient with familial IPF.

**Method:** A 28 year old patient with 1 year history of cough, worsening shortness of breath, on examination he had finger clubbing and bibasilar crackles on auscultation of chest, he was on steroids and azathioprine for 6 months, his brother 2 years younger than him recently died of the same lung problem as per the patient, he was found of the disease and died in a year. His HRCT and lung biopsy was also consistent with UIP. Hence he was diagnosed as IPF.

**Results:** The most likely mode of genetic transmission in familial IPF cases is autosomal-dominant with variable penetrance, linkage with chromosome 14 has been suggested. More strong associations with familial IPF have been found with mutations in the surfactant protein C gene. Lung transplant remains the only therapeutic option and must be considered early in younger patients.

**Keywords:** Familial IPF, Lung transplant

#### 14.5 HAIR PIN IN THE BRONCHUS INTERMEDIUS AND ITS SUCCESSFUL EXTRACTION

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**Case Study:** 40 year old woman presented with history of continuous dry cough for 24 hours. According to the patient, she was picking her nose 24 hours earlier with a hair pin and

while doing it, she sneezed and the hair pin went inside her throat and disappeared. Following this, she complained of coughing continuously. Chest X-ray was obtained which showed hair pin in the right lung. Flexible and rigid Bronchoscopies were performed and it was found that the hair pin is lying in the right bronchus intermedius. The sharp ends were proximal. With a challenging rigid bronchoscopic approach, the entire hair pin was removed with no injury to the trachea-bronchial tree. Patient then had an uneventful post-operative recovery.  
*Conclusion:* foreign body aspirations in lungs are common but to have a long large hair pin reaching the bronchus intermedius from the nose is not reported previously. The treatment of choice is removal via rigid bronchoscopy or if not possible removal via open thoracotomy.

*Keywords:* Foreign body aspiration, xray, hair pin

#### 14.6

##### LARGE TRACHEO-ESOPHAGEAL DEFECT FOLLOWING PROLONGED INTUBATION AND ITS SUCCESSFUL TREATMENT

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*Case Study:* She is a 25 year old woman who had prolonged intubation secondary to dengue fever complications eight months ago following which she developed large trachea-esophageal defect. This was confirmed with esophagoscopy, bronchoscopy and delineated with CT neck. She was transferred to AKUH in this condition and it was decided to undertake this repair with consultations from ENT and general surgery. In the OR, she had a horizontal neck incision and upper sternotomy and the defect was exposed after meticulous dissection. The esophagus was repaired primarily and the posterior wall of the trachea was repaired with myocutaneous flap of left pectoralis major. That means now the posterior wall of the trachea was made of her breast skin. Feeding jejunostomy, gastrostomy and tracheostomy was done. Patient had a very challenging course post-operatively which was marked by acinetobacter pneumonia. Patient recovered completely and after discharge became ambulant and was able to talk and eat from her mouth. Two esophagrams were obtained at regular intervals which turned out to be normal. Patient did well post-operatively. I

*Conclusion:* atrogenic trachea-esophageal defects are rare and very difficult to manage. They usually require very aggressive post-operative management due to infections and have a very high chance of dehiscence

*Keywords:* Trachea, esophagus, fistula

#### 14.7

##### LEFT PERSISTENT SUPERIOR VENA CAVA; A CASE REPORT

*Saima Kamal  
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*Objective:* Persistent left superior vena cava is a rare congenital vascular anomaly; however it is the most common congenital anomaly of thoracic venous system with a prevalence of 0.3–0.5% in general population and in up to 12% of individuals with other documented congenital heart abnormalities. It is usually asymptomatic and is detected when cardiovascular imaging is performed for unrelated reasons

*Method:* A 51 year old male with hypertension and CVA, presented to the ICU with acute kidney injury requiring resuscitation, during which a central venous catheter was inserted in the left internal jugular vein, subsequently a chest x-ray was repeated. The course of the CVC was unusual, so there was a query of PLSVC, ECHO was done which showed dilated coronary sinus, findings on agitated saline injection from left arm suggested the diagnosis of PLSVC. He did not have any other structural heart defect. Thus the chest x-ray obtained revealed the passage of the central venous catheter through the LSVC into the right atrium

*Conclusion:* Presence of a dilated coronary sinus on echocardiography should alert the clinician towards the possibility of PLSVC. The diagnosis should be confirmed by saline contrast echocardiography. Cardiologists and critical care physicians should consider presence of PLSVC whenever a catheter or guide wire inserted via left subclavian vein takes an unusual left-sided downward course. A PLSVC certainly presents technical difficulties with right heart access via the left subclavian or internal jugular vein, but does not preclude insertion of catheters; however, the additional associated risks should be discussed with the patient if the diagnosis of PLSVC is already established, and alternative access sites should be considered.

*Keywords:* Persistent, superior vena cava, line insertion

#### 14.8

##### VIDEO-ASSISTED THORACOSCOPIC SURGERY (VATS). A NOVEL APPROACH IN THE MANAGEMENT OF THORACIC EMPYEMA IN OUR PART OF THE WORLD. A DECADE LONG EXPERIENCE AT A TERTIARY CARE HOSPITAL IN PAKISTAN

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*Background:* Traditionally non resolving thoracic empyema which cannot be managed with tube thoracostomy is usually treated via posterolateral thoracotomy which required increased pain medications and increased number of hospital stay. Video-assisted thoracoscopic surgery (VATS) is a novel minimally invasive operative technique for the management of thoracic empyema and its use is becoming more widespread in most parts of the world. Here we present our experience of 483 patients

who underwent VATS for diagnostic or management purposes. Methods: Between January 1, 2001 to January 1 2011, 483 patients underwent VATS at the Aga Khan University Hospital for management of the empyema. Their charts were reviewed and data was collected regarding demographics, co-morbidities, postoperative pain requirements, post-operative ICU stay, chest tube requirements, transfusion requirements and total hospital stay. Results: The age range of these 483 patients who had VATS for empyema was between 3 months – 92 years. The indication of VATS in all these patients was multiloculated empyema secondary to bacterial infection. None of the tuberculous empyemas were treated with VATS or included in this study. Initial tube thoracostomy was tried in 75 of these patients. In remaining patients the VATS was done as a primary treatment for empyema. 60 % of these patients had CAT Scan prior to surgery. The VATS was converted to open thoracotomy in 26 patients—in 21 patients for dense adhesions and inability of the lung to expand completely after VATS decortications and in 5 patients for bleeding. In all patients, we had complete evacuation of pus and loculi and near total expansion of the lung. There were no postoperative mortality in any of the patients who underwent VATS successfully. Average hospital stay was 4 days and all patients were discharged with empyema tubes. No patient who successfully underwent VATS required epidural catheter. The average return to full activity was three weeks. Conclusion: VATS is an excellent approach to the management of empyema especially in our setting. The potential benefits are decreased post-operative pain, decreased hospital stay and earlier return to work and therefore less financial burden.

*Keywords:* Vats, empyema, chest

#### 14.9 TOBACCO SPENDING TRENDS AND TOBACCO CONTROL POLICY IN PAKISTAN

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*Objective:* Raising taxes on cigarettes is considered a key control strategy; however its effective implementation requires a thorough understanding of national spending on all forms of smoking by the various strata of the society. Nationally representative estimates on household spending on tobacco are generally not available, particularly from developing countries. *Method:* The present study analyzed household level spending on all types of tobacco reported in nationally representative data from Pakistan. This study determines the expenditure patterns of tobacco by province, urban/rural areas and living standard quintiles. This study also estimates the concentration index of tobacco spending to household total spending. *Results:* Among 15453 household in the survey, 8687 household (56.22 %) reported tobacco expenditure of any type. Total household tobacco expenditure in Pakistan was Pak Rs (PKR). 8.76 billion (US\$ 146 million) in the year 2005-06 with median expenditure of PKR. 120 [\$1.99]. The households in the provinces

of Punjab and Sindh are spending twice of their proportionate income on tobacco than other provinces. Urban areas are spending more than rural. Cigarette/ Beeri expenditure is concentrated in poor segments of society (Concentration Index - 0.23) and Raw/Chewing Tobacco/Naswar is concentrated in rich segments of the society (Concentration Index 0.40).

*Conclusion:* Tobacco spending and pattern varies significantly by province, urban /rural and living standard in Pakistan. A uniform tax policy on tobacco is likely to affect only a group of society that uses smoking tobacco, lives in urban areas and belongs to lower living standard quintiles. The estimates provided in this study opens new avenues for combining epidemiological research with economic burden of tobacco to devise a comprehensive tobacco control policy.

*Keywords:* Tobacco taxation, economics

#### 14.10 VASCULAR INTERVENTION IN LIFE THREATENING HEMOPTYSIS- EMBOLIZING THE BLEEDER VESSEL

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*Objective:* To review the cases of hemoptysis in whom embolization was performed. To present the data regarding different vessels involved in our setup, embolizing agents used and to evaluate the outcome and complications. *Method:* This was the retrospective study done in Radiology department of Aga Khan University and Hospital. The data was taken from Jan 2009 to Dec 2011. We have taken all the patients who came with the complain of massive hemoptysis in our department during these three years.

*Results:* In our study we had 23 patients all 23 patients had bronchial artery and non bronchial contributing to the hemoptysis. Among those 23 patients we had successfully embolization in 21 patients. In 2 patients embolization couldn't be performed due to the failure in cannulation of bronchial arteries. Among those 21 patients, eleven patients had only bronchial artery supply without contribution from non bronchial systemic arteries. Remaining 10 patients had mixed arterial supply from bronchial and non bronchial arteries. A total of 29 arteries were embolized. Total 10 non bronchial arteries were contributing the massive hemoptysis. The breakup of non bronchial arterial contribution are, 05 intercostal arteries, 04 internal mammary arteries and 01 aortic collaterals.

*Conclusion:* In our study nearly half of patients had non bronchial systemic arterial source of their hemoptysis. Therefore it is important to search for non bronchial arterial contribution in cases of massive hemoptysis when performing endovascular embolization.

*Keywords:* Hemoptysis, bronchial artery, embolization

**14.11****YIELD OF FUNGAL SMEAR IN ROUTINE BAL**

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**Objective:** Broncho Alveolar lavage (BAL) for microbiology is useful investigation tool for detecting microorganism causing pneumonia. BAL is usually sent for gram Stain; AFB smear and culture and /or Fungal smear and culture depend upon underlying Lung disease. Yield of fungal smear and culture in bronchoscopy is being studied<sup>1</sup>. The objective of this study to look for yield of fungal smear and culture on BAL from period of last year.

**Method:** Clinical records of all cases of bronchoscopy /BAL were reviewed for fungal smear and culture during period of 2011-2012. During the study period identification of patients from medical record data for bronchoscopy has been reviewed. Data was analyzed for yield of positive result

**Results:** Two seventy three cases were identified, that were booked for bronchoscopy during the period 2011-2012. Out of these BAL sent in 273 patients for complaints of Fever, cough and sputum /hemoptysis, nonresolving pneumonia or suspicious of malignancy .Fungal smear positive in only 16 cases (5%) and culture were positive in 29 cases (10%).16 cases (5%) have both smear positive with culture positive .Only 5 (1.8%) were of clinically significant required treatment. *Aspergillus Fumigatus* was most common fungal growth 2 out of 6 followed by *Aspergillus Niger*, *A. Terreus* (2 cases) .*A. Flavus* and *Absidia* species. Most important risk factors were underlying malignancy (hematology 3 cases) followed by chronic steroid administration in 1 patient (%) and prior h/o pulmonary tuberculosis 1 patient (%) and 1 patient have diabetes/CKD&IHD

**Conclusion:** We report no significance in sending routine sample for fungal smear and culture in BAL .So patient`s cost can be reduced by avoiding unnecessary investigation. Fungal smear and culture have high yield in underlying malignancy specially hematology and /or an immunocompromised status or underlying structural lung disease.

**Keywords:** BAL, Fungal smear

### 15.1

#### AGAROSE-PARAFFIN: A STABLE MATRIX FOR TISSUE MICROARRAY

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**Objective:** Tissue microarray (TMA) is a high-throughput technology used to assess histology-based laboratory tests, including immunohistochemistry (IHC) and fluorescent in situ hybridization (FISH). Small cylindrical tissue cores are extracted from standard formalin-fixed, paraffin-embedded tissue and arranged in an array configuration within a recipient block, thus facilitating rapid analysis of hundreds of patient samples on a single slide. The major limitation of producing a fully automated TMA is its cost especially the premade recipient block. We prepared an agarose paraffin based matrix in our laboratory that allows the melting of paraffin without disturbing the tissue array.

**Method:** Agarose gel (2%) was dehydrated, infiltrated with molten paraffin followed by embedding. TMA was constructed using tissue micro arrayer (UNITMA). Agarose paraffin recipient block was re-embedded in paraffin. H&E staining was performed on 5µm thick sections.

**Results:** The processed agarose paraffin was transformed into a semi solid dense and stable matrix, providing enough support to the tissue cores to remain tightly inserted into the matrix holes. This is in contrast to paraffin only base in which array gets disturbed upon melting. The resulting matrix can withstand temperature up to 70 °C for about 20 hours and facilitated sectioning using conventional microtome.

**Conclusion:** The method described may serve as an alternate to the commercial premade recipient blocks which are considerably expensive. However, further work is underway to improve its quality and utility.

**Keywords:** Tissue microarray (TMA), agarose paraffin matrix, TMA recipient block

### 15.2

#### COMA: A NEW BIOINFORMATICS TOOL FOR CO-OCCURRING MUTATION ANALYSIS

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**Objective:** Spontaneous and induced mutations in DNA/RNA are part of a natural biological milieu. For an organism to survive, at times two or more mutations have to simultaneously co-occur in the same or two different gene(s). In pathogens, for example, antigenic mutations necessary for escaping the host immune response will likely co-occur with compensatory mutations that help in maintaining the structural integrity of the antigenic protein. Similarly, simultaneous co-occurrence of mutations in one or more tumor suppressor genes is a well-established phenomenon in the pathogenesis of cancer. Here, we present a new Bioinformatics software that allows the analysis of co-

occurring mutations in nucleic acid and protein sequences.

**Method:** COMA is a Java-independent operating system, that was written in C-language environment. The software was based on the 'weight-matrix' approach. The software in the first step enumerates the number of mutations at every position of given in input sequences (nucleotide or protein) crossing the first user-selected threshold. In the next step, the user selects a mutation of interest from the list of mutations. This selection directs the back-hand pointers to keep sequences having the mutation of interest, while sequences lacking the particular mutations are removed. In the second step, software constructs a mutational-matrix and performs a bi-directional horizontal scanning to compute the proportion of all other mutation present in the remaining sequence, in relation to the mutation of interest. The second user-selected threshold selects only those output values crossing the threshold for display. The software can develop a numeric association between mutations within a same gene/protein in 1-Fragment comparison and/or two different genes/proteins in the 2-Fragment comparison.

**Results:** COMA is a user-friendly software tool that offers the ease of processing, has minimal setup requirements, and is simple to use. 1-Fragment comparison and 2-Fragments comparison, respectively, analyzes numerically significant co-occurring mutations within similar or within two dissimilar-but interacting or linked-nucleotide or protein sequence. The results are displayed in 'Tabular format' on a separate page, which shows the proportion of all mutations in input sequences, in relation to the mutation of interest. The software has been tested using several data sets and co-occurring mutations were efficiently identified without any errors.

**Conclusion:** COMA provides an efficient way to analyze co-occurring mutations in nucleic acid or protein sequences.

**Keywords:** Co-occurring mutations, Protein sequences, Nucleic acid sequences

### 15.3

#### DEMONSTRATION OF MICROBIOLOGY LABORATORY SESSIONS THROUGH VIDEOS: AN EFFECTIVE TEACHING STRATEGY

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**Objective:** Demonstration is an effective method of instruction for Health Sciences students as it provides them the opportunity to see and hear the details related to the skill being taught. Baccalaureate Nursing students take three credit Microbiology course with laboratory component in their first year of studies. In order to explore the effectiveness of use of videos of instructions for students to perform basic Microbiology procedures in lab pre-recorded videos were used for teaching as a pilot project.

**Method:** Videos of experiments were recorded by the course team to cover the details of each step of the procedure at the Science lab of School of Nursing. These videos of demonstrations were used as teaching strategy during Microbiology lab sessions of 50 BScN students. Instead of live

**Results:** The effectiveness of the video was assessed in terms of student's feedback. 78% students strongly agreed that video tapped demonstration is an effective teaching tool to visualize

the concepts where as 22% only agreed on it. Majority (60-64%) of the students strongly agreed that the video demonstration sustained the interest, helped in remembering the details of steps, gave better understanding of procedure and greatly assisted in application of the knowledge.

*Conclusion:* The use of videos of demonstration is an effective strategy to teach skills which greatly enhance student's learning due to better visualization of the steps. This facilitates students to repeat the steps of the procedure with minimum errors which is a key requirement from health care providers. Final assessment of students' performance will further assist in measuring the effectiveness and future use of videos in the laboratory sessions

*Keywords:* Teaching innovations, video demonstrations, health sciences nursing educators

#### 15.4

##### DEVELOPMENT AND PILOT TESTING OF A NEW ACUTE PEDIATRIC INJURY COURSE FOR AMBULANCE PROVIDERS IN KARACHI, PAKISTAN

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*Objective:* Appropriate and timely provision of pre-hospital care is critical for improving outcomes to injury and trauma. Pre-hospital providers in Pakistan as in most low and middle income countries (LMIC) do not receive standardized pediatric-specific training in evidence-based acute pediatric care. Objective Develop an Acute Pediatric Injury Care (APIC) course tailored to the local context and pilot test the course in ambulance providers in Karachi, Pakistan.

