



# 9th Health Sciences Research Assembly

April 8 & 9, 2015



*Abstract Book*



آغا خان یونیورسٹی  
THE AGA KHAN UNIVERSITY

**9<sup>th</sup> Health Sciences Research Assembly**  
April 8 and 9, 2015

**INAUGURAL SESSION**

Wednesday, April 8, 2015 | 8:30 – 9:30 am  
Aga Khan University Auditorium

Master of Ceremony: Dr Naghma Rizvi, School of Nursing and Midwifery

- Tilawat
- Introduction  
Dr Mohammad Wasay, Organizing Committee, 9th HSRA
- Remarks by  
Dr Raisa Gul, Interim Dean, School of Nursing & Midwifery
- Remarks by  
Dr Farhat Abbas, Dean, Medical College
- Remarks by  
Dr El-Nasir Lalani, Dean, Research & Graduate Studies
- Success and challenges in obtaining extramural research grants  
Dr Ayesha Kamal, Department of Medicine
- Vote of thanks  
Ms Kiran Shaikh, Co-Chair, 9th HSRA
- Inauguration of Scientific Exhibition

## Themes

- 1.0 Bone and Joint Diseases/Orthopaedics
- 2.0 Cardiovascular Diseases
- 3.0 Clinical Trials
- 4.0 Dentistry/Orthodontics/Dental Surgery
- 5.0 Endocrinology/Diabetes
- 6.0 GI/Liver
- 7.0 Haematologic & Oncologic Diseases
- 8.0 Health Sciences Education
- 9.0 Infectious Diseases
- 10.0 Neurosciences/Mental Health
- 11.0 Other
- 12.0 Public Health
- 13.0 Renal/Urology
- 14.0 Respiratory Diseases
- 15.0 Techniques/Innovations
- 16.0 Women and Child Health

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

Health Sciences Research Assembly (HSRA) plays a central role in dissemination and promotion of research within the AKU community. This avenue provides opportunity to researchers at AKU to showcase their research work that they have undertaken in the last one year. This is the 9th consecutive research assembly with the emphasis on compliance on ethics in research; therefore this year only those research works which had appropriate ethics clearance and some studies that were exempted from ethical clearance were allowed for submission. HSRA is a very important event which provides a great opportunity, specifically to novice researchers to curl their research ideas by interaction with researchers in other disciplines.

There will be brief presentations by distinguished academic leadership of AKU, followed by the opening of research poster exhibition. This year there are more than 400 posters on exhibition from multidisciplinary clinical to translational research from all departments.

We are extremely grateful to our committee members and Conference Secretariat in organization of the 9th Health Sciences Research Assembly.

We look forward to an active participation from faculty and staff and availing this opportunity to interact with researchers and opening of new areas of collaboration

**Dr Hammad Ather**  
Chair, Organizing Committee  
9<sup>th</sup> HSRA

**Dr Shahab Abid**  
Co-Chair, Organizing Committee  
9<sup>th</sup> HSRA

**Kiran Shaikh**  
Co-Chair, Organizing Committee  
9<sup>th</sup> HSRA

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

These days knowledge is not confined to the narrow boundaries of individual disciplines. On the contrary, for a university to be active in the creation of new knowledge and the application of existing knowledge, we need cross-fertilization between disciplines. This way of working is not easy and needs structures that can support it, as well as the will to work in this way.

One way of encouraging and supporting it comes from meetings like the 9th Health Sciences Research Assembly, which lets faculty and students share their work and ideas in a collegial environment where connections can be made and new ideas emerge. Collaboration needs the opportunity to meet and talk.

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

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

**Message from  
Dean, Medical College**

The Aga Khan University, in its journey to be a truly research led institution of the 21<sup>st</sup> century, places significant emphasis on continuing to foster and underpin our research culture; and support and forge new multidisciplinary and interdisciplinary collaborations. Our research spans many disciplines and responds to contemporary challenges currently facing the world today, to generate new knowledge and improve human life.

Following the University's first Health Sciences Research Assembly in 2005, the event has become an integral component of AKU's academic and scholarly activities with abstract submission and participation surpassing expectations year after year. With the 9<sup>th</sup> HSRA, we look forward to continuing the exchange and dissemination of learning, ideas and work, both completed and in progress, to provide greater opportunities for collegial efforts across disciplines and specialties.

I am sure that our faculty, fellows, residents and students will actively participate in the event, in an effort to make meaningful contributions to the contemporary knowledge-based society and for making a sustainable impact on the intellectual landscape.

I take this opportunity to convey my appreciation to Dr Hammad Ather and the Organising Committee of the 9th Health Sciences Research Assembly. I sincerely appreciate all of your efforts and wish you all the best in making the event an unprecedented success.

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

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

At the recent convocation in Dar-es-Salam, this year, the Chancellor remarked that: “AKU will continue to be a valuable reference point for you, with its Africa and Asia-specific research, and its Continuing Education opportunities”

The annual Health Sciences Research Assembly takes into account the Chancellor’s views in advancing the research agenda and captures the University’s thematic-research that provides a forum for faculty, staff, and students at AKU to showcase their work, discuss ideas, and become informed of the diverse activities and opportunities. AKU’s research is not only about new knowledge or the application of it; but also about developing a steady stream of highly skilled individuals.

The organisers have worked tirelessly over many months to put together this year’s assembly. And I take this opportunity to extend my deepest appreciation for their extraordinary effort. Congratulations.

**Professor El-Nasir Lalani**

Dean of Research & Graduate Studies and  
Professor of Molecular and Cellular Pathology

**Organising Committee**  
**9<sup>th</sup> Health Sciences Research Assembly**  
**April 8 and 9, 2015**

- Dr Hammad Ather (Chair), Department of Surgery
- Dr Shahab Abid (Co-Chair), Department of Medicine
- Kiran Shaikh (Co-Chair), SoNaM
- Dr Mohammad Wasay, Department of Medicine
- Dr Nasir-ud-Din, Department of Pathology and Microbiology
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- Afifa Batool, Public Affairs
- Qurat Khan, Department of Psychiatry

**Secretarial and Logistic Support**

- Mr Asad Yaqoob
- Mr Nayab Khan



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## **Bone and Joint Diseases/Orthopaedics**

## 1.1 CLINICAL AND BIOCHEMICAL CHARACTERISTICS OF CHILDREN WITH JUVENILE IDIOPATHIC ARTHRITIS

*Shakeel Ahmed, Syed Rehan Ali, Sidra Ishaque,  
Nabil Sami*

*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 a tertiary care centre in Karachi, Pakistan.

*Study Design:* A descriptive study.

*Place And Duration Of Study:* Paediatric Rheumatology Clinic of The Aga Khan University Hospital (AKUH), Karachi, from January 2008 to December 2011.

*Methods:* Clinical and laboratory profile and outcome of children less than 15 years of age attending the Paediatric Rheumatology Clinic of the Aga Khan University, Karachi with the diagnosis of Juvenile Idiopathic Arthritis according to International League against Rheumatism were studied. These children were classified into different types of JIA; their clinical and laboratory characteristics, response to therapy and outcome was evaluated.

*Results:* Sixty eight patients satisfying the criteria of International League against Rheumatism (ILAR) for Juvenile Idiopathic Arthritis were enrolled during the study period of four consecutive years, their age ranged from 9 months to 15 years. Mean age at onset was  $6.45 \pm 4.03$  years while mean age at diagnosis was  $7.60 \pm 3.93$  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 2 patients presenting with uveitis.

*Conclusion:* The clinico-biochemical characteristics of JIA at the study centre showed a pattern distinct with early onset of disease, high frequency of polyarticular type and a higher rheumatoid factor (QRA) and ANA positivity in girls.

*Keywords:* Clinical and biochemical characteristics, Juvenile Idiopathic Arthritis, AKUH

## 1.2 SARCOIDOSIS WITH ARTERIOVENOUS MALFORMATION IN A 15 YEAR OLD

*Iman Qaiser, Kanwal Nayani, Shakeel Ahmed  
Medical College and Department of Paediatrics &  
Child Health, Aga Khan University, Karachi*

*Introduction:* Sarcoidosis is a multi systemic disorder with many possible complications. Arteriovenous malformations are a rare vascular complication of sarcoidosis.

*Case Description:* A 15 year old girl presented to the Pediatric Clinic at AKUH in 2009 with pulmonary, hepatic, joint and skin manifestations. Physical examination and investigations pointed towards sarcoidosis, including raised ESR, ACE, SGPT and serum calcium. An incidental finding of pulmonary arteriovenous malformation (PAVM) was made on echocardiography. When treated with oral corticosteroids, her ACE and SGPT levels started decreasing. There was lack of indication for pulmonary angioembolization for her PAVM. On 4-year follow up, her condition is improving and she is clinically well.

*Discussion:* PAVM is an extremely rare complication of sarcoidosis, especially among the pediatric population. Hence, this is the first reported case of its kind. The relation between sarcoidosis and PAVM is difficult to establish, however, there are some theories. This condition may be treated depending on the symptoms. Since our patient did not have any significant symptoms of PAVM, she was treated for the underlying disease, i.e. sarcoidosis.

*Conclusion:* While dealing with patients having multi-system disorders like sarcoidosis, one must be very vigilant so as not to miss out on any complication. Regular follow-up visits should be scheduled to rule out new complications and to monitor the past ones.

*Keywords:* sarcoidosis, arteriovenous, malformation

### 1.3

#### PATTERN OF HEAD INJURIES ON HEAD CT SCAN IN TRAUMA PATIENTS

*Huma Khalid, Raza Sayani, Farhana Mehmood, Farah Khurram, Maha Hasan*  
*Department of Radiology, Aga Khan University, Karachi*

*Objective:* To evaluate the pattern of injuries seen on CT scan in patients with head injuries. *Material and Methods:* Retrospective review of CT head reports was performed who had presented with history of head injury during December 2013 to January 2014. Reports were evaluated for pattern of injuries found on the scans. This would in-turn help in identifying types of finding to look for in certain type of trauma. *Results:* CT scan showed no abnormality in 57% of patients with history of trauma, they were abnormal in 43% of patients. Males had high ratio of head injury (85%) as compared to females (15%). People with age range of 21 to 30 were more found. 14% of epidural hematoma and 86% sub dural hematoma was establish whether only 5% of gray white matter differential abnormality found. In 33% cases, intraparenchymal hemorrhage / contusion occurred. 37% had associated head and 40% had facial fractures. Caused of trauma and their correlation is also described. Attempt is also made to evaluate the outcome associated with injury pattern

*Conclusion:* Knowing the association of pattern of injuries may be helpful for their identification. These may also be helpful for technologist to identify and communicate these at an early stage.