*Method:* APIC, a combination didactic and practical exercise-based course, was developed using existing validated international course materials and modifying them to the local context in collaboration with local pediatric and emergency care providers. The course was piloted in 24 ambulance providers who were asked to complete pre and post-course knowledge assessment tests and a 3 month follow up knowledge retention test. *Results:* Upon course completion, students exhibited a statistically significant knowledge gain (57.9% in the pre-test to 73.9% in the post-test,  $p < 0.001$ ). Of the 19 students completing the knowledge retention test, students exhibited statistically significant gain in knowledge in the area of airway management/respiratory distress (56% to 74%,  $p = 0.027$ ), and a trend towards increased knowledge in shock (42% to 68%,  $p = 0.06$ ), fluid administration (74% to 95%,  $p = 0.13$ ) and trauma resuscitation (74% to 84%,  $p = 1.0$ ).

*Conclusion:* The APIC course provided ambulance providers in Pakistan with important knowledge gains in pediatric-specific acute care, particularly in the area of airway management and respiratory distress. Further studies are needed to roll out this course to a wider audience and to assess the impact of such courses on actual outcomes of pediatric injuries and trauma

*Keywords:* pediatric, pediatric injury

#### 15.5

##### ESTABLISHING LARGE SCALE SURVEILLANCE IN LOW INCOME COUNTRIES, PAKISTAN

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*Objective:* Basic information on emergency department (ED) patients is critical for detecting emerging infections and monitor disease patterns for informed decisions on resource allocation, and research. Pak-NEDS aimed to pilot test a model surveillance system in Pakistani EDs which could fill this gap. *Method:* The surveillance model was pilot tested for duration of four months (December 2010 – March 2011) in seven major tertiary care centers in all four provinces of Pakistan. These centers included 5 public and 2 private hospitals having a collective annual census of over one million patients. Active surveillance was done by designated teams and information on basic demography, presenting complaints, pre-hospital care and history, investigations, procedures and outcomes was collected from all patients presenting to the EDs of these institutes. *Results:* Pak-NEDs registered 267455 patients achieving a total coverage of 87.5%. Coverage ranged from 76% to 98.5% with higher coverage levels in private institutions. Major limiting factors for complete coverage included high patient flow, patient refusals to participate, lack of cooperation from staff and high resource requirement of active surveillance. Institutions where the hospital staff collected the data themselves combined with lower patient flows achieved the highest coverage levels. *Conclusion:* Policy changes promoting uniformity of basic information collection and service provision across institutes is necessary for successful national ED databases. Ownership of the surveillance system combined with technology usage can improve the surveillance coverage and sustainability.

*Keywords:* Emergency medicine, surveillance, Pakistan

#### 15.6

##### INCIDENCE OF ABO AND RH DISCREPANCIES IN PATIENTS AND BLOOD DONORS IN A TERTIARY CARE SETTING

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*Objective:* An ABO discrepancy occurs when forward and reverse typing do not match. It is important that all ABO and Rh discrepancies must be resolve before blood products can be released for transfusion and before labeling the blood group on the blood donations. Testing performed may range from repeating the ABO forward and reverse typing to increasing the ratio of reagent to sample, altering the incubation temperature, increasing incubation times, adsorptions, elutions, inhibitions and determination of secretor status or a family study in the case of a very rare subgroup.

*Method:* This study was conducted from Jan 2010 to Sep 2011 at the AKUH blood bank, All the blood groups were determined by Gel-Card technique. Discrepancies were performed on

conventional tube method using commercially prepared ABH, A1 and A,B antisera for ABO forward grouping and D (IgG/IgM) for Rh confirmation. Known red cells were utilized for reverse blood grouping. •Cases of ABO discrepancy were further tested by “Adsorption & Elution “ 1 method for confirmation “D” antigen weak-D testing was done parallel with control. “Choloroquine-diphosphate” treatment was utilized for positive weak-D test and control with a positive direct coomb’s test.

**Results:** During the study period, a total of 99,524 blood groups were performed. 124 (0.12%) blood samples showed ABO & Rh discrepancies: 77 (62%) had ABO discrepancies, while the 47 (38%) had Rh discrepancies. A total of 104 (84%) discrepancies (ABO/Rh) belong to patients while the 20 (16%) belong to volunteer blood donors.

**Conclusion:** We concluded that ABO, Rh discrepancies are frequent in our population requiring recognition & further evaluation for proper blood grouping.

**Keywords:** Blood donors, Rh discrepancy

### 15.7

#### INTRODUCTION OF BRONCHOSCOPY PATHWAY: AN EVIDENCE BASED PRACTICE IN ENDOSCOPY SUITE AT TERTIARY CARE HOSPITAL KARACHI, PAKISTAN.

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**Objective:** Bronchoscopy is an invasive procedure that requires comprehensive patient assessment and monitoring till patient discharges home. Because, it has been identified that bronchoscopic procedures are safe to perform only if there are proper clinical practice guidelines available. However, these clinical practice guidelines vary globally. On the other hand, there is very little literature available on bronchoscopy clinical pathway guidelines for multidisciplinary health care team in Pakistan. Does bronchoscopy pathway affect patient care and safety during their stay in endoscopy suite for bronchoscopy procedure?

**Method:** An electronic data base search was carried out from Science direct, Nursing Mosby consult, Google, Pub med and Up-to-date from 2008 to 2011 for systemic review of articles.

**Results:** Performing bronchoscopy procedure is a multidisciplinary approach, in which patient care is coordinated through an established bronchoscopy pathway or institutional guidelines. Moreover, these guidelines direct health care professionals to make the bronchoscopy procedure safe and doing risk management not only to monitor for mechanical but also for sedative and anesthetic complications. Besides that patient and family education is very essential in order to reduce anxiety and build cooperation in all phases of patient care for bronchoscopy.

**Conclusion:** In conclusion, bronchoscopy pathway does affect on patient care and safety during their length of stay in hospital with standard pathway guidelines. Theses pathway guidelines contain pre-procedure assessment, intra-procedure monitoring, post procedure observation and discharge criteria of patient.

**Keywords:** Bronchoscopy, Clinical guidelines, patient safety

### 15.8

#### LAPAROSCOPIC SPLENECTOMY FOR HEMATOLOGICAL DISORDER: OUR EXPERIENCE

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**Objective:** Laparoscopic splenectomy has universal acceptance due to its less morbidity and decrease incidence of per-operative and postoperative complication. It is yet not popular procedure in Pakistan due to technical challenges. Here we are presenting our experience for laparoscopy splenectomy for hematological disorders at Aga Khan University hospital.

**Method:** This case series included patients who underwent elective laparoscopic splenectomy at our institute. Seven patients were identified and reviewed for outcomes (operative time, estimated blood loss, post operative morbidity and mortality)

**Results:** The operative time was less than 3 hours with minimal blood loss with rapid and uneventful recovery. There was no procedure related morbidity or mortality; however, one patient expired later on due to overwhelming post splenectomy sepsis.

**Conclusion:** Our initial report highlights the safety of laparoscopic splenectomy and we propose it to be the procedure of choice in elective splenectomy.

**Keywords:** Laparoscopy, Splenectomy, Haematological Disorders

### 15.9

#### RECURRENCE & CHRONIC PAIN AFTER MESH FIXATION WITH SKIN STAPLES VS. SUTURES IN LICHTENSTEIN’S INGUINAL HERNIOPLASTY: A RETROSPECTIVE COHORT STUDY

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**Objective:** Reduction in operating time has been reported with skin staples instead of original technique of mesh fixation with sutures in Lichtenstein’s hernioplasty. Few studies have been conducted; however, with inadequate follow up and variable results. We have undertaken this study to compare the duration of surgery and incidence of recurrence (beyond one year) & chronic pain after mesh fixation with staples vs. sutures.

**Method:** In this retrospective cohort study, adult males with primary unilateral inguinal hernia who underwent open Lichtenstein’s hernioplasty from January 2009 till October 2010 were included. All patients with recurrent hernia, concomitant surgery, follow up less than one year and missing data were excluded. Data collection was done via questionnaire and telephonic interviews. Outcomes are recurrence, chronic pain and duration of surgery.

**Results:** We reviewed 70 patients in each group. At median follow up of 21 months (range: 12-34), there was 0% recurrence in both the groups and chronic pain was 4.4% higher in suture vs. staple group (11.4 %vs. 7%, P-value= 0.7). Median duration of surgery was 30 minutes higher in suture as compared to staple group (90 vs. 60 minutes, p-value=0.004).

**Conclusion:** Our study confirms that staples are superior to the sutures due to shorter operative time and less chronic pain

without any additive risk of recurrence. Prospective trial with long term follow up for each patient and adequate sample size is required to validate these findings in order to generate definite guidelines.

*Keywords:* Lichtenstein's Repair, Chronic Pain, Skin Stapler

### 15.10

#### SCRUBBING TO RUBBING: EVIDENCE BASED PRACTICE FROM SURGICAL HAND WASH TO WATERLESS ALCOHOL BASED HAND DISINFECTANT

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*Objective:* Context According to CDC, WHO and AORN hand washing recommendation suggests that the antimicrobial efficacy of alcohol based formulation is superior to that of all other currently available methods of preoperative surgical hand preparation. Numerous studies have demonstrated that formulation containing 60-95% alcohol alone or 50-95% when combine with small amount of Qac, Hexachlorophene or chlorhexidine-gluconate reduce bacterial count on the skin immediately post rub. The traditional surgical hand washing takes 3-5mins (Traditional 10mins with use of brush), its require sink, water supply & paper towel. Many reported skin Irritation & dryness. There could be always risk of contaminated water. On the other hand waterless alcohol Preparations are fast acting antimicrobial activity, take less time (3mins), is easy accessible, causes less skin irritation & dryness. It reduces bacterial count to greater degree and it is cost effective (save water & paper towel). Objectives The purpose is to assess the knowledge, attitude and practice of operating room healthcare professional with respect to waterless, scrub less chlorhexidine-gluconate ethol surgical hand rubs for preparation of hands before surgical sterile gloves are donned.

*Method:* Setting and Participation Total 50 participants (nurses: 28; surgeons: 22) were taken via random selection from operative room of a multi-speciality hospital with surgical hand washing facilities. Method A descriptive and observational study was conducted for the period of 3 months from May – July, 2012. It includes observation of hand hygiene practice and assessment of knowledge and attitude through self-administered questionnaire to healthcare workers.

*Results:* Results A total of 50 questionnaires were returned providing a response rate of 100%. Knowledge of alcohol based surgical hand rub was not significantly different among surgeons (68%) and nurses (67%). However, nurses showed a significantly higher compliance (71%) than the surgeons group (23%).

*Conclusion:* Conclusion Increase in staff knowledge and by improving compliance rate of surgical hand washing will eventually lead to reduced healthcare associated infections and improve patient safety. Central to the successful uptake of alcohol based surgical rub is the provision of education that emphasis the significant benefit the rub brings to the patient safety and staff occupational health. Continuous monitoring and performance feedback, availability of resources necessary for surgical hand

washing and institutional support is also important for improving the compliance of evidence based surgical hand washing guidelines.

*Keywords:* Surgical hand hygiene, waterless surgical rub, skin irritation

### 15.11

#### SUCCESSFUL MANAGEMENT OF PENETRATING INJURY TO THE THORACIC INLET AND LOWER NECK FROM THROUGH AND THROUGH LARGE METALLIC ROD

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Department of Surgery, Aga Khan University, Karachi*

*Case Report:* Penetrating neck and chest injuries are common form of occupational injuries. We hereby report a unique case in which a metallic rod had penetrated the left chest and neck of factory worker. A 32 years old plastic factory worker was brought to our institution two hours after penetrating injury of left chest and neck. It occurred when a piece of cloth he was using to cover his lower face got stuck in the mixing machine and pulled him towards himself. The distal penetrating part of the mixer penetrated his left upper chest and neck and came out through the upper back. He was immediately rushed to OR. He was intubated making sure no secondary injury occurred. It was planned to approach the chest via Video Assisted Thoracoscopy (VATS) or via Thoracotomy and also do the neck dissection to see the extent of injuries. VATS showed that the metallic rod has penetrated the apex of the lung going into the thoracic inlet but it had narrowly missed the subclavian vessels. No other injuries were found. The next step was the dissection of the neck just closed to where it has passed through the neck. It was found that it had again missed the vital structures in the neck including the carotid artery and the internal jugular vein. The metallic rod was then taken out by twisting it anticlockwise 18 times and under the vision with VATS. Patient had an uneventful recovery and has gone back to his work. Penetrating injuries of chest and neck can be fatal. Often the combination of these two injuries can lead to significant morbidity in form of injuries to structures such as trachea, esophagus or neurological deficit by involvement of brachial plexus.

*Conclusion:* The use of VATS in this case was particularly helpful as it assisted not only in assessing the injuries but also in direct visualization.

*Keywords:* Trauma, thoracic, VATS



**15.12**  
TECHNIQUES AND METHODS FOR PROFICIENT  
HANDLING AND RESTRAINT IN THE  
LABORATORY ANIMAL: FACILITATE ESSENTIAL  
BIOCHEMICAL AND MOLECULAR LEVEL STUDIES

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**Objective:** The laboratory rat is an important animal model which has been used extensively in the fields of biological, pharmaceutical, behavioral and biomedical sciences. There are several laboratory procedures which are implemented on it repetitively. These procedures include proper handling and restraint of the rat.

**Method:** The difficulties of working with the laboratory rat (*Rattus norvegicus*) and some procedures like anesthesia, blood collection, substance administration and finally euthanasia are reviewed here

**Results:** Knowledge about safe and effective rat handling techniques and methods are mandatory to learn before starting experiments on animal models, so that stress and discomfort of the rat can be avoided which is very useful for the overall outcome of an experimental study.

**Conclusion:** Proper training of researcher and handling of animals avoid false positive observations. These suggestions are from the first-hand experience from an animal care and safety perspective.

**Keywords:** Animal model, laboratory procedures, basic animal handling techniques

**15.14**  
AN AUDIT OF VISUAL OUTCOME OF CATARACT  
SURGERY PERFORMED AT A TERTIARY CARE HOSPITAL  
IN KARACHI, PAKISTAN

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**Case Report:** The aim of this study was to assess whether the visual outcome of cataract surgery at our eye care center was in accordance with the World Health Organization recommendations. It was a retrospective case series. All patients who underwent cataract surgery by a single surgeon from January 2009 till June 2011 were included. Medical records were used to obtain data on age, gender, visual acuity and causes of suboptimal outcome. Our main outcome was: best-corrected visual acuity (BCVA) in the operated eye, measured 4 to 6 weeks after surgery. Data on visual outcome was grouped using WHO's classification; Good outcome: 6/6-6/18, Borderline: <6/18-6/60 and Poor: <6/60. Of the 495 eyes that underwent cataract surgery, 58% were female. Overall, 93.3% of the operated eyes had good visual outcome, while 4.4% and 2.2% had borderline and poor outcomes, respectively. Preexisting diseases accounted for 93.9% of the borderline/poor outcome. No cases of post-operative

endophthalmitis were seen. Our study shows good visual outcomes of cataract surgeries performed using phacoemulsification with IOL insertion. Regular auditing is essential to improve the quality of surgery.

**Keywords:** Phacoemulsification, cataract surgery, visual outcome

**15.15**  
PERIOcular INFANTILE HEMANGIOMA AND THE  
ROLE OF PROPRANOLOL

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**Case Report:** In this case report, the authors are presenting a case of a four and a half month old girl with periocular infantile hemangioma which was treated successfully with propranolol. According to her parents, she developed a red colored lesion around the left upper eye lid at one week of age. We noticed a gradual increase in the size of the lesion and by the age of four and half months, the swelling had increased enough to cover her visual axis and completely occlude her left eye. Oral propranolol therapy was initiated with a daily dosage of 1 mg/kg body weight. The doze was increased gradually, and there was an excellent response to propranolol treatment. A complete eye opening was observed 8 months after the initiation of propranolol treatment.

**Keywords:** Periocular hemangioma, infantile, propranolol, efficacy

**15.16**  
VISUAL OUTCOMES AFTER SURGERY FOR ECTOPIA  
LENTIS IN A TERTIARY CARE HOSPITAL

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**Objective:** To assess changes in the best corrected visual acuity (BCVA) in eyes undergoing surgery for ectopia lentis at a tertiary care hospital in Karachi, Pakistan.

**Methods:** This was a retrospective chart review involving all cases of ectopia lentis, which underwent surgery between 2006 and 2011, at the Aga Khan University Hospital. Our main outcome was change in best corrected visual acuity which was assessed using Snellen's chart. Information was also collected on age, sex, etiology of ectopia lentis, ocular complications and systemic co-morbid.

**Results:** 32 eyes (19 individuals-7 males and 12 females) with ectopia lentis underwent surgery. The mean ( $\pm$ SD) age at the time of surgery was 19.7 $\pm$ 11.8 years. The most common etiology of ectopia lentis was simple ectopia lentis (50% eyes) followed by Marfan's syndrome (25%), metabolic (19%) and traumatic (6%). Visual acuity at presentation was 20/20-20/60 in 7 eyes, <20/60-20/200 in 15 eyes and <20/200 in 10 eyes. Visual acuity improved after surgery in 29 (90.6%) eyes by at least one line on Snellen's chart. Overall, 7(21.9%) eyes had a BCVA of 20/60 before surgery. Mean follow-up duration was 34 months. This

improved to 26 (81.3%) eyes post-operatively. Complications included post-operative ocular hypertension in 4 patients and ocular hypotony in 1 patient. No retinal detachment, re-operation or other severe complications were encountered. *Conclusion:* Surgery is a safe and effective management option for ectopia lentis in terms of restoration of vision and prevention of complications.

*Keywords:* Visual outcome, ectopia lentis, surgery

### 15.17 LASIK IN HYPEROPIC EYES WITH CONGENITAL NYSTAGMUS, USING A SOLID STATE LASER

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*Case Report:* Patients with nystagmus are considered to be poor candidates for laser in situ keratomileusis (LASIK), because they are unable to fixate. This case report presents the first reported use of LASIK surgery with a solid-state laser in hypermetropia and congenital nystagmus. A 23-year-old woman with congenital nystagmus had LASIK surgery to correct a refractive error of +2.25/+1.75 90° in the right eye and + 2.00 / +1.75 90° in the left one. Baseline uncorrected visual acuity (UCVA) was 20/200 in both eyes, and best spectacle-corrected visual acuity was 20/40 in both the eyes. The procedure was performed using the Nidek MK-2000 microkeratome and a CustomVis solid state laser system. 24 hours postoperative, the patient had a UCVA of 20/50 in both the eyes. LASIK surgery using solid state laser was effective in this case of congenital nystagmus. However, more cases should be examined before conclusions can be drawn.

*Keywords:* LASIK, hyperopic eye, congenital nystagmus, solid state laser

### 15.18 LONG-TERM OUTCOME OF PRIMARY EXTERNAL DACRYOCYSTORHINOSTOMY

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*Objective:* To assess the long-term functional outcome of external dacryocystorhinostomy (DCR) performed at a tertiary care hospital in Karachi, Pakistan.

*Methods:* This case series involved adults who underwent external DCR surgery at the AKUH during January 2000 to June 2010. Our main outcome measure was the proportion of patients reporting to have developed epiphora after surgery. During the telephonic interview, each participant was asked if they had a recurrence (symptoms such as watering or discharge) after surgery. Individuals answering affirmative were asked when the symptoms started. Data on age at surgery, gender and preoperative symptoms were collected from medical records. Recurrence free curves were calculated according to the Kaplan-Meier method.

*Results:* A total of 44 persons who underwent DCR surgery were

contactable by telephone in 2011 and all agreed to participate in the study. The mean ( $\pm$  SD) age of the patients at the time of surgery was 48.0 ( $\pm$  15.8) years. Overall, 38.6 % (17/44) participants reported having developed epiphora after surgery. The overall median recurrence-free time was 1.7 years (range 0.1-11.3 years); there were no statistically significant differences in the median recurrence-free time between men and women. *Conclusion:* The long-term functional outcome of external DCR surgery does not appear to be optimal and, in fact, far worse than the short-term results reported in the international literature.

*Keywords:* External dacryocystorhinostomy, epiphora, functional outcome

### 15.19 CO-RELATION OF AUTOMATED HEMATOLOGY ANALYZER FLAGGING WITH PERIPHERAL BLOOD FILM

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*Karachi*

*Objective:* To co-relate the automated hematology analyzer flagging for morphological findings with peripheral blood film; to assess, by direct microscopic visualization, the number of morphological findings missed by automated hematology analyzer

*Study design:* Prospective cross sectional

*Place and period of the study:* Section of Hematology, Department of Pathology & Microbiology, Aga Khan University Hospital, Karachi; All age groups and both sexes were included in the study. The study was conducted from December 2011 to January 2012.

*Methods:* 1200 randomly collected samples in EDTA tubes were included in the study. Flagged samples were correlated with peripheral blood film. Unflagged samples by automated analyzer were assessed by direct microscopic visualization for any missed morphological finding.

*Results:* Out of 552 collected samples collected till date now 222 were flagged and 330 were unflagged, 69% of flagged samples co related with morphological findings of peripheral blood film. In 36.6% of unflagged samples morphological findings were missed when examined by direct microscopic examination.

*Conclusion:* The importance of peripheral blood film examination cannot be denied as 36.6% of morphological findings were missed by hematology analyzer

*Keywords:* CBC, automated analyzer, peripheral blood film.

### 15.20 QUALITY INDICATORS FOR CRITICAL INR RESULTS IN A HAEMOSTASIS LABORATORY

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*Objective:* The objectives were to evaluate the performance indicators for critical INR results and to apply the risk score for estimation of bleeding threat in future.

**Methods:** This is a clinical audit conducted at The Aga Khan University Hospital, Karachi from February 2010 to September 2010. Samples were received in the laboratory in 3.2% Na citrate tubes and PT/INR was performed on Sysmex @1500, Innovin with ISI of 1.02. 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. Some performance indicators were also identified.

**Results:** Total INR values that were reported are 36861. Out of these, 287(0.77%) had INR above 5.0 (or 7/1000 tests). There were 211 evaluable patients out of which 81 (38.4%) were males and 130 (61.6%) were females. Majority of the patients were between the ages of 60 to 80 years. Warfarin intake accounted for critical INR in 94.3% patients and valvuloplasty was the commonest indication (48%). Only 7% had bleeding on Warfarin therapy while majority (84%) had no adverse effects. Predictors of bleeding and performance indicators were assessed.

**Conclusion:** Critical INR should be communicated at priority basis, Performance indicators should be monitored quarterly. Females, older age group and patients with valvuloplasty are at higher risk of developing critical INR. A substantial number are at the threat of bleeding.

**Keywords:** Critical INR, bleeding, quality indicator

#### 15.21 EFFECTIVENESS OF MODIFIED HODGE TEST TO DETECT NDM-1 CARBAPENEMASES - AN EXPERIENCE FROM PAKISTAN

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Karachi*

**Objective:** Rapid and cost effective phenotypic methods like modified Hodge test (MHT) that can detect the carbapenemase producing bacteria are required to control the spread of these bacteria in community and in the hospital settings.  
**Methods:** In current study we prospectively screened all enterobacteriaceae isolated from blood, tracheal aspirate, urine, pus aspirates from June 2009 to July 2010. Isolates were screened according to susceptibility zone size = 23mm of meropenem on Kirby-bauer disc diffusion followed by confirmation with MIC =0.5 µg/ml for meropenem by E-test method. Screened isolates were subjected to phenotypic assay (Modified Hodge test) with subsequent confirmation with the genotypic assay (PCR for *bla<sub>NDM-1</sub>*) to assess its clinical utility as phenotypic method for detection of carbapenemases in the diagnostic laboratory in Pakistan

**Results:** 7192 enterobacteriaceae yielded during the study period of June 2009 to July 2010 were screened. Of these 100 (1.39%) screened isolates were prospectively included in the study (*Klebsiella pneumoniae* (63) 63%, *Escherichia coli* (32) 32%, others (5) 5%). 93% (93/100) isolates showed positive PCR results for NDM-1 gene and (69) 69% isolates showed positive Modified Hodge test. 4 PCR negative isolates were found positive

by MHT (false positive). MHT showed sensitivity of 42.8%, and specificity of 69.8% with positive predictive value of 94.2% and negative predictive value of 9.6%.

**Conclusion:** NDM-1 is the predominant carbapenemase gene circulating in our carbapenem resistant enterobacteriaceae. MHT is a simple cost effective method endorsed by CLSI for phenotypic detection of carbapenemases detection in carbapenem resistant enterobacteriaceae. This phenotypic test can be routinely performed in the clinical laboratories to detect NDM-1 carbapenemases production in the absence of molecular assays in resource constrained settings. However caution must be applied for MHT negative isolates with reduced zone diameters on Kirby bauer disc diffusion method. Further exploration of such isolates using molecular tests is warranted.

**Keywords:** NDM-1, metallo-beta-lactamase, modified hodge test, Pakistan

#### 15.22 SCREENING FOR VIRAL NUCLEIC ACID IN BLOOD DONATIONS USING COBAS S201 TAQSCREEN MPX SYSTEM

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**Background & Objective:** Nucleic Acid Testing (NAT) detects blood borne viruses such as HBV, HCV and HIV at higher sensitivity compared to current screening tests and thus improves the safety of blood products by reducing the duration of window of infectivity. Recently, this test was implemented at the AKUH blood transfusion services for screening of donors' blood products. The objective of this study was to identify frequency of NAT positive blood donations, which were serologically negative for HCV, HBV and HIV.

**Methods:** Roche Cobas S201 and Cobas TaqMan analyzer system were used for NAT testing, which consisted of automated pooling of blood donations, nucleic acid preparation, amplification and detection. Samples were tested in pool of six and resolution of positive pool was performed by single donation testing.  
**Results:** A total of 26,392 blood donations were screened between April 2011 and April 2012, amongst them 919 donors were serology positive for the following markers; HBsAg 308 (33.5%), anti-HCV 445(48%), anti-HIV, 25(3%), malaria 17(2%), and VDRL 124(13.5%). The remaining 25,473 serology negative donors were NAT tested on Cobas S201 platform. Taqscreen MPX System detected 34 positive pools, which were confirmed by resolution testing giving yield of 0.13%. The donors were informed of their results and were counseled for further management of their disease.

**Conclusions:** In Pakistan implementation of NAT test for screening of blood donations would minimize the spread of viral infections by blood transfusion and improve safety of blood products.

**Keywords:** NAT, blood donors, Cobas S201, window period, viral markers

**16.2****ABDOMINAL WALL ENDOMETRIOSIS AT THE SITE OF CESAREAN SECTION; A CASE REPORT***Quratulain Hadi, Saima Hafeez**Department of Radiology, Aga Khan University, Karachi*

*Case Report:* Endometriosis is defined as functioning endometrial tissue outside the uterine cavity. It occurs in up to 15% of menstruating women and, in most cases, is located within the pelvis. Endometrial implants, however, have been reported in many unusual sites outside the pelvis including the abdominal wall. The latter may occur after surgical procedures that violate the uterine cavity, such as a cesarean section, allowing endometrial tissue to be transplanted. Its clinical diagnosis in the abdominal wall has been confused with abscess, lipoma, hematoma, sebaceous cyst, suture granuloma, inguinal hernia, incisional hernia, desmoid tumor, sarcoma, lymphoma or primary and metastatic cancer. Although endometriosis at the site of cesarean section is rare but concerning the rising CS rate, the prevention of scar endometriosis is worthy of our attention. We report a case of endometriosis occurring at the site of a cesarean section scar.

*Conclusion:* In conclusion, abdominal wall endometriosis may be caused by iatrogenic inoculation of endometrium into the surgical wound. It is currently regarded as a rare disease entity. However, in the light of the rising CS rate, it may become more common. So, it is strongly recommended that the abdominal wound be cleaned thoroughly at the conclusion of the surgical procedure, particularly at both corner sites (especially the operator's side).

*Keywords:* Scar endometriosis, MRI, Abdominal wall

**16.3****ADJUNCT TESTING USING HPV DNA IN CONJUNCTION WITH VIA AS AN ALTERNATIVE TO CERVICAL CYTOLOGY FOR CERVICAL CANCER SCREENING IN PAKISTAN***Aliya Begum, Fauzia Haq Nawaz**Department of Obstetrics & Gynaecology, Aga Khan University, Karachi*

*Objective:* Developing countries often lack the necessary resources to use the Pap smear as a screening tool for cervical abnormalities. Visual inspection with acetic acid is similar to Pap smears in terms of sensitivity for high-grade CIN but as a standalone test, it is not very specific and would lead to over treatment of minor lesions. Adjunct testing with HPV can improve the test characteristics of VIA. *Aim:* To evaluate VIA with adjunct HPV testing as an alternative to routine cervical cytology for cervical cancer screening in low resource setting. *Method:* Methods: This was a cross sectional study including 857 women presenting to the gynaecology clinic. Each woman underwent three screening tests in the following order: Pap smear, specimen collection for HPV testing and then VIA. All women who were screened positive by any of the three methods were investigated with colposcopy by trained colposcopists, who were blinded to the results of screening tests, and directed biopsies were taken in women with colposcopic abnormalities.

HPV testing was performed by PCR and using GP5/GP6, general primers for HPV. Samples found positive for HPV were also analyzed for high risk subtypes of HPV.

*Results:* Results: A total of 857 women were enrolled in the study and the median age of participants were 38 years. Out of 857 samples screened 46 samples were positive for Visual inspection with acetic acid (VIA), 4 samples were found to have abnormal Pap smears and 13 were found to be positive for HPV DNA. Sensitivity and specificity of sequential VIA and HPV was 80% and 93% respectively.

*Conclusion:* Conclusions: For countries with limited resources sequential testing involving the use of VIA followed by HPV could improve the test characteristics.

*Keywords:* Cervical cancer screening, VIA, HPV testing

**16.4****ANTENATAL CORTICOSTEROIDS TRIAL IN PRETERM BIRTHS TO INCREASE NEONATAL SURVIVAL IN DEVELOPING COUNTRIES: STUDY PROTOCOL.***Fernando Althabe, Sarah Saleem, Omrana Pasha**Department of Community Health Sciences, Aga Khan University, Karachi and Institute for Clinical Effectiveness and Health Policy*

*Objective:* Preterm birth is a major cause of neonatal mortality, responsible for 28% of neonatal deaths overall. The administration of antenatal corticosteroids to women at high risk of preterm birth is a powerful perinatal intervention to reduce neonatal mortality in resource rich environments. The effect of antenatal steroids to reduce mortality and morbidity among preterm infants in hospital settings in developed countries with high utilization is well established, yet they are not routinely used in developing countries. The impact of increasing antenatal steroid use in hospital or community settings with low utilization rates and high infant mortality among premature infants due to lack of specialized services has not been well researched. There is currently no clear evidence about the safety of antenatal corticosteroid use for community-level births

*Method:* We hypothesize that a multi country, two-arm, parallel cluster randomized controlled trial to evaluate whether a multifaceted intervention to increase the use of antenatal corticosteroids, including components to improve the identification of pregnancies at high risk of preterm birth and providing and facilitating the appropriate use of steroids, will reduce neonatal mortality at 28 days of life in preterm newborns, compared with the standard delivery of care in selected populations of six countries. 102 clusters in Argentina, Guatemala, Kenya, India, Pakistan, and Zambia will be randomized, and around 60,000 women and newborns will be enrolled. Kits containing vials of dexamethasone, syringes, gloves, and instructions for administration will be distributed. Improving the identification of women at high risk of preterm birth will be done by (1) diffusing recommendations for antenatal corticosteroids use to health providers, (2) training health providers on identification of women at high risk of preterm birth, (3) providing reminders to health providers on the use of the kits, and (4) using a color-coded tape to measure uterine height to estimate gestational age in women with unknown

gestational age. In both intervention and control clusters, health providers will be trained in essential newborn care for low birth weight babies. The primary outcome is neonatal mortality at 28 days of life in preterm infants. Trial registration ClinicalTrials.gov. *Results:* The primary analysis will compare post-intervention outcomes between intervention and control clusters, controlling for country, using two complementary approaches. First, a cluster-based permutation test that is appropriate for the stratified randomization process be used to develop a formal hypothesis test and interval estimates of the treatment difference between the two arms. A model-based analysis will be used to assess whether the inferences generated by the permutation test are robust enough to control for potential confounders and to describe any evidence of differential treatment effects in the different countries. Although this study is not powered to evaluate treatment by country interactions formally, any evidence of such interactions will be described through the model-based analysis of this primary outcome. An intent-to-treat analytic approach will be used for both the permutation test and for the model-based analyses, in that any cluster assigned to the intervention will be considered treated, whether or not the ACT intervention was delivered in that cluster. Also, both analyses will use country as a blocking or stratification variable in the analysis to reflect the randomization scheme. To facilitate the model-based primary analysis, a detailed analysis of baseline variables of the two groups (intervention and control clusters) will be performed to assess the extent, if any, of baseline imbalances between the two groups of clusters. If baseline differences

*Keywords:* Neonatal mortality, Antenatal corticosteroids, Implementation research

#### 16.5 APPROACHES TO IMPROVE QUALITY OF CARE FOR WOMEN AND NEWBORNS

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*Objective:* The interventions to improve the QoC is situational, tailored and context specific. However, several factors have been modeled for improved delivery of care. Systematic reviews have been conducted for the various factors involved in improving the quality of care. However, scaling up and sustainability may be difficult to achieve and need careful consideration. The objective was to systematically assess and summarize information from systematic reviews on impacts of approaches to improve quality of care for women and newborns.

*Method:* We considered all available systematic reviews on the approaches at various levels of care directly applicable to women and newborn health. We reported the systematic findings of 106 reviews, spread over 12 pre-identified quality of care components based on the conceptual framework.

*Results:* At district level, financial strategies especially user directed strategies like maternal voucher schemes have shown strong potentials to improve the process outcomes such as utilization of healthcare. At community level, packaged care comprising of outreach services, community mobilization and training of the CHW/TBA have shown impact on maternal and neonatal outcomes. Midwife, LHW and MLHW based delivery

models have also reported improved outcomes when compared to usual care. This finding is especially applicable to resource limited settings in Asia and Africa. At facility level, in-service trainings and specialty teams have conclusive benefits in improving the maternal health outcomes. Most of these strategies however require a pre-existing primary health care service infrastructure and measures to ensure sustainability. *Conclusion:* There is lack of qualitative data describing the individual components of the intervention for reproducibility. Further evidences are now needed to evaluate the best possible combination of the strategies tailored to the needs of the area of implementation.