*Keywords:* CT Head, Head Fracture, CT head Trauma

### 1.4

#### WHAT'S THE CAUSE OF BACKACHE? REVIEWING MRI LS SPINE

*Huma Khalid, Raza Sayani, Farhana Mehmood, Farah Khurram, Maha Hasan*  
*Department of Radiology, Aga Khan University, Karachi*

*Purpose:* To evaluate patients presenting with backache and review different aspects of lumbar disc degenerative disease on magnetic resonance image (MRI).

*Method:* This study was conducted from January 2013 to June 2013 at Aga Khan Hospital Karachi. Study was conducted on the diagnosed patients of lumbar disc degeneration. Inclusion and exclusion criteria were based upon abnormal findings in MRI. Patients with prior back surgery were excluded.

*Results:* During the targeted months, 101 patients of lumbar disc degeneration with age range between 11 to 90 of years came into radiology department. Disc bulge and dehydration was most commonly found at the level of L4/L5 (38%) and at L5/S1 (46%). Common level of disc protrusion was L5/S (42%) and lumbar spinal stenosis and disc extrusion level was L4/L5 (47%). Spinal recess stenosis was commonly present at L4/L5 (40%). It was found that 77% have mild, 12% have moderate and 11% have severe degenerative lumber disorders.

*Conclusion:* Study indicates strong association of back pain with lumbar disorders such as spinal stenosis, disc extrusion and disc protrusion at the most common levels L4-L5 and L5-S1.

*Keywords:* Backache, lumbar disorder, Lumbar MRI

### 1.5 SPRENGEL'S DEFORMITY WITH CUTANEOUS MOSAICISM

*Muhammad Younus Khan Durrani, Abdul Malik Amir Humza Sohail, Fazal Khan, Pervaiz Hashmi  
Department of Surgery, Aga Khan University,  
Karachi*

*Introduction:* Various shoulder bone deformities have been identified in the pediatric age group, with the most common being undescended scapula. Sprengel's deformity is dysplasia and malposition of the scapula, especially in the supraspinatus portion, mainly due to abnormal descent in the embryonic life. The clavicle is shorter and has a different contour. It is associated with various syndromes, with the most common one being Klippel-Feil syndrome.

*CASE:* We report the case of a 3 year-old girl who presented with difficulty in abducting right shoulder and was diagnosed to have Sprengel's deformity. Also, our patient had hyperpigmentation along the lines of Blaschko (most likely due to cutaneous mosaicism).

*Conclusion:* This case raises the possibility of an association between Sprengel's deformity and the conditions in which cutaneous mosaicism is present. No such case has been previously reported in medical literature. This is the first case in which both these pathologies occur simultaneously.

*Keywords:* Sprengel's, Cutaneous Mosaicism, Shoulder deformity

### 1.6 ISOLATED LIGAMENTUM FLAVUM CALCIFICATION: AN UNCOMMON PRESENTATION OF PRIMARY HYPOPARATHYROIDISM

*Abdul Malik Amir Humza Sohail, Muhammad Soban Arif Maan, Sarwar Malik, Muhammad Qamar Masood  
Department of Medicine, Aga Khan University,  
Karachi*

*Introduction:* Ossification of paravertebral region and peripheral spinal ligaments is a rare disease that causes serious neurological manifestations. It can happen as an unusual complication of hypoparathyroidism. Studies have indicated a role of various systemic hormones like insulin, 1,25-dihydroxycholecalciferol, parathyroid hormone (PTH), as well as local tissue growth factors, such as bone morphogenetic protein (BMP) and TGF- $\beta$ , transforming growth factor- $\beta$  in the causative processes leading to the ossification of spinal ligaments(OSL). During our literature review, we found only five previously reported cases of ligamentous ossification in association with hypoparathyroidism.

*Case:* We are reporting the first case of hypoparathyroidism that presents with isolated ligamentum flavum ossification causing myelopathy. It is interesting because it's a first report of its kind from this region and the reported case has cervical myelopathy in addition to thoracic myelopathy, which is very rare in ligamentous ossification patients. After clinical assessment, a diagnosis of primary hypoparathyroidism was made.

*Conclusion:* In patients presenting with symptoms such as backache, lower limb weakness and urinary retention, who after workup are diagnosed with hypoparathyroidism, radiological workup of the spine should always be ordered to rule out OSL as a cause of compressive myelopathy.