*Keywords:* Quality care, maternal health, child health

#### 16.6 ASSESSMENT OF QUALITY OF LIFE IN CHILDREN SUFFERING FROM BETA THALASSEMIA MAJOR PRESENTING TO A TERTIARY CARE HOSPITAL IN KARACHI

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*Objective:* The chronic nature and morbidity of Beta Thalassemia Major makes it important to assess the health related quality of life of such patients, especially of children as they are less likely to raise concerns compared to adults. Our study was the first in Pakistan to assess this and identified domains of health which are most adversely affected due to Thalassemia. *Method:* Children with Thalassemia Major between ages 5-14 years presenting to Civil Hospital Karachi were interviewed using a standardized validated questionnaire (PedsQL™v.4.0) to assess their health related quality of life. The data was analyzed using SPSS v19. Mean scores of all domains of health and total mean scores were computed and compared to results of previous studies conducted outside Pakistan.

*Results:* Eighty responses were analyzed. Mean age was 8.5±3years. Forty-five (56%) were males, thirty-five (44%) were females. Mean Total Summary score was 50.76±15.8 and mean Psychosocial Health Summary score was 51.51±16.6. Physical Health Summary score was 48.9±18.3. No association was found between gender and mean scores. Mean scores of all scales was independent of age of patients and parental education status. *Conclusion:* Children with Thalassemia Major in Pakistan have poorer health related quality of life in almost all domains compared to their international counterparts. Interventions should be planned and implemented to improve the quality of life of such children.

*Keywords:* Beta thalassemia major, health related quality of life, Pakistan

**16.7****ASSOCIATION BETWEEN GEOGRAPHIC ACCESS TO WORKING FAMILY PLANNING CENTERS AND UNINTENDED PREGNANCIES AMONG MARRIED WOMEN IN DISTRICT THATTA**

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

**Objective:** To measure distance from women's houses to nearest working family planning centers by geographic information system (GIS) and to assess the transport availability as risk factors for unintended pregnancies in district Thatta.

**Method:** Nested case control study was conducted of 800 pregnant women, identified from Maternal-Newborn Health Registry in Thatta. Women reporting unintended pregnancy were cases and with intended pregnancy were controls. Logistic regression was used for analysis.

**Results:** Neither distance [OR=1; 95% CI (0.95-1.05)] nor transportation [OR = 1.14; 95% CI (0.78-1.67)] were significantly associated with unintended pregnancy. Women with unintended pregnancies were more likely to aware [OR=2.21; 95% CI (1.23-3.97)] and more likely to use contraceptives [OR=3.59; 95% CI (1.83-7.06)] as compared to controls. Other factors were increasing maternal age [OR=1.13; 95% CI (1.08-1.17)], having at least one son [OR=3.13; 95% CI (1.93-5.07)]; husband's opposition to FP [OR=3.24; 95% CI (1.89-5.56)] and primary or less husband's education [OR=1.85; 95% CI (1.08-3.18)].

**Conclusion:** Study suggests that lack of geographic access to FP center is not a risk factor for unintended pregnancy. Increasing maternal age with at least one living son, use of contraceptives, spousal opposition and poor spousal education are associated with unintended pregnancies. Such couples should be mainstreamed as target group for FP programs. Quality of care of FP services must be improved including the provision of emergency contraception.

**Keywords:** Geographic Access, Geographic information system, distance, transportation, unintended pregnancy, Family planning

**Keywords:** Geographic Access, Geographic information system, distance, transportation, unintended pregnancy, Family planning

**16.8****BREAKING THE VICIOUS CYCLE OF INTIMATE PARTNER VIOLENCE ON WOMEN**

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**Objective:** In Pakistani community early marriages have become a trend. Early marriages may precipitate to IPV as young women are less aware of changes such as marriage, sex and pregnancy that would influence her reproductive health. Hewitt (2011) defines IPV as, "violence in the form of sexual, physical, psychologic/emotional abuse, or threat of physical or sexual

abuse from a current or former intimate partner." (Hewitt, et al., 2011). Purpose: To explore the effect on IPV on women reproductive health through a case report and correlate it with contemporary literature.

**Method:** A detailed interview was taken from the 20 year old woman who was married since 6 years. Furthermore, systemic review of literature from 10 research articles from 2001 to 2011 was conducted through electronic medium by using Jstor, JPMA, SAGE and Google search engine.

**Results:** It was found that she was beaten up by her husband and his family due to dowry and sexual dissatisfaction. Further, when she went to maternal health clinics during pregnancy and miscarriage she was never asked about abuse she was facing by any health care provider. Literature evidently suggest that early marriages precipitate increased risk for experiencing physical and sexual violence within marriage that is linked to a variety of sexual and reproductive health consequences for them (Santhya, 2011).

**Conclusion:** Literature suggests that in order to lessen the aftermath of IPV, advocacy posters can be put up in female toilets. Leaflets can also be given to female clients coming to clinics. Incidences of IPV should be confidentially documented by health care professionals. Violence within the family may be posed as a private event, but, it isolates and silences the victims

**Keywords:** IPV, Early marriage, Reproductive health

**16.9****CERVICAL LYMPHADENOPATHY IN CHILDREN; A STUDY FROM KARACHI, PAKISTAN**

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**Objective:** Paediatric cervical lymphadenopathy (PCL) is a common presentation for health seeking; because of its benign and/or malignant causes. The indication PCL biopsy is failure to size regression after appropriate antibacterial therapy within 4-6 weeks. The study was designed to determine the causes and disease spectrum in children underwent excisional or incisional biopsy of cervical lymph nodes in Aga Khan University Hospital.

**Method:** We retrospectively audit all the cervical lymph node biopsies in children aged 1 mo – 15 years performed during 1988 to 2011, at Aga Khan University, Karachi. Data was analysis using Statistical Program for Social Sciences (SPSS) version 19. We retrieved a total of 178 files of which 8 had incomplete records. Therefore 170 children were available for analysis.

**Results:** Among 170 children, majority (n=98; 58%) were males. Two thirds of children (n=114; 66%) were more than five years of age. Fever (97%), generalized lymphadenopathy (44%) and weight loss (33%) were the main presenting features. On examination 72% (n=123) were found to have multiple lymph nodes involvement. Histology revealed nonspecific infectious process (n=71; 42%), tuberculosis (n=55; 32%) and lymphoma (n=33; 19%) of the biopsies. Lymph node cultures were negative in majority. Mycobacterium tuberculosis grew in 10 children. Histology showed malignancy in thirty-nine (23%). Older children had more malignant disorders [75% vs. 25%; p=0.10] and males

had more malignant histology compared to females [87% vs. 13%;  $p=0.001$ ].

*Conclusion:* Fever with cervical lymphadenopathy is the most common presentation. Although non-specific inflammation is the most common diagnosis but tuberculosis and malignancy are higher in children in our study as compared to other international studies. Trend of malignancy is seen more in multiple enlarged cervical lymph nodes in older male children

*Keywords:* cervical lymphadenopathy, malignancy, tuberculosis

#### 16.10

##### COMMUNITIES, BIRTH ATTENDANTS AND HEALTH FACILITIES: A CONTINUUM OF EMERGENCY MATERNAL AND NEWBORN CARE (THE GLOBAL NETWORK'S EMONC TRIAL).

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*Objective:* Maternal and newborn mortality rates remain unacceptably high, especially where the majority of births occur in home settings or in facilities with inadequate resources. The introduction of emergency obstetric and newborn care services has been proposed by several organizations in order to improve pregnancy outcomes. However, the effectiveness of emergency obstetric and neonatal care services has never been proven. Also unproven is the effectiveness of community mobilization and community birth attendant training to improve pregnancy outcomes.

*Method:* We have developed a cluster-randomized controlled trial to evaluate the impact of a comprehensive intervention of community mobilization, birth attendant training and improvement of quality of care in health facilities on perinatal mortality in low and middle-income countries where the majority of births take place in homes or first level care facilities. This trial will take place in 106 clusters (300-500 deliveries per year each) across 7 sites of the Global Network for Women's and Children's Health Research in Argentina, Guatemala, India, Kenya, Pakistan and Zambia. The trial intervention has three key elements, community mobilization, home-based life saving skills for communities and birth attendants, and training of providers at obstetric facilities to improve quality of care. The primary outcome of the trial is perinatal mortality. Secondary outcomes include rates of stillbirth, 7-day neonatal mortality, maternal death or severe morbidity (including obstetric fistula, eclampsia and obstetrical sepsis) and 28-day neonatal mortality. *Results:* Perinatal mortality and morbidity remains one of the largest challenges for improving maternal and child health in low and middle-income countries. Despite a good understanding of health interventions that can reduce this burden, sustained implementation has been a challenge. A comprehensive package of interventions spanning the continuum of care from the home to the hospital, with a robust community mobilization component, has the potential to significantly improve both maternal and fetal/newborn outcomes. The findings from the current RCT therefore may inform health policy for interventions that are

scalable and sustainable in a variety of settings in LMIC. *Conclusion:* In this trial, we are evaluating a combination of interventions including community mobilization and facility training in an attempt to improve pregnancy outcomes. If successful, the results of this trial will provide important information for policy makers and clinicians as they attempt to improve delivery services for pregnant women and newborns in low-income countries

*Keywords:* birth attendants, health facilities, emergency maternal and newborn care

#### 16.11

##### COMPLIANCE OF MICRONUTRIENT SPRINKLE FOR CHILDREN AGED 6-24 MONTHS: THE QUALITATIVE ASPECT

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*Aga Khan Health Service, Pakistan*

*Objective:* Micronutrient deficiencies account for large number of morbidity, risk of repeated infections, disabilities and even mortality in infants and young children around the world, especially in developing countries. A simple, inexpensive and potentially viable method of supplementation, Sprinkles is recommended by UNICEF. They are powdered form of micronutrients that can be taken by anemic or non anemic children for cure or prevention of iron deficiency anemia. *Objective:* • To explore the factors that affect the compliance/ non-compliance of daily administration of home fortified micronutrient supplement Sprinkles in children aged 6-24 months living in Karachi. • To investigate the acceptability of Sprinkles in children. • To find out the knowledge of caregivers/ information given by the health center regarding use of Sprinkles. *Method:* This qualitative study was conducted in Garden area of the city of Karachi. A purposive sample of fourteen caregivers participated in the in-depth interview based on a semi structured questionnaire. Participants were asked to give a date for the interview over telephone & the interview took place at the residents of the caregivers. The conversation between the interviewer & participant was tape recorded which was then fully transcribed & thematic analysis was done manually. *Results:* The result of this study show that the compliance to Sprinkle was 50% as cited by the caregivers of the children. The reason for non compliance was the unacceptability by the children because of the change in taste & color of food to which Sprinkle was added, side effects such as frequent & dark stools, little counseling by the health care provider, teething & difficulty to remember. Some caregivers also mentioned that they did not feel it was important enough to be given to their child. Those who did comply stated that Sprinkles had beneficial effects on their child's overall health such as, increase in appetite, weight & height & prevent/ cures anemia. Most mothers however did appreciate Sprinkles for being user friendly as it is easy to use. *Conclusion:* In order to improve adherence of Sprinkles in children instead of its daily administration for 2 months, a flexible routine for 3-4 months should be promoted. The role of LHV & volunteers should also be strengthened in order to encourage compliance in mothers.

*Keywords:* Sprinkles, Compliance, Micronutrient deficiency

**16.12****CONSEQUENCES OF PRE-MARRIAGE DISCLOSURE OR CONCEALMENT OF EPILEPSY DISORDER IN THE MARITAL LIVES OF WOMEN IN KARACHI, PAKISTAN**

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**Background & 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.

**Method:** This descriptive 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. A self-reported questionnaire was administered to collect the data. Descriptive and inferential statistics were implied for data analysis.

**Results:** The present study shows that 64% of the participants disclosed the epilepsy diagnosis to their prospective spouse and in-laws, 36% concealed their diagnosis at the time of marriage negotiations. The current study has identified three key reasons for the pre-marriage disclosure of epilepsy that include anticipating disruption in the matrimonial relationship, trustworthiness in the marital relationship, and acceptance from the prospective spouse after knowing the history of the disease. 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. However, honestly sharing the history of epilepsy at the time of marriage negotiation is more helpful, as epilepsy requires follow-up in the clinic and compliance to medication for a prolonged period. Moreover, disclosure helps to get financial support, physical assistance, and affectionate support.

**Keywords:** Epilepsy, disclosure, marriage negotiations.

**16.13****DECIDING FOR TOP IN CASE OF FETAL ANOMALY: IMPACT ON MENTAL AND EMOTIONAL WELL BEING OF A WOMEN**

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**Objective:** Autonomy of vulnerable group and decision making capacity is controversial even if the decision is being made by weighing benefits versus risk associated with a particular treatment modality. The right to decide for the treatment in context to vulnerable population i.e. women and fetus is a big issue. Moreover, it is challenging to make a decision where religious and moral values and beliefs are conflicting.

**Method:** Case study: A 22 years old lady, 24 weeks pregnant

gravida 2, para 1+0, was admitted in obstetric and gynecology ward of one of the secondary care hospital of Karachi for Termination of Pregnancy (TOP). At 22 weeks of gestation her ultrasound was done that reveals fetus having anencephalopathy and spinabifida. It was identified that her husband is not informed about her admission as he was not in favor of TOP. With the consensus of that lady her husband was called. During counseling three ultrasounds from different labs were shown by the patient's husband but mentioning the same findings as well as a fatwa in which it was suggested that this pregnancy should be continued regardless of the ultrasound findings. The statement written in fatwa was supported by a Quranic verse of sura Nisa. **Results:** We as a team tried to explain the reason for TOP to both parents, although, they understood but there was a genuine conflict between their religious, medical and moral values and beliefs. Finally, it was suggested by us to ask two questions by those fatwa makers i.e. what if fetus is abnormal, and what should be done if mother's life is in danger? Later on, individual and couple counseling that was focused on multiple dimensions for family harmony and health. As a result, client was discharged without TOP and family conflict was settled to certain extent. **Conclusion:** These types of clinical situations are very prevalent in many hospitals of a developing country like Pakistan. This case illustrates a conflict between religious and moral values and beliefs. Moreover, this depicts the power deferential and autonomy of women living in developing country in diverse perspective. Therefore, the concepts provided by west have a modified implication in this context.

**Keywords:** Women health, autonomy, termination of pregnancy

**16.14****DEPRIVED NEONATAL CARE IN PEDIATRIC NURSERY AT KARACHI, PAKISTAN**

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**Objective:** "Newborn babies have amazing abilities, yet they are completely dependent on others for every aspect – feeding, warmth and comfort". The objective of this literature review is to elucidate the destitute care provided to neonatal at nursery settings.

**Method:** Systemic review of literature from 09 research articles from 1999 to 2011 was conducted through electronic medium by using JPMA, SAGE and Google search engines. **Results:** Literature suggests that health care professionals emphasize on paperwork which indeed has subsided the importance of human care. Nurses might have extreme work load but it should be an excuse to provide pitiable care as neonatal are completely dependent on them. Measures should be taken to prevent sepsis among neonatal. This requires regulation of infection control.

**Conclusion:** As Watson (2011) mentions: "Caring is more "healthogenic" than is curing." Neonatal care is observed to be relatively neglected to date. Hospital based observations explicitly included evidence of poor care, regarding cleanliness, breast feeding initiation and thermal protection.

**Keywords:** Neonatal care, health care professionals, sepsis



### 16.15

#### DETECTION AND MANAGEMENT OF DIABETES IN WOMEN OF REPRODUCTIVE AGE: A SYSTEMATIC REVIEW

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**Objective:** Today as many as 60 million women of reproductive age have type 2 diabetes, and gestational diabetes (GDM), affects up to 15% of pregnant women worldwide. GDM accounts for 90% of all cases of diabetes in pregnancy, and if unrecognized and untreated puts both the mother and the fetus at an increased risk of morbidity and mortality. The specific objectives of this systematic review were to synthesize the evidence on interventions screening, detection, prevention and management of gestational diabetes in relation to levels of care (community, outreach and facility) with reference to low and middle income countries.

**Method:** We considered all available published and unpublished papers/reports on the impact of diabetic (including gestational diabetes) care interventions for screening, detection, prevention and management on MNCH outcomes among women of reproductive age. Studies were included if (a) identified studies have delivered interventions for screening, detection, prevention and management of diabetes in women and if b) the studies reported maternal, fetal or neonatal outcomes.

**Results:** Our review found that women who have had GDM in previous pregnancy have at least a seven-fold increased risk of developing type 2 diabetes in the future compared with those who have had a normoglycaemic pregnancy. Maternal risk factors (such as weight, and age) assessment during preconception period is vital and women on risk should be counseled and advised on diet and exercise. During pregnancy early detection and maintenance of plasma glucose levels have shown effectiveness in reducing the incidence with added advantages on improving perinatal health. While low glycemic diet in the management of gestational diabetes has shown inconclusive evidence, exercise has shown beneficial impacts. Packaged interventions for GDM (dietary advice, glucose monitoring, and insulin) showed a significant positive impact on composite analyses of antenatal preeclampsia and neonatal convulsions and caesarean section and birth weight >4000g.