*Keywords:* hypoparathyroidism, calcification, ligamentum flavum

## **Cardiovascular Diseases**

## 2.1

### CARDIOVASCULAR EFFECTS OF AQUEOUS-METHANOLIC EXTRACT OF BERGENIA LIGULATA IN EXPERIMENTAL ANIMALS

*Hasan Salman Siddiqi, Mohammad Ahsan Sohail  
Department of Biological & Biomedical Sciences,  
Aga Khan University, Karachi*

**Background:** Hypertension is a significant health care challenge due to lack of patient compliance. Search for new anti-hypertensive drugs includes exploration of medicinal plants. **Objective:** The aim of this study was to explore the cardiovascular effects of the aqueous-methanolic extract of *Bergenia Ligulata* (Bl.Cr) in order to provide pharmacological basis for its medicinal use in hypertension.

**Materials and Methods:** Aortae from Sprague-Dawley rats and atria from guinea-pigs were placed in 5 ml and 15 ml isolated tissue bath assemblies respectively. The tissue bath assemblies, maintained at 37°C with constant carbogen supply, were filled with physiological salt solutions (Kreb's solution) and were connected to Power-Lab.

**Results:** *Bergenia Ligulata* rhizome extract (Bl.Cr), in isolated guinea-pig atria, equally inhibited force and rate of spontaneous atrial contractions. On the baseline of rat thoracic aortae, the plant extract caused vasoconstriction, which was partially phentolamine-sensitive. When tested on phenylephrine (PE, 1 µM) and K<sup>+</sup> (80 mM)-induced vasoconstriction, Bl.Cr caused a concentration-dependent relaxation and also caused a suppression of PE (1 µM) control peaks in Ca<sup>2+</sup>-free medium.

**Conclusions:** These data indicate that the plant extract exhibits cardio-suppressant, vaso-dilatory and vaso-constrictive properties. The vasodilator effect of the plant extract is mediated through multiple pathways like inhibition of calcium influx through voltage-gated calcium channels, the inhibition of alpha-receptors as well as by the blockage of the IP<sub>3</sub> pathway. However, due to the extract's vaso-constrictive component, further investigations have to be carried out to determine which effect (vaso-dilatory or vaso-constrictive) dominates the other.

**Keywords:** *Bergenia Ligulata* Rhizome, antihypertensive, Ca<sup>2+</sup> antagonist

## 2.2

### CARDIOVASCULAR EFFECTS OF AQUEOUS-METHANOLIC EXTRACT OF FUMARIA PARVIFLORA IN EXPERIMENTAL ANIMALS

*Hasan Salman Siddiqi, Muhammad Zarrar Khan  
Department of Biological & Biomedical Sciences,  
Aga Khan University, Karachi*

**Introduction:** Hypertension is a significant health care challenge. Its prevalence is on the rise due to lack of compliance to current management providing a rationale for the search of new treatments.

**Objective:** This study was undertaken to explore the cardiovascular effects of aqueous-methanolic extract of *Fumaria Parviflora* (Fp.Cr) and to investigate its potential use as an anti-hypertensive agent.

**Methods:** The aerial parts of the plant were utilized to prepare the extract. Aortae from Sprague-Dawley rats and atria from guinea-pigs were placed in 5 ml and 15 ml isolated tissue bath assemblies respectively, filled with Kreb's buffer (37°C) bubbled with carbogen and connected to a force transducer and PowerLab attached with a computer. All the graphing, calculations and statistical analyses were performed using Graph-Pad Prism software version 4.00 for Windows.

**Results:** Fp.Cr equally inhibited force and rate of spontaneous atrial contractions in isolated guinea-pig atria. On the baseline of rat thoracic aortae, the plant extract caused vasoconstriction, which was partially phentolamine-sensitive. When tested on phenylephrine (PE, 1 µM) and K<sup>+</sup> (80 mM)-induced vasoconstriction, Fp.Cr caused a concentration-dependent relaxation and also caused a suppression of PE (1 µM) control peaks in Ca<sup>++</sup> free medium.

**Conclusions:** These data indicate that the plant extract exhibits cardio-suppressant, vaso-dilatory and vaso-constrictive properties. The vasodilator effect of the plant extract is mediated through

inhibition of Ca<sup>++</sup> influx via membranous Ca<sup>++</sup> channels as well as Ca<sup>++</sup> release from intracellular stores. Future studies are required to further elaborate the blood pressure lowering activity of the plant.

*Keywords:* Fumaria Parviflora, antihypertensive, Ca<sup>++</sup> antagonist

### 2.3

#### MURINE MODEL OF MYOCARDIAL INFARCTION AND MYOCARDIAL ISCHEMIA-REPERFUSION: A COMPARISON

*Satwat Hashmi, Suhail Al Salam*

*Department of Biological & Biomedical Sciences, Aga Khan University, Karachi and United Arab Emirates University, UAE*

*Objective:* Reperfusion after myocardial infarction (MI) has the potential to salvage ischemic myocardium but paradoxically can cause injury called as ‘reperfusion injury’ (IR). Inflammation, necrosis and apoptosis are the most important mechanisms that are initiated during ischemia and continue over several hours into reperfusion.

*Methods:* Our murine MI model has permanent left anterior descending (LAD) artery ligation for 24 hours while our IR model has LAD artery ligation for 30 min followed by reperfusion for 24 hours. Histopathologic, apoptotic and inflammatory changes were measured by using techniques like immunohistochemistry, immunofluorescence and ELISA.