**Conclusion:** Our review highlights the growing burden of pre-diabetes and diabetes globally and implications for adverse outcomes in pregnancy and childbirth. With the increasing global burden of obesity, the problem is likely to grow and will particularly affect populations in low and middle income countries. Given the evidence emerging from plausible and feasible interventions for the prevention of the disorder and its complications, it is now possible to consider large-scale implementation of evidence based interventions through programs that can be implemented in a range of settings. These include community-based programs for education on preventive strategies, outreach programs with trained health workers for screening routinely during pregnancy and especially at-risk women. Once detected the optimal control and management of diabetes and gestational diabetes is critical to optimizing outcomes in a range of settings.

**Keywords:** Diabetes, gestational diabetes, low and middle income countries

### 16.16

#### EFFECT OF COMMUNITY CASE MANAGEMENT ON CHILDHOOD PNEUMONIA AND DIARRHEA

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**Objective:** Diarrhea and pneumonia are the two leading cause of mortality in children under five. Improvements have been made in mortality trends over the past two decades but the progress is slow to meet the MDG-4.

**Method:** We conducted a systematic review of the randomized controlled trials, quasi-experimental and observational studies to estimate the effect of community case management on mortality due to diarrhea and pneumonia. We used a standardized abstraction and grading format and performed meta-analyses for all the relevant outcomes. The estimated effect of community case management was determined by applying the standard Child Health Epidemiology Reference Group rules

**Results:** We included twelve studies for pneumonia related outcomes and two studies for diarrhea related outcomes in this review. Community case management is associated with a 32% reduction in pneumonia specific mortality, while the evidence on diarrhea is weak.

**Conclusion:** Community case management is effective for the management of diarrhea and pneumonia and has the potential to significantly decrease morbidity and mortality burden in children under the age of five years.

**Keywords:** Case management, diarrhea, pneumonia

### 16.17

#### EFFECTIVENESS OF HAEMOPHILUS INFLUENZAE TYPE B VACCINE ON RADIOLOGICALLY CONFIRMED PNEUMONIA IN YOUNG CHILDREN IN PAKISTAN

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**Objective:** The effectiveness of Haemophilus influenzae type b (Hib) vaccine in preventing severe pneumonia in Asian children has been questioned, with many large Asian countries still to introduce Hib vaccine in routine programs. This study aimed to assess Hib vaccine effectiveness (VE) on radiologically confirmed pneumonia in children born after the nation-wide introduction of Hib conjugate vaccine in Pakistan.

**Method:** A matched case control study enrolled cases of radiologically confirmed pneumonia in several hospitals serving low-income populations in two urban and two rural districts in 2009-2011. Cases were matched by age and season with 3 hospital and 5 neighborhood controls. Pneumonia was diagnosed using standardized WHO criteria for chest x-ray interpretation. Matched odds ratios (mOR), adjusting for baseline variables, were estimated for VE.

**Results:** 1,008 children with radiologically confirmed pneumonia were enrolled; of which 841 (83%) were <12 months of age. A

total of 3,024 hospital controls and 5,040 neighborhood controls were enrolled. The coverage for > 2 doses of pentavalent vaccine (DTP-Hepatitis B-Hib) was 19.4%, 25%, 32% in children enrolled as cases, hospital controls and neighborhood controls respectively. The preventable fraction for radiologically confirmed pneumonia was 35% with > 2 doses of Pentavalent vaccine using hospital controls. The effectiveness of Pentavalent vaccine was greater (63% with > 2 doses of Pentavalent vaccine) using neighborhood controls.

**Conclusion:** Hib vaccine prevented a significant fraction of radiologically confirmed pneumonia in young children in Pakistan. Since pneumonia is a leading cause of death in children in Pakistan, maximizing impact on child survival needs improved Hib vaccine coverage among the poorest.

**Keywords:** Childhood Pneumonia, Radiologically confirmed pneumonia, Hib vaccine effectiveness

### 16.18

ETIOLOGY OF FEVER AND ACUTE RESPIRATORY ILLNESS IN NEWBORNS, CHILDREN, AND ADULTS IN A RURAL AREA OF PAKISTAN- A PROSPECTIVE, COMMUNITY BASED SURVEILLANCE STUDY.

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**Objective:** Acute respiratory infections (ARI) account for 24% of all under-5 child deaths in Pakistan, translating to an estimated 90,000 deaths annually. There have been no comprehensive studies of the etiology of severe pneumonia in Pakistan since the 1980s. The goal of our study is to determine the etiology of ARI and febrile illness in different age groups in Pakistan, using cutting edge diagnostic modalities including real-time PCR and automated culture methods.

**Method:** This is a longitudinal cohort observational study of newborns, young children, and their adult household members with fortnightly surveillance throughout the duration of this three year study. A WHO case definition of severe pneumonia is employed, and cases of febrile illness are identified using temperature = 101.3 Fahrenheit for newborns, young children and adults. Participants are evaluated by mobile medical teams to obtain appropriate samples and for medical treatment of the observed illnesses. Samples include nasopharyngeal swabs for workup of ARI by PCR identification of bacterial and viral etiologies and blood cultures and malaria ICT for workup of febrile illnesses.

**Results:** In the initial 6 month period of this study, 94 cases of severe pneumonia in newborns with or without fever and 8 cases of newborns having fever = 101.3oF only have been identified. In children 5 to 14 years of age, 5 cases of fever = 100.4 oF only and 7 cases of ARI without pneumonia have been identified. In adults, there have been 8 cases of fever = 100.4 oF with influenza-like symptoms and 7 cases of ARI without fever. To date, 35 nasopharyngeal swab samples out of 165 collected from newborns have been analyzed using Luminex assay RVP Fast kit. Of these samples, 16 samples were positive for enterovirus/rhinovirus, 2 were positive for RSV, 5 were positive for PIV type III/IV, and 12 cases were negative for the pathogens

tested. Blood cultures were positive in 2 cases, with one case of *Campylobacter* and *E.coli* each. Malaria ICT was positive in 2 cases showing combined *Plasmodium falciparum* and vivax infection.

**Conclusion:** We are currently in the first year of this three year surveillance study. The results of this study will promote establishment of empiric treatment algorithms for ARI and febrile illness in Pakistan.

**Keywords:** Respiratory illness, newborns, etiology

### 16.19

FAMILY PLANNING SERVICE PROVIDERS PERCEPTIONS ABOUT DETERMINANTS OF DIFFERENT CONTRACEPTIVE METHODS USE AMONGST YOUTH: A QUALITATIVE STUDY IN KARACHI PAKISTAN

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**Objective:** In Pakistan, Contraceptive Prevalence Rate (CPR) among married female youth is 17.4% and even lower in rural and slum areas leading to rapid population growth on one hand and poor health consequences on the other. The study was conducted to explore family planning service providers' perceptions regarding determinants of different contraceptive methods use amongst currently married youth aged 18-24 years in slum areas of Karachi.

**Method:** Qualitative exploratory study design was adopted and a total of ten in-depth interviews were conducted with family planning service providers of the area. For analysis coding was done and categories were made and then themes were derived. **Results:** Our findings revealed that family planning service providers perceived that there is low use of contraceptive methods amongst youth of study area and low usage could be due to side effects; myths and misconceptions; lack of proper knowledge about different contraceptives; unmet needs of contraceptives; socio-cultural and religious factors about different contraceptive methods and family planning service providers own biases against or for use of contraceptive methods amongst youth in the study area. However the education of youth and family planning service providers' better knowledge about contraceptive methods was perceived to be associated with improved use of family planning methods amongst youth of the study area. **Conclusion:** Exaggerated side effects and sociocultural factors could be important influences leading to low use of family planning methods amongst youth of Karachi. Some policy initiatives are the training of lady health Workers, lady health visitors, physicians and staff of the pharmacies for counseling youth in the correct use of family planning methods.

**Keywords:** Contraceptives, Pakistan, Family planning service providers

### 16.20

#### FATHERS' INTERACTIONS DURING PLAY AND CHILD DEVELOPMENTAL OUTCOMES IN FIRST FIVE YEARS OF LIFE: A LITERATURE REVIEW

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**Objective:** To determine the effect of father-child interaction during play on cognitive, language, social emotional, early literacy and numeracy skills in the first five year of the child.  
**Method:** The literature was searched online through PubMed, Google Scholar and snow balling from cross references cited in literatures. The original peer reviewed studies of low, middle and high income countries over the last 15 years were included. All studies included an evaluation of fathers' interaction with children (less than 5 years of age) as an outcome measure  
**Results:** Thirty six articles met the inclusion criteria. The emerging findings are: (1). Risk factors associated with poor paternal interaction are low socioeconomic status, work related stress, maternal depression, poor response from child and poor relationship with partner.(2). Protective factors for good paternal interaction are being employed, being resident with family, good education, stable relationship with partner, low work related stress and responsive child. (3). Fathers tend to interact less with child during triadic sessions (i.e. mother, father and child)  
**Conclusion:** This study is in progress; however, the emerging findings suggest critical gaps in the literature. All studies were from high income countries thus highlighting a gap in the evidence from low income countries. There is insufficient data about associations of the quality of interaction with child development outcomes. Finally intervention studies targeting paternal interaction with children are limited.

**Keywords:** Father, interaction, Play, Early Child Development

### 16.21

#### FREQUENCY IN CHILDREN PRESENTING WITH DOMESTIC INJURIES AT A TERTIARY CARE HOSPITAL

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Department of Surgery, Aga Khan University, Karachi

**Objective:** To determine the frequency of common domestic injuries in children presenting at Aga Khan university hospital, Karachi.

**Method:** After identification of children by researcher, who were full filling inclusion criteria and taking informed consent, researcher was filled a questionnaire which includes age, gender, place of injuries, site of injuries, types of injuries, mechanism of injury and Parents' level of Education. Researcher was also recorded the monthly family income. The Categories of socioeconomic status defined as high, middle and low assessed on the basis of monthly family income per person as; < 6000 Rs – low class 6000 Rs – 12000 Rs - lower middle class 12000 Rs – 24000 Rs – upper middle class > 24000 Rs – high class  
**Results:** Males are in majority. It is mostly occurring in age less than 1 years of age. Bed room is the commonest place of injury. Fall is the most common mode of presentation followed by

foreign body ingestion & inhalation. Majority of children presented with laceration. Head & face was the region mostly suffered due to domestic injuries followed by lower & upper limb. In our study majority of patients belongs to middle class family

**Conclusion:** Domestic injuries are very common and frequently occurring injuries in our set up. We can prevent these injuries by doing small adjustments in our homes.

**Keywords:** Domestic injury, Injury prevention, Children

### 16.22

#### FREQUENCY OF ABNORMAL ELECTROENCEPHALOGRAM IN CHILDREN WITH EPILEPSY AT A TERTIARY CARE HOSPITAL IN KARACHI.

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**Objective:** To determine the frequency of abnormal electroencephalogram (EEG) in children with epilepsy in patients presenting to tertiary care medical facility.

**Method:** 201 patients with epilepsy fulfilling the selection criteria and informed consent were included in study. Demographic features along with patient's history, primary diagnosis and EEG findings will be recorded by primary investigator.  
**Results:** Our sample was of 201 patients with seizure disorder. Mean age was  $54.3 \pm 48.3$  months. Nearly half were = 38 months of age. 127 (63%) were male. Mean duration of seizure was  $5.7 \pm 7$  minutes. EEG was performed in 46% of patients within 24 hours. Majority (53.1%) had monthly seizure activity. Abnormal EEG was found in 94 (47%) of patients. Most common 37 (39%) abnormality on EEG was presence of both abnormal background activity and intrictal epileptiform discharges. Out of those with abnormal EEG findings, 64 (68%) were male and most of them 54 (57%) had history of seizure disorder for > 24 months.

**Conclusion:** Our results showed that 47% of patients presented with seizure had abnormal EEG. We recommend further studies with large sample and multiple settings to reach the firm conclusion.

**Keywords:** EEG, Epilepsy, seizure

### 16.23

#### FREQUENCY, SEVERITY OF DEPRESSION AND ITS CONTRIBUTING FACTORS AMONG MOTHERS OF CHILDREN WITH CANCER IN A TEACHING HOSPITAL AT KARACHI, PAKISTAN

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**Objective:** To identify prevalence, levels of depression and contributing factors in mothers of children with cancer.

**Method:** Cross-sectional study was conducted at Aga Khan Hospital, pediatric oncology clinics during January 2011 to June 2011. 100 mothers of cancer children were enrolled. Pre-coded

validated questionnaire regarding mothers and child's demographics, level of social support along with HAM-D (depression screening and severity scale) was used. Data was analyzed using SPSS (19.0), frequencies, and proportions were reported accordingly. Chi-square test was used to identify the related factors.

**Results:** 78% mothers found depressed. 69% had mild, 25% moderate, 5% severe and 1% had very severe depression. 61.5% (n=48) mothers with higher education had depression (p=0.041). Mothers having 3 or less children (51.3%; n=40) were found to be more depressed (p=0.030). Age of children and financial burden as perceived by mothers were also related with depression (p= <0.05). Mothers having husband's help were found to be less depressed (p= 0.023).

**Conclusion:** Majority of mothers were found to be depressed. It is suggested that early non-therapeutic and/or therapeutic interventions are required to help mothers cope with their situation.

**Keywords:** Mothers, cancer children, caregiver depression

#### 16.24

##### GAP IN THE UTILIZATION OF MATERNITY SERVICES IN KENYA. COAST PROVINCE: ASSESSMENT OF KNOWLEDGE AND PRACTICE FOR MOTHERS

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**Background/Objective:** Newborn deliveries conducted by skilled attendant are crucial for decreasing maternal mortality, yet many women in developing countries deliver outside of dispensaries without skilled help.

**Methods:** A cross-sectional survey was conducted in the catchment areas of 10 dispensaries in July 2012. A sample size of 380 mothers with children aged 0-24 months was determined. Besides collecting quantitative information, there was Focus Group Discussions with mothers and Traditional Birth Attendants (TBAs) while Key Informant Interviews were conducted with local leaders.

**Results:** One out of four mothers (23%) completed all four of the required Ante Natal Care visits. More than half (55%) of them were not able to recognize at least three signs and symptoms of risk pregnancy. Less than half (48%) of them had a home delivery. Less than half of them (48%) were examined by health worker after delivery. Negative attitude by the health staff, non availability of the health staff after working hours, long distance without reliable transportation, delivery occurring too fast to get to a facility were key determinants of home delivery. There were 61% of the mothers reporting not using any FP method citing side effects (11%), fear of side effects (21%); breast feeding (15%) and spouse objection (14%) as main contributing factors.

**Conclusion:** The survey findings indicate that utilization of maternal health services continues to be a challenge. The new MCH project will address the awareness gap, early identification

of risk pregnancies and promoting early referrals, and partnership with TBAs attending to pregnancies and deliveries.

**Keywords:** Maternity services, practice for mothers, community health

#### 16.25

##### GESTATIONAL DIABETES MELLITUS IN PAKISTAN: FREQUENCY USING UPDATED CRITERIA

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**Objective:** Gestational diabetes mellitus (GDM) is one of the most common medical complications of pregnancy. Our primary objective is to determine the frequency of GDM in pregnant females tested with 75-g Oral Glucose Tolerance Test (OGTT) using new criteria for diagnosis by American Diabetic Association (ADA). Secondary objective is to evaluate the value of fasting plasma glucose (FPG) to detect GDM.

**Method:** Analysis of 75-g OGTT test performed in pregnant females during January 2010 and December 2011 at the clinical laboratory was done. The cuts off for diagnosis used were any of the plasma glucose value exceeding the upper limit; Fasting =92 mg/dl; or 1 h =180 mg/dl; or 2 h =153 mg/dl. 10913 pregnant females were registered for 75-g OGTT. Out of these 52 cases were excluded due to overt diabetes as diagnosed on basis of FPG =126 mg/dl.

**Results:** Mean age of females were 27.92±4.85 years. Females in age group 25-29 years were the most tested for GDM, 4512 (41.5%). Using current ADA criteria out of 10861 females 2189 (20.2%) had GDM. While using previous criteria only 874 (8.0%) were labeled GDM. The area under the ROC curve of FPG to detect GDM was 0.869 (95% CI 0.863-0.875). With current diagnostic cuts off used, the sensitivity of FPG was 61.53%.

**Conclusion:** The frequency of GDM is raised in Pakistan using new criteria of diagnosing GDM proposed by ADA.

**Keywords:** Gestational, diabetes mellitus, Pakistan

#### 16.26

##### GIANT RHABDOMYOSARCOMA OF THE CHEST WALL WITH RIGHT MIDDLE LOBE INVOLVEMENT- MULTIMODALITY TREATMENT

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**Case Report:** 5 year old boy presented with painless swelling over the right chest wall. Excisional biopsy was performed at a district hospital which showed it to be rhabdomyosarcoma. Local recurrence occurred within two months and on CT scan was found to be involving 2/3rd of the right hemithorax. Patient was then referred to pediatric oncologist and was given multiple

cycles of neo-adjuvant chemotherapy to reduce the size of the tumor. The patient was then taken to the OR and entire upper chest wall was resected along with the lateral segment of the middle lobe. The chest wall was then reconstructed with prolene mesh and serratus anterior muscle flap. The post-operative recovery was uneventful. The tumor was found to be completely resected with negative margins.

*Conclusion:* Rhabdomyosarcoma of chest wall in children should have a multimodality treatment such as pre-operative chemotherapy, surgical resection, post-operative chemotherapy and even radiation. Without multimodality treatment, the recurrence rates are very high.

*Keywords:* Rhabdomyosarcoma, chest, chemotherapy

### 16.27

#### GIVING BEST OF BOTH WORLDS TO CHILD: ROLE OF NURSES AND MIDWIVES FOR INVOLVING MEN IN MATERNAL CARE

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*Objective:* It is now increasingly being acknowledged that in order to accomplish improvements in reproductive health men's active participation should be encouraged. Both positively and negatively, directly and indirectly, the reproductive health of women is impacted by men.

*Purpose:* To correlate the practices of involving men in a maternity clinic with contemporary literature.

*Method:* Systemic review of literature from 10 research articles from 2001 to 2011 was conducted through electronic medium by using Jstor, JPMA, SAGE and Google search engines.  
*Results:* Positive health benefits to women and their children were shown when men supported their women during maternal period. During labor midwives and nurses can play a pivotal role as noted by Gungor (2007) which projected positive effects, such as alleviated labor pain, reduced stress, and shorter duration of labor, less medication need, increased maternal satisfaction, and a positive attitude toward growing into motherhood.

*Conclusion:* Researches explicitly suggest that men's involvement aid to prevent complications during pregnancy, at delivery, or during an abortion (Singh, 2009). It is commonly observed that men do not accompany their wives to antenatal clinics because they are not aware about different needs and requirements to promote reproductive health of women especially during pregnancy. Health care institutes and professionals can play a significant role in reducing maternal mortality and mortality by providing counseling sessions to male partners.

*Keywords:* Men, maternal care, midwives

### 16.28

#### HARMFUL TRADITIONAL PRACTICES AND BELIEFS PERFORMED DURING PREGNANCY AND CHILD BIRTH IN PAKISTAN

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*Objective:* On the National level, the status of maternal health is poor in Pakistan. An estimated 30,000 women die each year due to pregnancy related causes. It is estimated that about 500 maternal deaths occur per 100,000 live births each year in Pakistan (Safdar, 2009). *Purpose:* To scrutinize the harmful practices during maternal period and correlate it with literature.

*Method:* Systemic review of literature from 09 research articles from 1999 to 2011 was conducted through electronic medium by using JPMA, SAGE and Google search engines.  
*Results:* These practices contribute in the transmission of human immunodeficiency virus as a result of exposure to blood, untrained per vaginal monitoring, pulling the baby from uterus by force, using of knife or razor blades for cutting libia minora, umbilical cord cutting with hunting arrows and other dreadful practices leading to hemorrhages and infections. A practice of manual compression is observed in cases of obstructed labor, which is again a hazardous. These practices are usually performed by the untrained traditional birth attendants (TBA). (Fatimi, Gulzar & Kazi, 2005) notifies Traditional birth attendants (TBAs) assist in 60%-80% of all deliveries globally and even more in the rural areas of developing countries. Also, in south Asia, an estimated 80% of all deliveries were attended at home and mostly by TBAs (Fatimi, Gulzar & Kazi, 2005)

*Conclusion:* Health care institutes should educate TBAs and midwives with sufficient competencies to care for women not only in normal pregnancy, birth and the postnatal period but also to deal with certain abnormalities and to safely transfer women and babies, when necessary. This could also be achieved through continuity medical education (CME).

*Keywords:* TBA, pregnancy, harmful traditional practices

### 16.29

#### HEALTH SEEKING BEHAVIOR OF FEMALE MEDICAL STUDENTS REGARDING COMMON GYNECOLOGICAL PROBLEMS

*Hussain Shallwani, Salima Bhimani, Tooba Ali, Fahad Jamil Chaudary, Anam Akbar Waheed, Quratulain Merchant, Anum Butt, Akbar Mistry, Ali Ahsan Azeem, Zafar Fatmi  
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*Objective:* For gynecological complaints of vaginal discharge or menstrual disorders, women may not seek health-care attributing their symptoms to dietary or other life-style factors. This study is aimed at determining the health seeking behavior of female medical students of Aga Khan University for common gynecological complaints.

**Method:** This cross sectional study was conducted using a self-administered questionnaire. Female medical students from all five years were included. Participants were inquired about dysmenorrhea, heavy menstrual bleeding, menstrual irregularity and abnormal vaginal discharge.

**Results:** 211 students participated in the study, with a mean age of  $20.9 \pm 1.6$  years. 146 (69.2%) students admitted that they had ever experienced at least one of the common gynecological symptoms; of them, only 65 (44.5%) had visited a doctor. 114 (78.1%) students had discussed the symptom with someone, mostly their mothers (70.5%); 84 (57.5%) students employed self-medication for their complaint. Not recognizing the symptom as a real problem was the most common reason for not visiting a doctor. Financial constraints, discouragement from family, social taboo and feeling of embarrassment were the factors least likely to influence health-seeking behavior for the students.

**Conclusion:** Although a higher proportion of medical students sought health care for common gynecological complaints as compared to the general population, majority of medical students had never visited a doctor for their gynecological symptoms. Efforts are needed, even among individuals pursuing medical education, to increase awareness of gynecological diseases and prompt timely visits to physicians.

**Keywords:** Health-seeking behavior, Medical students, Gynecological symptoms/complaints

### 16.30

#### IMPROVING ROUTINE IMMUNIZATION COVERAGE THROUGH EDUCATIONAL MESSAGES DELIVERED DURING POLIO NIDS IN PAKISTAN: A CLUSTER RANDOMIZED TRIAL

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**Objective:** Routine immunization coverage rates in Pakistan remain low, with less than 60% of children 12-23 months of age receiving Pentavalent-3 immunization. Interventions promoting vaccine use have proven cost-effective in improving immunization coverage rates in less literate populations in high-income countries. This study aims to assess if educational messages delivered by vaccinators during supplementary immunization activities (SIAs) held for polio eradication, can be used to improve routine immunization coverage in Pakistan.

**Method:** A cluster randomized trial with three intervention and one control group, at Karachi and Hyderabad Sindh. In the intervention group, parents having children aged 3 – 12 months will receive pictorial vaccine promotion messages and child's vaccination card verification at home delivered by Polio NID vaccinators/volunteers. The control group will have status quo. We estimated that a sample of 63 clusters, with 8 items per cluster, in each study arm will be sufficient to detect a 10% difference in routine immunization coverage rates between the control, and each of the intervention groups, with 80% power

and  $\alpha = 0.05$ . Age appropriate routine vaccination, mother's knowledge about routine childhood immunization, and vaccination card retention are the primary and secondary outcome between intervention and control groups.

**Results:** Work in progress.

**Conclusion:** This study will underscore the importance of educational messages delivered during polio NIDs for improving routine immunization coverage in Pakistan.

**Keywords:** Routine EPI, polio NIDs, vaccine coverage

### 16.31

#### IS PERSISTENT NON BILIOUS NEONATAL VOMITING IS A SURGICAL PROBLEM?

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*Departement of Surgery, Aga Khan University, Karachi*

**Objective:** We are presenting a rare case of male new born with persistent nonbilious vomiting. The diagnosis was delayed for several weeks due to lack of awareness resulting in significant morbidity.

**Method:** History A full term baby boy, history of polyhydromnias, presented at 30th day of life with persistent non bilious vomiting. He was born by C – Section due to non progression of labor with good Apgar score and normal passage of meconium. He had persistent vomiting since then requiring multiple hospital admissions for correction of dehydration. On arrival he was sick looking with severe dehydration, emaciated with visible peristalsis at the epigastrium. There were no other associated congenital anomalies present. After initial resuscitation an abdominal X ray was planned, which revealed single air bubble in the upper abdomen with no gas in the distal pylorus which raised the suspicion of pyloric atresia. The upper gastrointestinal contrast study confirmed that there was no passage of contrast beyond the pylorus. After correction of electrolytes and appropriate resuscitation an exploratory laparotomy was performed. There was type 1 pyloric atresia with no distal obstruction. We did Mickulicz – Heineke pyloroplasty with transgastric tube jejunostomy and inserted a Hickman line for postoperative intravenous nutrition. Tube feeding was started on 6th postoperative day and on 7th postoperative day a contrast study was performed which showed free passage of contrast beyond the pylorus. He had initial feeding difficulties with intermittent vomiting which responded to prokinetic agents. He has been discharged on full feed and he is currently in our regular follow up in the clinic.

**Results:** This is a descriptive case report

**Conclusion:** All children with persistent non bilious vomiting should be evaluated for pyloric atresia. There should be high index of suspicion for the timely diagnosis. Initial management should be proper optimization of electrolytes followed by definitive correction.

**Keywords:** Pyloric atresia, non bilious vomiting, single air bubble

### 16.33

#### PARENTAL PERCEPTIONS SURROUNDING POLIO AND SELF-REPORTED NON-PARTICIPATION IN POLIO SUPPLEMENTARY IMMUNIZATION ACTIVITIES IN KARACHI, PAKISTAN

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**Objective:** To assess parent's knowledge and perceptions surrounding polio and polio vaccination, self-reported participation in polio supplementary immunization activities (SIAs) targeting children aged < 5 years, and reasons for non-participation.

**Method:** The mixed methods study began with a cross-sectional survey in Karachi, Pakistan. A structured questionnaire was administered to assess parental knowledge of polio and participation in polio SIAs conducted in September and October 2011. Additionally, 30 parents of Pashtun ethnicity (a high-risk group) who refused to vaccinate their children were interviewed in depth to determine why. Descriptive and bivariate analyses by ethnic and socioeconomic group were performed for quantitative data; thematic analysis was conducted for qualitative interviews with Pashtun parents.

**Results:** Of 1017 parents surveyed, 412 (41%) had never heard of polio; 132 (13%) did not participate in one SIA and 157 (15.4%) did not participate in either SIA. Among non-participants, 34 (21.6%) reported not having been contacted by a vaccinator; 116 (73.9%) reported having refused to participate, and 7 (4.5%) reported that the child was absent from home when the vaccinator visited. Refusals clustered in low-income Pashtun (43/441; 9.8%) and high-income (71/153; 46.4%) populations of any ethnic background. Low-income Pashtuns were more likely to not have participated in polio SIAs than low-income non-Pashtuns (odds ratio, OR: 7.1; 95% confidence interval, CI: 3.47–14.5). Reasons commonly cited among Pashtuns for refusing vaccination included fear of sterility; lack of faith in the polio vaccine; scepticism about the vaccination programme; and fear that the vaccine might contain religiously forbidden ingredients.

**Conclusion:** In Karachi, interruption of polio transmission require integrated and participatory community interventions targeting high-risk populations.

**Keywords:** Polio SIAs, Polio NIDs, Polio Pakistan

### 16.34

#### PEDIATRICIANS KNOWLEDGE, ATTITUDE AND PRACTICES CONCERNING DIAGNOSTIC CT SCAN RADIATION EXPOSURE IN CHILDREN

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**Objective:** Dramatic increase in the pediatric CT during the past decade has led to the initiation of Image Gently campaign with the objective to educate physicians and radiologists to minimize

radiation exposure in children. The aim of our study was to evaluate knowledge and attitude of pediatricians on the topic before essential steps are taken to implement radiation minimization

**Method:** A cross-sectional, interview based survey was carried out using a sample of 400 recruited through convenient sampling.

Two tertiary care centers in Karachi were chosen

**Results:** Of all the interviews conducted majority agreed that CT provides new and vital information (76%), it has influenced patient management (78%) and patients' medical outcomes (72%). Most of the respondents underestimated the radiation exposure (67%) and many weren't aware of the amount of radiation received during one CT (58%). Seventy eight percent were of the opinion that CT scan increases the risk of malignancy, most thought that contrast CT leads to greater radiation absorption (57.5%), and that there is a difference in the amount of radiation absorbed during an adult CT as compared with pediatric CT (57%). Seventy four percent of the pediatricians do not inform their patients about the associated risks and most (47%) believe that radiologist/radiographers should do so. Sixty one percent concurred that a lot of unnecessary scan are being ordered in current practice.

**Conclusion:** The results of the study will guide us in launching a focused approach to improve the knowledge and awareness of the pediatricians in order to minimize the radiation exposure.

**Keywords:** Pediatricians, radiation, computed tomography

### 16.35

#### PERCEPTIONS AND EXPERIENCES OF WOMEN IN KARACHI, PAKISTAN REGARDING SECONDARY INFERTILITY: RESULTS FROM A COMMUNITY-BASED QUALITATIVE STUDY

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**Objective:** The prevalence of infertility in Pakistan is 22% with primary infertility at 4% and secondary infertility at 18%. This study explored perceptions and experiences of women in Karachi, Pakistan regarding the causes, treatment-seeking behavior for and consequences of secondary infertility

**Method:** Focus group discussions and in-depth interviews with married women explored their perceptions and experiences for issues related to secondary infertility

**Results:** The knowledge of women about the causes and scientific treatment options for infertility was limited resulting in inclination for traditional unsafe health care. Infertility was stated to result in marital instability, stigmatization and abuse specially for women with no live child.

**Conclusion:** Since infertility can have a serious effect on both the psychological well-being and the social status of women in Pakistan, effective interventions are the need of the day. There is a dire need for health education and counseling to be integrated into infertility management plans.

**Keywords:** Secondary infertility, infertility management plan, health education

**16.36****POSTERIOR MEDIASTINAL BRANCHIAL CLEFT CYST:  
AN UNUSUAL PRESENTATION SITE.**

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**Objective:** Branchial cleft cysts are congenital anomalies which usually express in the form of cystic mass in the neck. The most common branchial arch anomaly is of second branchial arch; that accounts for almost all (95%) of the cases, followed by the first arch about 1%. There are very few documented cases of the 4th branchial arch anomaly, especially along with mediastinal involvement. We report here an unusual presentation of branchial cleft.

**Method:** A 2 ½ year old Kenyan girl presented with recurrent pneumonia and difficulty in swallowing. She had on and off episodes of coughing with fever. Examination revealed vitally normal with decreased left lower zone air entry with bilateral coarse crepitations. Chest X-ray showed left lower lobe atelectasis. Considering her deglutition history barium swallow performed that showed mid-esophageal indentation pushing from the left side toward the right. CT Chest was done with an NG tube. The NG tube was placed to delineate the esophagus from inside that showed a homogenous mass at the level of carina surrounded by ascending and descending aorta in the posterior mediastinum with left lower lobe collapse with no intra-lesional calcification was seen. A posterolateral thoracotomy was carried out which revealed a cystic mass with smooth surfaces (5x5cm) in the posterior mediastinum attached with the esophagus, surrounded by ascending and descending aorta. Histopathology revealed branchial cleft cyst predominately lined by stratified squamous epithelium, with lymphocytes predominance.

**Conclusion:** Posterior mediastinum is a very unusual and unexpected presentation of branchial cleft cyst. One should consider branchial arch remnant presenting as cystic posterior mediastinal swelling once all common differentials were ruled out.

**Keywords:** Bronchogenic cyst, Branchial Cyst, Mediastinum

**16.37****PREGNANCY OUTCOMES OF PAKISTANI WOMEN WITH  
MENTAL DISORDERS: RETROSPECTIVE COHORT  
STUDY.**

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**Objective:** Limited data on pregnancy outcomes of women with mental illness are available from Pakistan. We aim to determine and compare maternal and fetal outcomes in women with exposure and non exposure to psychotropic medications.  
**Method:** We conducted a retrospective cohort study on women who presented to deliver at AKUH during 2006 -2010. Exposed

group incorporated women diagnosed with a mental disorder and prescribed psychotropic at least three months prior to parturition while nonexposed included nondiagnosed subjects having no prior exposure to psychotropic. The latter group was matched for age  $\pm$ 5 years and date of admission  $\pm$  3days. Main outcome variables measured included co morbidities, antepartum events, mode of delivery utilized.

**Results:** We identified 118 women in the exposed group and 119 in non-exposed group. Co-morbidities were higher in the exposed group (35% v 21.8%), with Hypertension (6.8% v 1.6%) being the commonest. For the index pregnancy, exposed group had more pregnancy induced hypertension (27% v 6.7%), Gestational diabetes (57% v 50), emergency C-Section (20.3 % v 16.4%) and Preterm labor (15.3% v 9.4%). The study did not reveal any increased risk of fetal abnormality, still birth or withdrawal symptoms in the exposed groups.

**Conclusion:** A concerning high rate of hypertension in exposed group prompts further exploration. Absence of neonatal withdrawal symptoms in the exposed group may result from poor awareness to the effects of psychotropic medications. We recommend an increased collaboration between mental and obstetric health services in providing care to women with mental disorders

**Keywords:** Psychotropic, Maternal Outcome, Mental Disorders

**16.38****PROMOTING MOTHERS' PSYCHOLOGICAL HEALTH  
AFTER FETAL LOSS - DESCRIPTIVE CASE REPORTS**

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**Objective:** Maternal mortality and morbidity is alarming and need extensive interventions. The psychosocial and psychological perspectives of childbirth need attention and vigorous trainings for health-care workers. Thus, multi-agency strategies in regard to the promotion of perinatal mental well-being and successful transition to parenthood in relation to fetal loss/ demise are explored.