*Results:* Our results show that the IL-6 levels in the LV (p=0.0008) and plasma (p=0.031) of the MI group were significantly raised as compared to the IR group. MI model was also associated with increase in the neutrophil polymorphs number in the infarction related myocardium as compared to the re-perfused myocardium. A significant increase in troponin I level in the MI group as compared to the IR group is also seen (p=0.00). Our IR model showed enhanced pro-apoptotic mediators like cleaved caspase-3 (p=0.005) and cytochrome c and decreased antiapoptotic bcl-2 in the myocardium as compared to the MI model.

*Conclusion:* The myocardial damage in MI is mainly due to ischemic necrosis and inflammatory mechanisms while apoptosis and ischemic necrosis are the main mechanisms of cells death in IR. The process of cardiomyocyte injury in MI and IR is distinct and is determined by the local microenvironment of the myocardium.

*Keywords:* Myocardial infarction, Reperfusion injury, Apoptosis

### 2.4

#### EFFECTIVENESS OF ALMOND IN PREGNANCY-ASSOCIATED HYPERTENSION AND DYSLIPIDEMIA

*Humaira Jamshed, Raffat Bano, Anwar-ul-Hassan Gilani*

*Departments of Biological & Biomedical Sciences and Obstetrics & Gynaecology, Aga Khan University, Karachi*

Several clinical studies have indicated the beneficial effects of almond on the cardiovascular system including our recent randomized controlled trial showing HDL-raising potential of almonds. While exploring the underlying mechanism we found amelioration of vascular dysfunction by almonds. Keeping in view the lack of almond-intervention trials on hypertensive patients we aim to conduct a randomized controlled clinical study on hypertensive and dyslipidemic pregnant women visiting the consultant clinics at the Aga Khan Maternity Hospital, Karimabad, Karachi. This population was selected since pregnancy-associated hypertension and dyslipidemia are among major causes of maternal deaths, and there are myriad of safety concerns with the use of drugs in pregnancy. The objective is to compare low and high almond doses, for their effectiveness in pregnancy-associated hypertension. Additional effects on dyslipidemia and/or gestational diabetes will also be investigated.

*Keywords:* Pregnancy, Almonds, Hypertension



## 2.5 ESTIMATION OF PREVALENCE OF DYSLIPIDEMIA AND HYPERTENSION IN PREGNANCY

*Humaira Jamshed, Raffat Bano, Anwar-ul-Hassan Gilani*

*Departments of Biological & Biomedical Sciences and Obstetrics & Gynaecology, Aga Khan University, Karachi*

Dyslipidemia and hypertension during pregnancy are among the major causes of maternal deaths. These are also found to adversely affect neonatal health. Primary objective of this study is to estimate the prevalence of dyslipidemia (increased cholesterol, triglycerides and LDL-C with decreased HDL-C) and hypertension in pregnant women visiting the consultant clinics at Aga Khan Maternity Hospital, Karimabad, Karachi. After short listing the hypertensive patients, consent will be obtained. A brief questionnaire (for food frequency and physical activity patterns) will be filled followed by collection of blood samples. All the vital (body weight, blood pressure, heart rate etc.) will be recorded, and biochemical estimations, including total cholesterol, triglycerides, LDL, HDL etc. will be conducted on the blood samples.

*Keywords:* Pregnancy, Prevalence, Dyslipidemia

## 2.6 SKIPPING BREAKFAST: A WAY TOWARDS CARDIOVASCULAR DISEASES

*Sonam Shoukat Ali, Shazbeen Shoukat Ali*  
*Nursing Services, Aga Khan University, Karachi*

*Objective:* Breakfast is the most essential and nutritious meal of the day that is being linked with health since ages. Investigations on a number of aspects related to breakfast intake and health has occurred with a range of study designs demonstrating that both the timing (breaking of a fasting state) and content of breakfast may be important for health (odegaard et al., 2013). Despite of such benefits, breakfast skipping habit is highly

prevalent in today's world among all age groups with high epidemic of cardiovascular diseases (CVD). Among numerous behavioral changes contributing to CVD, meal skipping has not been well examined as a potential risk factor. Therefore, the objective of this literature review was to highlight the importance of breakfast and its relation to various factors that leads to the development of CVD. *Method:* A comprehensive systemic literature review was conducted through various databases including science direct, Pub med, SAGE and google search engines. The trends of study was observed amongst children, adults and health care professionals. The causal relationship of breakfast consumption was studied with cardiovascular risk factors and their ultimate risk for developing cardiovascular diseases. *Results:* Sajjad, Anwer, Zaidi, and Hasan (2014) noticed that trend of skipping breakfast among medical students was around 45% however among Pakistani people was 26.3%. This trend may result in high magnitude of CVD as among men, follow-up data supported a significant relationship between higher breakfast frequency and lower development of CVD (Betts et al., 2014). Association of breakfast and CVD risk factors were also noticed in multiple researches. In a study of black and white young adults, breakfast consumption was associated with a decreased risk of developing abdominal obesity, metabolic syndrome, hypertension, and type 2 diabetes over 18 years of follow-up (odegaard et al., 2013). Findings from a study on children and adolescents suggested that breakfast skippers had a significantly higher BMI compared with frequent breakfast consumers (Rampersaud, 2009) and those who took their breakfast in early morning had lower BMI. It was also found that cereal breakfast consumers were less depressed, less emotionally distressed and had lower levels of perceived stress (Sajjad et al., 2014). Similarly, Shafiee et al. (2013) found that "seldom breakfast eater" were more likely to present metabolic syndrome (Mets) having elevated TG, elevated LDL-C and general obesity compared with non-breakfast consumers. Also, eating breakfast was negatively associated with fasting glucose as greater frequency of meals help regulate short-term insulin response (Rampersaud, 2009). Breakfast frequency was also found to be associated with

greater physical activity levels in children and adolescents, which could play a vital role in preventing unhealthy weight gain leading to a healthier lifestyle (Rampersaud, 2009).