**Method:** I systematically reviewed the published literature to identifying cases, reports and interventions pertaining to the objective. For this, I used CINAHL, Pubmed, Sage Publications, Wiley online library, Medscape Nurses News as data base. With help of these database, I included articles from 2002-2012 later going through about more than 60 articles, 30 were selected. These articles included CEMACH (Confidential Enquiry into Maternal and Child Health) 2003 and 2007, CMACE 2011, CLIMB 2003, British Journal of Obstetrics and Gynaecology 2005, American Behavioral Scientists 2002, Clinical Neuropsychiatry 2006, SIGN 2002, DHSSP 2010, Journal of Health Psychology 2010. Furthermore I also reviewed 2 studies of Diakonover University College Oslo, Norway and Northern Ireland Strategy plan 2006-2011.

**Conclusion:** If bereavement is not inclined to positive side, it gives negative influence on women's health. Through multi-disciplinary teamwork, strategies and management with appropriate and timely referrals to psychiatrists can improve health status of women. Patient education pamphlets and community referrals to support-groups need to be strengthened



in conjunction with hospital's follow-up appointments. Guidance towards post-partum stress-support group and call-centre support can be given for smooth transition to parent-hood. It has alleged that the increased attention in implementing policies and protocols will reduce such burdens of disease. World Health Organization put forward that the efforts need to be expanded in order to accelerate improvement towards reducing the disparity between developing and developed countries. It is of prime importance that all countries must have the clinical practice guidelines and policies such as CEMACH for vulnerable group. The aim of these policies should focus on preventing, detecting and reducing the number of mortalities and morbidities.

*Keywords:* Fetal loss, bereavement, perinatal bereavement grief scale, Edinburgh postnatal depression scale

### 16.39

#### RANDOMIZED CONTROLLED TRIAL OF MEAT COMPARED WITH MULTIMICRONUTRIENT-FORTIFIED CEREAL IN INFANTS AND TODDLERS WITH HIGH STUNTING RATES IN DIVERSE SETTINGS

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*Objective:* To test the hypothesis that daily intake of 30 to 45 g meat from 6 to 18 mo of age would result in greater linear growth velocity and improved micronutrient status in comparison with an equicaloric multimicronutrient-fortified cereal. *Method:* This was a cluster randomized efficacy trial conducted in the Democratic Republic of Congo, Zambia, Guatemala, and Pakistan. Individual daily portions of study foods and education messages to enhance complementary feeding were delivered to participants. Blood tests were obtained at trial completion. *Results:* A total of 532 (86.1%) and 530 (85.8%) participants from the meat and cereal arms, respectively, completed the study. Linear growth velocity did not differ between treatment groups: 1.00 (95% CI: 0.99, 1.02) and 1.02 (95% CI: 1.00, 1.04) cm/mo for the meat and cereal groups, respectively ( $P = 0.39$ ). From baseline to 18 mo, stunting [length-for-age z score (LAZ) < -2.0] rates increased from ~33% to nearly 50%. Years of maternal education and maternal height were positively associated with linear growth velocity ( $P = 0.0006$  and  $0.003$ , respectively); LAZ at 6 mo was negatively associated ( $P < 0.0001$ ). Anemia rates did not differ by group; iron deficiency was significantly lower in the cereal group. *Conclusion:* The high rate of stunting at baseline and the lack of effect of either the meat or multiple micronutrient-fortified cereal intervention to reverse its progression argue for multifaceted interventions beginning in the pre- and early postnatal periods. This trial was registered at clinicaltrials.gov as NCT01084109

*Keywords:* Growth, development, pediatrics

### 16.40

#### RESPIRATORY PATHOGENS IN PAKISTAN

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*Objective:* Approximately 90,000 of all under-5 deaths in a year are associated with acute respiratory infections, especially pneumonia in Pakistan. Since there have been no previous comprehensive studies therefore we aim to determine the etiology of ARI and febrile illness in pregnant women and children in Pakistan, using cutting edge diagnostic modalities including real-time PCR and automated culture methods. *Method:* We are conducting a longitudinal observational study at Bilal, semi urban area of Karachi, where we are following a cohort of 380 pregnant women from the first trimester and then their newborns from birth through 24 months of age. The participants are visited at home once every week to record any fever or respiratory symptoms and are then referred for treatment of observed illnesses. Each episode of fever (100.40F/38.0C), influenza like illness (in pregnant women) and severe pneumonia (in children) is eligible for laboratory testing of blood and if any respiratory symptoms present then nasopharyngeal swab also. *Results:* So far 376 women have delivered 254 newborns as live births, 12 deliveries were still births and 33 spontaneous abortions were recorded, with the latter being commensurate with national rates of termination with 1 in 7 pregnancies resulting in spontaneous abortions. Until now '5' Eligible Episodes per 100 pregnancy years of follow up and '23' Eligible Episodes per 100 child years of follow up have been recorded. *Conclusion:* The results of this study will help discover the etiologies for ARI and febrile illness in pregnant women and children of Pakistan.

*Keywords:* Severe Pneumonia, influenza-like-illness, febrile illness

### 16.41

#### RETROSPECTIVE REVIEW OF THE OUTCOMES OF INTRAVENOUS IMMUNOGLOBULIN IN NEONATAL SEPSIS

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*Objective:* Neonatal sepsis is an important cause of morbidity and mortality despite appropriate antibiotic treatment. Premature infants are particularly at high risk of infections due to underdeveloped immunity and dearth of maternal transport of immunoglobulins to the fetus. Some literature support the administration of intravenous immunoglobulin (IVIG) may improve the immune response of neonate providing IgG. *Method:* Review of IVIG utilization in neonatal intensive care unit in last one year was performed. Septic parameters like C-reactive protein (CRP), WBC, neutrophil and platelet count were assessed pre and post IVIG administration along with determining the all-cause mortality.

*Results:* Our results were consistent with most international literature, a mixed picture was found. All-cause mortality was

41% in IVIG treated babies (literature reports overall 50 – 60 % death rate of neonatal sepsis), whereas improvement in WBC count was found in 43% babies, platelet in 88 % and CRP in 20 % babies. The total dose range of IVIG administered was 500 – 2000 mg/kg. Babies administered with two doses of IVIG had slightly better outcomes of septic parameters.

*Conclusion:* The role of IVIG in the management of neonatal sepsis is much debatable and requires randomized controlled studies with large sample size. There was some improvement seen in septic parameters and all-cause mortality in IVIG treated babies, however, considering the cost of the therapy, the clinicians should carefully select the candidates for IVIG therapy.

*Keywords:* IVIG Use in Neonates, Neonatal Sepsis Treatment Options, Intravenous Immunoglobulines

#### 16.45

##### RISK FACTORS FOR ADVERSE MATERNAL AND NEONATAL OUTCOMES: A PROSPECTIVE, OBSERVATIONAL STUDY FROM PAKISTAN

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*Objective:* The majority of neonatal deaths occur in low and middle-income countries. Infections, birth asphyxia, low birth weight and the consequences of prematurity are among the leading causes of neonatal mortality and are largely preventable with appropriate care.

*Method:* To explore risk factors for adverse outcomes, i.e. severe illness or death by day 28 we used data from a prospective randomized study of chlorhexidine vaginal and newborn wiping of predominantly low-risk deliveries at tertiary hospitals conducted in Karachi, Pakistan from 2005 to 2008. Follow-up visits at home were conducted at 7 and 28 days post-delivery. 5,008 women were enrolled at three tertiary hospitals and 97% followed to 28 days post-delivery. The 28-day neonatal mortality rate, was 20.3 per 1000 live births. Maternal mortality at a rate of 60 per 100,000 was approximately 6 times greater than that seen in high-income countries.

*Results:* Statistically significant factors associated with newborn mortality or severe illness included mother being unregistered (adjusted OR 1.9; 95% CI 1.1, 3.3) or referred when presenting at labor and delivery (adjusted OR 2.9; 95% CI 1.2, 7.0 ) low birth weight (adjusted OR 1.5; 95% CI 1.0, 2.3), low Apgar Score (adjusted OR 6.5; 95% CI 4.0, 10.6), admission to a newborn intensive care unit (adjusted OR 25.0; 95% CI 20.0, 33.3) and lack of maternal hand-washing (adjusted OR, 1.8; 95% CI 1.2, 2.8).

*Conclusion:* Although most women were low risk and all delivered in a hospital, a relatively high rate of maternal and perinatal mortality and newborn illness was reported. Risk factors for neonatal mortality and morbidity included factors related to the condition of the infant at birth and type of maternal admission. Lack of maternal hand washing was also significantly associated

with adverse outcomes. These data suggest that in addition to interventions that improve evidenced-based hospital care for the mother and newborn, relatively simple interventions such as promoting hand washing at home is important for reducing maternal and newborn mortality.

*Keywords:* Risk factors, maternal outcomes, neonatal

#### 16.46

##### RISK FACTORS FOR SECONDARY INFERTILITY AMONG WOMEN IN KARACHI, PAKISTAN

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*Objective:* Secondary infertility in developing countries is mostly attributable to blockage of the fallopian tubes due to adhesions caused by reproductive tract infections. There is a dearth of information on the prevalence and causes of secondary infertility from Pakistan. This paper presents results on factors associated with secondary infertility among married women in Karachi, Pakistan.

*Method:* A matched case-control study was conducted. Cases were women aged 15-35 years with history of at least one previous conception and currently seeking treatment for secondary infertility. Controls were women residing in the neighborhood of cases with at least one live birth and not taking treatment for secondary infertility. The age of controls was matched by  $\pm 5$  years to that of cases. Data was collected from June to August 2003. Conditional logistic regression was used to determine crude and adjusted odds ratios (OR) with corresponding 95% confidence intervals (CI) for factors associated with secondary infertility.

*Results:* The final multivariate logistic regression model revealed that after adjusting for age, cases were more likely to be the housewives (AOR=?2.6, 95% CI: 1.5-4.4), had used inappropriate material to absorb blood during menstruation (AOR=?9.0, 95% CI: 5.0-16.4), and at their last delivery, had a birth attendant who did not wash hands with soap and water (AOR=?3.0, 95% CI: 1.4-5.7). Moreover, women with secondary infertility were more likely to report current or past history of having STI symptoms (AOR=?3.6, 95% CI: 2.4-5.6) and use of intra-vaginal indigenous medicines during their last postpartum period (AOR=?3.1, 95% CI: 1.6-5.7).

*Conclusion:* We recommend health education and awareness messages for safe practices during menstruation, delivery, and the postpartum period for women in general. Additionally, sanitary napkins should be made available at an affordable cost, and safe delivery kits should contain educational/pictorial brochures for appropriate hand washing skills.

### 16.47

#### ROLE OF ANTENATAL DOPPLER SONOGRAPHY

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**Objective:** To evaluate the diagnostic value of antenatal Doppler for detection of "Vein of Galen Aneurysmal Malformation" (VGAM).

**Method:** VGAM seen in only 2.5/100,000 live births (=1%) [1] Symptomatic Neonate presents with severe cardiorespiratory alterations at or shortly after birth, with the majority of cases (94%) having high-output cardiac failure [2, 3].  
**Results:** We report a case of VGAM associated with PDA, ASD with PPHN & stenosis of Right Pulmonary vein. Ultrasound finding at 36 weeks suggested BPD with 95th %tile & HC with 86th %tile with unilateral Prominent Posterior Horn of lateral Ventricle measuring (LXW) 8.6 X10.5 mms, "Polyhydramnios". Doppler shows high vascular flow in this cystic area & tracing its continuation up to great sinus, finding suggestive of "VGAM". A Male baby delivered by c/s with A/S 7/1 & 9/5 minutes, 2.9 kg, Delayed cry umbo-bagging 2 to 3 puffs given then baby become pink vitally stable. HR 150/min, R/R 58/min. Blood pressure 60/36mm-Hg, Oxygen Saturation 95%, Temperature 37? C. 2+1 in UC, S1 + S2 Murmur heard at left lower sternal border grad 2 in intensity. Left subcostal area continuous murmur. No signs of cardiac failure. Ultrasound brain showed: A cystic area in the region of vein of Gallen measuring 2.2 by 1.4 cm. Showing color flow with Venus spectral from appearance raising the possibility of vein of Gallen aneurysm. Echo was done showed: ASD 5mm with left to right shunt. PDA intensive 2.5 mms with BD shunt. Severe PPHN. Stenosed Rt pulmonary veins. Sever TR 60 .LEVF: 80 % . Mildly dilated right sided cardiac chambers. Patient monitored for signs of cardiac failure, baby remains vitally stable, Baby was discharged & advised for follow up in clinic.

**Conclusion:** Doppler study is useful in Pre-natal diagnosis of VGAM. REFERENCES: 1. Sasidharan C, Anoop P, Vijayakumar M, Jayakrishnan M, Reetha G, Sindhu T: Spectrum of clinical presentations of vein of galen aneurysm. Indian Journal of Pediatrics 2004, 71:459-463. 2. Rodesch G, Hui F, Alvarez H, Tanaka A, Lasjaunias P: Prognosis of antenatally diagnosed vein of Galen aneurysmal malformations. Childs Nerv Syst 1994, 40(11):1-31. 3. Mitchell PJ, Rosenfeld JV, Dargaville P, Loughnan P, Ditchfield MR, Frawley G, Tress BM: Endovascular management of vein of Galen aneurysmal malformations presenting in the neonatal period.

**Keywords:** VGAM, sonography, doppler

### 16.48

#### ROLE OF HYOSCINE BUTYL BROMIDE (BUSCOPAN) IN SHORTENING THE ACTIVE PHASE OF FIRST STAGE OF LABOR IN PRIMIGRAVIDAS

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**Objective:** To determine the mean difference in duration of active phase of first stage of labor in primigravidas on hyoscine butyl bromide (buscopan) versus placebo.

**Method:** A total of 108 women from the labor suite of Jinnah Postgraduate Medical Center; and fulfilling the inclusion criteria were included in this study. Patients were divided in two groups, 54 patients in the study group were received hyoscine butyl bromide through intravenous route at a dose of 20mg and 54 patients in the control group were receive no drug. Partogram was monitored to asses the progress of labor, Duration of active phase of first stage of labor was monitored of all patients in each group and recorded on partograph.

**Results:** The mean age in control group was 24.3 ±3.3 years and mean age in HBB group was 23.5 ±3.1 years. In control group mean total duration of labor was 553.8 ±155.3 min. In HBB group mean total duration of labor was 500.3 ±110.6 min. The p-value is 0.0417 (< 0.05)

**Conclusion:** Hyoscine butylbromide is effective in significantly reducing the duration of the first stage of labor and that it is not associated with any obvious adverse outcomes in mother or neonate.

**Keywords:** Primigravidas, Hyoscine butylbromide, First stage of labor, Partogram

### 16.49

#### SEX CORD-STROMAL TUMOURS OF THE OVARY. A CLINICOPATHOLOGICAL SPECTRUM; 20 YEARS EXPERIENCE

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**Objective:** Sex-cord-stromal tumors of the ovary are rare neoplasms and they differ from the common surface epithelial tumors in clinical and morphological features leading to many important issues in differential diagnosis. Most of the tumors have better prognosis than epithelial neoplasms and present at early stage I, however occasionally metastasis and recurrence is seen. Objectives: To see the various histomorphological patterns and clinical features along with follow-up in our set-up.

**Method:** All reported cases of sex cord stromal tumors of ovary in the Section of Histopathology AKU during 1992 to 2012 were retrieved and slides were reviewed. Clinical and pathological features were noted.

**Results:** A total of 484 cases of sex cord stromal tumors were retrieved. The age ranged from 1 to 92 years with mean + SD was 44.3 + 16.8 years. The right ovary was involved in 199 cases (55.1%) and left in 162 cases (44.9%), Bilaterality was observed in 4 cases (n=361). Of the different types of sex-cord stromal tumors, most common was adult granulosa cell tumor 211(43.5%) (FIG-1&6). 24 Juvenile granulosa cell tumors were retrieved (4.9%) (FIG2&3). Other types were fibromas 98 (20.2%) (FIG-4) with 13/98 mitotically active and cellular fibromas, fibrothecomas 47(9.7%), thecomas 26(5.3%), sertoli-leydig cell tumors 34(7%) and sclerosing stromal tumors 26(5.3%)(FIG-5). 10 cases of steroid cell tumor and 4 cases each of sex cord tumor with annular tubules and gonadoblastoma. The mean size was 10.54 cms. Immunohistochemical studies were also applied. 94% of the tumors were stage I at the time of diagnosis.

**Conclusion:** Sex cord stromal tumors are uncommon ovarian tumors with wide age range and diverse histological types having better prognosis than epithelial tumors. Immunohistochemical markers overlap with epithelial tumors so there is need to distinguish these two.

**Keywords:** sex cord stromal tumor, ovarian tumor, granulosa cell tumor

## 16.50

### SEXUAL ABUSE AMONG FEMALE HEALTHCARE PROVIDERS OF KARACHI, PAKISTAN

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**Objective:** To estimate the prevalence of sexual abuse among married female healthcare providers in tertiary care hospitals in Karachi, Pakistan

**Method:** A descriptive cross-sectional study was conducted among 350 married female nurses and doctors, who were recruited from three tertiary care hospitals (one public and two private). This study used the self administered modified version of "WHO Multi-country Study" (2005) tool.

**Results:** Of the total sample of 350 female married healthcare providers, 97.7% (n= 342) were reported one or more forms of domestic violence at some point in their married life. Whereby, 59.6% (n= 204) of the study participants reported sexual abuse by their husband or in-laws at some point in their married life. Out of which mainly the husband created sexual abuse, followed by brother in-law. Participants living in extended families [72.2% (n=26)], those who were undergraduate [50% (n=18)] and nurses by profession [61.1% (n=22)] experienced sexual abuse by in-laws. Furthermore, women who belong from upper middle socio-economic strata [59.1% (n=114)], age 20-30 years [46.6% (n= 90)-husband; 47.2% (n=17)-in-laws] were more prone to sexual abuse.

**Conclusion:** This study identified that sexual abuse is highly prevalent among nurses and doctors. The main perpetrators were husband and male in-laws. In the response of violence either try to fight back or remain quite. The main reason of being quite was fear of escalating violence. Socio-demographic factors were

women who were educated and professional were confronting sexual abuse to the same extent as those who were uneducated and poor. Domestic Violence (Prevention and Protection) Act 2012 has been passed but need strategies and commitment for enforcement.

**Keywords:** domestic violence, sexual abuse, healthcare providers

## 16.52

### SIGNIFICANCE OF FETAL ANOMALY SCAN

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**Objective:** Anomaly scans' examinations are usually conducted between 18-22 weeks, when the fetal anatomical structures can be visualized most clearly. Congenital anomalies occur in 2-3% of all births. They are an important cause of perinatal morbidity and mortality and account for 20-30% of perinatal deaths [1]. Survivors have mental and physical disability. The psychological trauma and cost associated with fetal abnormalities, has lead to use of ultrasound for the prenatal diagnosis as an essential part of antenatal care [2].

**Method:** Retrospective analytic study conducted from September 1st, 2007 to 31st August 2011 at Radiology AKHW&DCK. Data about fetal congenital abnormalities were collected from ultrasound patient's record; ultrasound computerized reporting system, Medical record files & obstetrical database. First Scan (only single visit of booked & OSR patients includes in this study) of patient from 14th to 40th weeks of Gestation is considered as an anomaly Scan.

**Results:** About 10810 (100%) patients were scanned, Out of these 141 (1.30 %) had different anomalies such as central nervous system, renal abnormalities, skeletal defects, GIT malformation were commonly diagnosed with relatively more prevalent in cousin marriages, However, talps, facial defects & complicated heart defects were more commonly missed or incomplete diagnosis of malformation.

**Conclusion:** The effectiveness of anomaly scan can be gauged by the lower rate of maternal & child mortality and morbidity since the use of ultrasound scans became common practice. • The diagnosis of the structural anomaly of fetus as early as 18-22 weeks results in parents' counseling and preparation for acceptance of a baby with malformation and/or timely management of the disorder. • Disseminated messages to avoid the family Marriages, which is primary cause of fetal malformation REFERENCES: 1. Dastigiri S, Stone DH, Le-Ha C, Gilmour WH. Prevalence of Congenital anomalies in Glasgow, UK. Archives of Disease of Childhood 2002;86: 257-63. 2. Van Dorsten Peter J, Hulsey Thomas C, Newman Roger B, Menard Kathryn. Fetal anomaly detection by second trimester ultrasonography in a tertiary center Am J Obstet Gynecol 1998;178:742-49.

**Keywords:** FAS (Fetal Anomaly Scan), ANS (Ante-Natal Scan)

### 16.53

#### SOCIO-CULTURAL BARRIERS TO PHYSICAL ACTIVITY AMONG FEMALES: A SYSTEMATIC REVIEW

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**Objective:** Although environmental factors may influence the ability of either gender to perform physical activity, females are more likely to be affected by the socio-cultural barriers because of their gender roles. We conducted this systematic review in order to examine the available evidence on socio-cultural barriers to physical activity among females.

**Method:** PubMed and Google scholar were used to identify studies with objective of and/or containing information on socio-cultural barriers to physical activity among females. Search returned 427 results. After thorough review 80 articles (both full text and abstracts) were found discussing the barriers to physical activity among females. After excluding studies not discussing socio-cultural barriers and those with incomplete information, 33 articles were selected for this systematic review

**Results:** Child care, household work, cultural beliefs, social isolation and unsafe neighborhood environment were leading social and cultural barriers restricting a female's ability to perform physical activity. Majority of a woman's time was spent in household work, taking care of her children and other family members. Lack of social support from family and living in extended families were main inhibitory factors whereas having family members indulged in, and observing people performing physical activity in neighborhood were positively associated with levels of physical activity among women. Lack of culturally appropriate facilities in some settings severely hampered the physical activity. It was considered a taboo for women in some societies and women were considered as inappropriately behaving while performing physical activity. However, university and college students were found unaffected by this taboo. Being new in the neighborhood such as in case of migratory populations, most women felt socially isolated. Living in rural areas, having unfavorable beliefs, living in unsafe neighborhoods, past experiences of wars were factors leading to failure of women to attain recommended levels of physical activity

**Conclusion:** Available evidence suggests that women are a disadvantaged group loaded with burden of social responsibilities. Child care, household work, cultural beliefs, social isolation and unsafe neighborhood environment are the leading social and cultural factors that restrict a female's ability to perform physical activity. Socio-cultural barriers highlighted in this systematic review provide an opportunity for designing targeted interventions

**Keywords:** Socio-cultural barriers, physical activity, females

### 16.55

#### SURVEY OF LONG TERM USE OF PICCS AND THE RISK FACTORS FOR PICC-RELATED COMPLICATIONS IN CHILDREN WITH HEMATOLOGICAL AND MALIGNANT DISORDERS AT AKUH. RISK FACTORS FOR PICC-RELATED COMPLICATIONS IN PEDIATRIC POPULATION

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**Objective:** The purpose of this study is to assess the feasibility of PICCs and determine the risk factors for PICC-related complications in pediatric patients with various types of hematological and malignant disorders by examining the characteristics of the children and such catheter features as the duration of catheterization and the complications requiring catheter removal.

**Method:** It was a retrospective cross-sectional study of all the pediatric oncology patients who had gotten a PICC line between the years January 2008 to June 2010. All the pediatric patients with hematological and malignant disorders who had difficult venous access or requiring a central venous access for a number of indications, particularly chemotherapy were referred to the department of Radiology for PICC insertion. For any prematurely removed PICC a single reason was determined. Reasons included completion of therapy, catheter-related bloodstream infection (CR-BSI), phlebitis, thrombosis, catheter occlusion, leakage or broken catheter, accidental removal or on attendant's request. The decision to remove a PICC line was made by the patient's primary physician. All the data were entered into an already formed Performa and filled by the principal investigator. **Results:** A total of 36 PICC lines were inserted in 32 pediatric oncology patients. There were no complications during the insertion of the PICC line. 22 PICC had some form of complication with a Complication rate of around 7.2/1000 catheter days. With an incidence of (n=16), line infections were the most regularly observed complication seen during the time the PICC line was in place. Line occlusion (n=5) and accidental removal (n=1). The infections were limited to line infections only. No Catheter related Blood Stream Infections were observed. **Conclusion:** PICC lines can prove to be a good replacement for the conventionally used CVC and other central venous access devices among the pediatric cancer patients. Our study indicates similar side effect profile and comparable catheter life in a developing country compared to a developed country. A larger multicentre must be done to establish its utility in our setting.

**Keywords:** PICC line, Pediatrics, Hematological disorders

### 16.56 THE EFFECT OF ANTIEMETICS IN CHILDHOOD GASTROENTERITIS

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**Objective:** Diarrheal diseases are the second leading cause of childhood morbidity and mortality in developing countries and an important cause of malnutrition. An estimated 1.87 million children below 5 years of age die from diarrhea. Vomiting associated with acute gastroenteritis (AGE) is a distressing symptom and limits the success of oral rehydration in AGE leading to an increased use of intravenous rehydration, prolonged emergency department stay and hospitalization. In this review we estimate the effect of antiemetics in gastroenteritis in children.

**Method:** We conducted a systematic review of all the efficacy and effectiveness studies. We used a standardized abstraction and grading format and performed meta-analyses for all outcomes with more than two studies. The estimated effect of antiemetics was determined by applying the standard Child Health Epidemiology Reference Group (CHERG) rules.  
**Results:** We included seven studies in the review. Antiemetics significantly reduced the incidence of vomiting and hospitalization by 54%. Antiemetics also significantly reduced the intravenous fluid requirements by 60%, while it had an insignificant effect on the ORT tolerance and revisit rates.

**Conclusion:** Antiemetics are effective for the management of gastroenteritis in children and have the potential to decrease morbidity and mortality burden due to diarrhea, when introduced and scaled up at a large scale.

**Keywords:** Antiemetics, gastroenteritis, children

### 16.59 VACCINE EFFECTIVENESS AND RISK FACTORS ASSOCIATED WITH MEASLES AMONG CHILDREN PRESENTING TO THE HOSPITALS OF KARACHI, PAKISTAN; A MATCHED CASE CONTROL STUDY

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**Objective:** To determine risk factors associated with development of measles among children less than 12 years of age presenting to the hospitals of Karachi and to find effectiveness of measles vaccine among children less than 12 years of age presenting to the hospitals of Karachi.

**Method:** Matched case control study conducted in public and private sector Hospitals of Karachi. 292 cases of measles and 292 hospital controls were invited to participate using consecutive sampling technique after the informed consent. Questionnaire based interviews were conducted to identify the risk factors of measles. And IgM level were checked in a subgroup of cases to validate case definition.

**Results:** On multivariate conditional logistic regression analysis, measles cases were more likely to have mothers with 'lower education' [adjusted mOR: 3.2(95% CI: 1.2-7.6) for '0-5 years

of schooling' and adjusted mOR: 2.2(95% CI: 1.0-5.7) for '6-10 years of schooling']. Children with measles were also more likely to be 'not' given breast milk in initial two years of life [adjusted mOR: 2.6, 95% CI 1.0-7.0]. Similarly measles cases were more likely to be classified as 'low weight' as per Modified Gomez classification [adjusted mOR: 2.7, 95% CI 1.4-5.0]. Cases were also more likely to have 'never received vaccination' [adjusted mOR: 10.1, 95% CI 4.5-22.5] and 'having no other children vaccinated at home' [adjusted mOR: 3, 95% CI 1.5-5.3]. Number of household members for every two members increase in a family was also associated with measles [adjusted mOR: 1.24, 95% CI 1.1-1.5].

**Conclusion:** To improve measles control in Karachi missed immunization opportunities must be reduced. Mother's education on breast feeding and appropriate weaning practices is required to increase child's immunity against vaccine preventable disease.

**Keywords:** Measles, risk factors, Karachi

### 16.60 VARIANT OF CYSTIC FIBROSIS WITH ISOLATED RIGHT UPPER LOBE NECROTIZING MULTI-DRUG RESISTANT PNEUMONIA- SUCCESSFUL TREATMENT WITH SURGICAL RESECTION

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**Case Report:** 7 year old girl with known diagnosis of Cystic Fibrosis presented with two year history of non resolving right upper lobe necrotizing pneumonia. She had previous history of multiple episodes of pseudomonas pneumonia treated with IV antibiotics. Flexible bronchoscopy was performed which showed complete occlusion of right upper lobe bronchus with purulent secretions. CT Chest showed extensive necrosis and cavitation of right upper lobe of the lung with essentially normal lung parenchyma in the rest of the lobes. In view of multidrug resistant recurrent pneumonias, it was decided to proceed for lung resection. Patient underwent successful right upper lobectomy. Intra-operatively she became hypoxia due to spillage of purulent secretions in the right lower lobe which was managed with thorough suctioning. Patient had an uneventful post-operative course and she was discharged home on IV imipenam for two weeks. Patient has remained well on post-operative follow up visits.

**Conclusion:** Cystic Fibrosis patients are prone to lung infections and lung resections are usually avoided in such patients. Isolated lobar infection with essentially normal lung parenchyma in rest of the lobes is very rare in such patients and when this is encountered, surgical resection should be considered as one of the treatment options.

**Keywords:** cystic, fibrosis, lung

### 16.61 VATS FOR EMPYEMA IN CHILDREN

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**Objective:** Video-assisted thoracoscopic surgery (VATS) is a novel minimally invasive operative technique for the management of thoracic empyema in children and its use is becoming more widespread in most parts of the world. Here we present our experience of 21 children who underwent VATS for diagnostic or management purposes.

**Methods:** Between January 1, 2004 to January 1 2011, 21 children under 12 years underwent VATS at the Aga Khan University Hospital for management of the empyema. Their charts were reviewed and data was collected regarding demographics, comorbidities, postoperative pain requirements, post-operative ICU stay, chest tube requirements, transfusion requirements and total hospital stay.

**Results:** The age range of these 21 patients was 3 months – 12 years. The indication of VATS in all these patients was multiloculated empyema secondary to bacterial infection. None of the tuberculous empyemas were treated with VATS or included in this study. Initial tube thoracostomy was tried in 6 of these patients. In remaining patients the VATS was done as a primary treatment for empyema. Only 5 of these patients had preoperative CT scan chest. The VATS was converted to open thoracotomy in 2 patients - in both patients for poor visualization and inability of the lung to expand completely after VATS decortication. One patient had a previous decortication outside our institution which had failed and she required thoracotomy. There were no postoperative mortality in any of the patients who underwent VATS successfully. One patient had necrotizing pneumonia and required prolonged ventilator support. Average hospital stay was 5 days and all patients were discharged with empyema tubes.

**Conclusion:** VATS is an excellent approach to the management of empyema in children especially in our setting. The potential benefits are decreased post-operative pain and decreased hospital stay

**Keywords:** VATS, Empyema, Children

### 16.62 SYSTEMATIC REVIEW OF FOOD SUPPLEMENTATION FOR PREVENTION OF UNDER NUTRITION AMONG CHILDREN LESS THAN 2 YEARS OF AGE

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**Objective:** The prevalence of malnutrition in low and middle income countries (LMICs) is considerable high. According to an estimate, 19.4% of children <5 years of age in these countries are underweight (weight-for-age Z score <-2) and about 29.9% are stunted in the year 2011 (height-for-age Z score <-2).

Malnutrition is preventable through effective complementary feeding practices. Several strategies have been employed to improve complementary feeding practices. These include nutritional counseling to mothers designed to promote healthy feeding practices and provision of complementary foods offering extra energy (with or without micronutrient fortification) **Method:** We conducted a systematic review of published randomized and quasi-randomized trials We performed meta-analysis with studies pooled as type of complementary food; efficacy/effectiveness and according to food secure/insecure populations. Broadly interventions were classified as educational, complementary foods and nutritional education in combination with complementary foods. All available papers/reports on the effect of food products (fortified or unfortified, but not micronutrients alone) conducted in LMICs were included. **Result:** After screening 701 titles, we included 42 studies in the review. We found that provision of complementary foods have a potential impact on reducing stunting (MD 0.90; 95% CI: 0.64, 1.26). educational interventions were also found to have a significant impact on height gain as well as weight gain [Std. MD Std. MD 0.27 (95% CI: 0.05, 0.48) respectively]. Pooled analysis based on efficacy/effectiveness trials showed that nutritional education given alone improved linear growth as evident by significant improvement in height-for-age Z score (HAZ) as compared to control group [MD: 0.32 (95% CI: 0.11, 0.53)].

**Conclusion:** the results of this review indicate that effectively implemented educational programs and provision of complementary foods can substantially reduce the prevalence of stunting and underweight children. However, further studies need to be conducted which report consistent outcome measures and similar interventions in order to accurately map out which interventions if scaled up, can be most effective.

**Keywords:** complementary feeding, nutritional education, growth, stunting, iron status, morbidity

### 16.63 PERINATAL WOMEN'S PERCEPTIONS ABOUT MIDWIFERY LED MODEL OF CARE IN SECONDARY CARE HOSPITALS KARACHI, PAKISTAN

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**Objective:** Historically, the midwifery led model of care (MLC) has been termed as a women-centered model of care. In MLC, women find midwives as their primary care providers during the antenatal, intranatal, and postnatal periods. MLC exists in various forms, from strong to weak presence of midwives, in maternity care settings in Pakistan. In 2010, four hospitals dealing with women and child care were merged with the Aga Khan University (AKU), and these facilities are called the secondary sites. Out of these, at 2 sites, the Aga Khan Hospital for Women, Garden and Kharader (AKHW, G & K), MLC is provided; and, this is the first time that an MLC study has been

undertaken. The purpose of this study is to explore the perceptions and experiences of perinatal women who have availed MLC at AKHW, G and K.

*Method:* Ten women, who received MLC, were enrolled in this study. A semi-structured interview guide was used for data collection and in-depth interviews were conducted in the Urdu language. Interviews were audio recorded, and verbatim were transcribed in the Urdu language. The data from Urdu was translated into the English language for analysis.

*Results:* The analysis of the data was done by using the six steps given by Creswell (2003). Based on the data analysis “women’s satisfaction with MLC” emerged as the main theme and, under this theme, the six categories that emerged were (1) admiring kabiliyat [capability] and maturity of midwives, (2) affording midwifery services, (3) apnapun ka rishta [personalized relationship], (4) empowered women to make decision, (5) presence, and (6) voiced concern regarding lack of marketing of MLC.

*Conclusion:* The overall findings revealed that women had a feeling of satisfaction with the maternity care provided by the midwives. This study lays emphasis on MLC and recommends different marketing strategies to promote access to cost-effective maternity care for Pakistani women. The study findings indicate implications for midwifery education, practice, policy makers, and research

*Keywords:* Perinatal, midwife, experiences and perceptions



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