*Conclusion:* Children should be emphasized on breakfast consumption since their childhood so that this behavioral change could aid in maintaining a healthy life style and prevent from chronic diseases. In this regard, healthcare professionals can play a pivotal role by conducting educational programs, activities and awareness sessions at multiple settings. Furthermore, researches regarding this topic should be conducted with varied study designs at larger scale especially among Pakistani population.

*Keywords:* Skipping Breakfast, Cardiovascular risk factors, cardiovascular diseases

## 2.7

### FEASIBILITY AND SAFETY OF ON TABLE EXTUBATION AFTER CORRECTIVE SURGICAL REPAIR OF TETRALOGY OF FALLOT IN A DEVELOPING COUNTRY; A CASE SERIES

*Mohammad Irfan Akhtar, Mohammad Hamid, Anwar ul-Haq, Naveed Rehman*  
*Departments of Anaesthesiology and Paediatrics & Child Health, Aga Khan University, Karachi*

*Introduction:* Fast track extubation is an established safe practice in pediatric congenital heart disease surgical patients. On table extubation (OTE) in acyanotic CHD surgical patients is well established with validated safety profile. This practice is not yet reported in TOF surgical repair patients in developing countries. Evidence suggests that TOF total correction patients should be extubated early, as positive pressure ventilation has negative impact on right ventricular function and overall increase in post TOF repair complications like low cardiac output state and arrhythmias.

*Objective:* The objective of the case series was to determine the safety and feasibility of on table extubation in elective TOF total correction cardiac surgical patients with integrated team approach. To

the best of our knowledge, this is the first reported case series. Methodology-After taking informed consent from the parents, a total of 8 elective male and female TOF total correction scheduled surgical patients were included in the case series. Standard anesthetic, surgical and perfusion techniques were used in these procedures.

*Results:* All patients were extubated in the operating room safely without any complications with the exception of one patient who continued to bleed for three hrs after extubation at 2-3mls/kg/hr which was managed with transfusion of FFP at 15mls/kg, PRBCS 10mls/kg and bolus of transamine at 20mg/kg. Other outcome variables were decreased in CICU stay from 4-5 days in conventional ventilation patients to 48 hrs on OTE. Apart from the better anesthetic, surgical and perfusion technique, the most important factor contributing to this success was an optimal multimodal analgesic technique including fentanyl, paracetamol and bupivacaine sternal incision infiltration.

*Conclusion:* On the basis of the case series, it is suggested to extubate selected Tetralogy of Fallot cardiac surgery repair patients on table safely with integrated multidisciplinary approach as spontaneous ventilation improves right ventricular function by improvement in its preload and afterload.

*Keywords:* On table extubation, Tetralogy of Fallot, Feasibility

## 2.8

### ENTERIC CYST IN THE LEFT POSTERIOR MEDIASTINUM MIMICKING A HYDATID CYST ON CHEST CT SCAN

*Shazib Sagheer, Abdul Malik, Amir Humza Sohail, Yousaf Bashir Hadi, Saulat Fatimi*  
*Department of Surgery, Aga Khan University, Karachi*

*Introduction:* Mediastinal enteric cysts are a rare occurrence; only 1-2% of all mediastinal cysts are enteric cysts. They are usually asymptomatic in most cases but can also present with a variety of symptoms such as respiratory distress, hemorrhage,

tamponade or compression of adjacent structures. They are usually found as an incidental finding in the right hemi-mediastinum and are associated with vertebral anomalies.

*Case:* We report the unusual case of a 23 year old male who had a mediastinal mass on chest X-ray as an incidental finding. Chest CT scan revealed no vertebral anomalies and a cystic mass in the left posterior mediastinum with features similar those of a hydatid cyst. Posterolateral thoracotomy was done and the cyst was excised. Histopathology report revealed it to be an enteric cyst.

*Conclusion:* In cases where on radiology a hydatid cyst is found in the posterior mediastinum, the possibility of an enteric cyst must be kept in mind as a differential diagnosis; CT scan, as seen in this case, may not be a very accurate tool for the diagnosis of mediastinal masses. Also the absence of vertebral anomalies doesn't preclude the diagnosis of an enteric cyst.

*Keywords:* posterior mediastinum, hydatid cyst, thoracotomy, enteric cyst

## 2.9

### PHARMACOLOGICAL EVALUATION OF COMPOUND HERBAL FORMULATION AND ITS INGREDIENTS FOR CARDIOVASCULAR DISORDERS

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

*Introduction:* This study was designed to validate the indigenous medicinal use of POL-4, a polyherbal formulation and its ingredients [Nigella sativa (Ns), Cichorium intybus (Ci), Trigonella foenum graecum (Tfg) and Gymnema sylvestre (Gs)].

*Material & Methods:* The aqueous methanolic extracts of POL-4 (Pol-4.Cr) and its components [(Ns.Cr), (Ci.Cr), (Tfg.Cr) and (Gs.Cr)] were prepared and tested for their effects on blood pressure in rats. Blood pressure was measured using polyethylene cannula inserted into rat carotid artery, coupled with pressure transducer. Isolated aortae of

rats were used to assess the vasomodulatory effects using isometric transducer coupled with PowerLab data acquisition system.

*Result:* Administration of POL-4 to anesthetized rats caused a dose-dependent (1-100 mg/kg) fall in mean arterial pressure (MAP) with maximum effect of 77.29±6.34% (n=5) at highest tested concentration. Ci.Cr, Ns.Cr, Tfg.Cr and Gs.Cr also produced significant fall in the MAP, while their efficacy was found as; Ci.Cr > Ns.Cr > Gs.Cr > Tfg.Cr. However, Gs.Cr found was the most potent and of comparable potency to that of Pol-4.Cr. On rat aortic preparations, POL-4 and its ingredients caused vasorelaxation against K<sup>+</sup> (80 mM) - induced contraction in a way that Ci.Cr was the most potent followed by Ns.Cr, Pol-4 ≅ Tfg.Cr and Gs.Cr. However, on phenylephrine (P.E)-induced contraction, Pol-4.Cr, Gs.Cr and Ns.Cr showed added vasoconstrictive effect at initial tested doses followed by relaxation at 0.1-10 mg/ml, whereas, Ci.Cr and Tfg.Cr caused only relaxation.

*Conclusion:* The data show that POL-4 and its ingredients possess prominent antihypertensive properties possibly because of the presence of their vasorelaxant constituents. The vasorelaxant effects of POL-4 and its ingredients were found mediated predominantly through inhibition of Ca<sup>2+</sup> influx via membranous Ca<sup>2+</sup> channels and α- adrenergic receptor blockade pathway.

*Keywords:* Herbal formulation, Antihypertensive, Vasomodulator

## 2.10

### ALMONDS IMPROVE HEPATIC FUNCTION IN CORONARY ARTERY DISEASE PATIENTS

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Non-alcoholic fatty liver syndrome is one of the most common manifestations of chronic cardiovascular diseases. Almond oil and skin extract has shown to prevent hepatic damage in rat models. This study aims at exploring the effect of almond

supplementation on hepatic function in Coronary Artery Disease (CAD) patients. One hundred and fifty CAD patients were recruited from cardiology clinics at Aga Khan University Hospital. They were randomized into either group 1 (given no-intervention – NI), group 2 (given Pakistani almonds – PA) or group 3 (given American almonds – AA). After overnight soaking and skin removal, 10 grams almond were to be consumed. Follow-up visits were at week-6 and week-12, where blood was collected to compare with the baseline sample, for changes in concentration of hepatic biomarkers. Preliminary results indicate that almond supplementation significantly decrease serum aminotransferases (AST and ALT) as well as gamma-glutamyl transferase (GGT) from baseline, with statistically insignificant changes in NI group (compared to baseline). In conclusion, almond supplementation can provide wider protection to CAD patients, with respect to hepatic health.

*Keywords:* Almonds, Aminotransferases, Glutamyl-transferase

### **2.11** EFFECT OF ALMONDS ON SERUM URIC ACID AND PHOSPHORUS IN CORONARY ARTERY DISEASE

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Hyperuricemia and hyperphosphatemia are indicative of renal insufficiency, and co-morbidities of chronic cardiovascular diseases. Almonds are considered as a general health tonic with numerous scientific studies indicating its protective effects on the cardiovascular system. This study explores effect of almond supplementation on serum uric acid and phosphorus concentrations (as biomarkers of renal and/or cardiovascular function) in coronary artery disease (CAD patients). A randomized controlled clinical trial was conducted on CAD patients visiting Cardiology clinics Aga Khan University. There were three groups: group 1 (given

no-intervention – NI), group 2 (given 10 g Pakistani almonds – PA) or group 3 (given 10 g American almonds – AA). Blood was collected for biochemical estimation at baseline, follow-up visits 1 (week-6) and visit 2 (week-12). Almond supplementation (both PA and AA) is shown to reduce serum concentrations of uric acid and phosphorus, with no significant effect in NI group. In conclusion, regular almond consumption may help prevent renal insufficiency in CAD patients.

*Keywords:* Almonds, hyperuricemia, hyperphosphatemia

### **2.12** ANAESTHETIC MANAGEMENT OF NEONATE FOR RIGHT ATRIAL MASS RESECTION: CASE REPORT

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Primary intracardiac tumors are an infrequent occurrence during infancy and childhood and the most common amongst the primary cardiac neoplasms, myxomas, have an estimated incidence of approximately 2-3 per 100000 population. The atrial myxomas have a preponderance to occur in the left atrium with only a 25% incidence in the right atrium. Depending upon the site and the size of the neoplasm, the clinical picture varies and may range from no significant symptoms to cardiac arrest. Hence, the diagnosis and management of this condition requires highly specialized multidisciplinary input by the perioperative caretakers including cardiologists, cardiothoracic surgeons, anaesthetists and the nurses specialized to deal with this unique population. There is a dearth of available literature on the anaesthetic management of these primary intra-cardiac tumors with reports of neonatal right atrial myxoma excision a true rarity. We report the successful anaesthetic management of one such case of a right atrial myxoma in an 18 day old female child.

**Keywords:** atrial mass, myxoma, resection

### 2.13

#### SUCCESSFUL BENTALL OPERATION AND AORTIC ROOT REPLACEMENT FOR LARGE DISECTING ANEURYSM OF THE ASCENDING AORTA IN AN ASYMPTOMATIC PATIENT

*Jamal Kabeer, Khalid Samad, Saulat H. Fatimi, MD*  
*Department of Surgery, Aga Khan University, Karachi*

55 year old man was found to have a wide mediastinum on a routine chest xray. Patient had no history of any hypertension or any other comorbid. CT Scan chest showed a large dissecting aneurysm of the ascending aorta with moderate to severe aortic regurgitation. It was unusual presentation since patient was asymptomatic. Aortic Root replacement was performed along with coronary arteries re-implantation into the Dacron graft. Patient had an uneventful post-operative course.

**Keywords:** Bentall, aortic, aneurysm

### 2.14

#### GIANT RETRO-CARDIAC MESENTERIC CYST PRESENTING WITH LEFT ATRIAL COMPRESSION AND PALPITATIONS

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35 year old man presented with shortness of breath and palpitations. EKG showed premature atrial contractions and episodes of SVT. Echo showed retrocardiac cystic mass compressing the left atrium which was further confirmed on CT Scan Chest. The Cyst was successfully excised from the retrocardiac position via left thoracotomy. The histopathology showed it to be mesenteric cyst. This is extremely unusual case of mesenteric cyst presenting with compression of left atrium and pulmonary veins leading to atrial arrhythmias.

**Keywords:** retrocardiac, thoracic cyst, cardiac

### 2.15

#### RARE MYCOTIC ANEURYSMS OF INTERNAL JUGULAR VEIN AND INNOMINATE VEIN SECONDARY TO UNTREATED PARAPHARYNGEAL ABSCESS

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31 yr old woman presented with three months history of large untreated parapharyngeal abscess and bleeding from the mouth. On evaluation with CT Scans, it was found that this abscess was reaching upto the superior mediastinum and there were multiple small lung abscesses. Echo showed Tricuspid valve endocarditis. Patient was brought to the OR and intra-operatively it was found that she had multiple large mycotic pseudoaneurysms of the internal jugular vein and right brachiocephalic veins. All these pseudoaneurysms were repaired with pericardial patches under cardiopulmonary bypass. Patient did well in the short postoperative follow up and was then referred to plastic surgery and ENT for further surgical interventions.

**Keywords:** vein, endocarditis, cardiopulmonary

### 2.16

#### SUCCESSFUL TREATMENT OF GIANT LEFT SUBCLAVIAN ARTERY PSEUDOANEURYSM ABUTTING THE ARCH OF THE AORTA AND DESCENDING AORTA

*Hamza Khan, Ali Raza Mangi, Saulat H. Fatimi, MD*  
*Department of Surgery, Aga Khan University, Karachi*

32 yr old woman presented with fever of unknown origin for three months and progressive increasing cough. She was diagnosed to have pulmonary TB

on bronchial lavage cultures. With ATT, she became clinically better but a chest Xray performed for follow-up showed a new opacity in the left apical area of the chest. CT Scan Chest showed a large 10 cm pseudoaneurysm of the left subclavian artery one cm from its takeoff from the arch of the aorta. The Aneurysm was approached via left postero-lateral thoracotomy, and after proximal and distal control, the aneurysm was opened. A 3 cm longitudinal defect was identified in the subclavian artery in the intrathoracic portion which was debrided and repaired with autologous pericardial patch. Patient had an uneventful recovery.

*Keywords:* pseudoaneurysm, aorta, subclavian

### 2.17

#### SIMULTANEOUS OFF PUMP CORONARY ARTERY BYPASS GRAFTING (CABG) AND RIGHT UPPER LOBECTOMY FOR CRITICAL LEFT MAIN STENOSIS AND ASPERGILLOMA

*Mahnur Khan, Mohammed Hamid, Saulat H. Fatimi, MD  
Department of Surgery, Aga Khan University, Karachi*

58 yr old man with history of ischemic heart disease presented with massive hemoptysis. On evaluation with Ct Chest, he was found to have a large aspergilloma in the left upper lobe. Coronary angiogram was also performed for increasing episodes of angina which showed critical 90% ostial LAD stenosis. In view of aspergilloma and hemoptysis, patient could not have conventional open heart surgery and heparinization. Therefore, CABG was performed on beating heart and this was followed by left upper lobectomy at the same time. Patient had an uneventful post-operative course.

*Keywords:* aspergilloma, OPCAB, LAD

### 2.18

#### COMPLETE RESECTION OF MELANOTIC SCHWANOMA AT THORACIC INLET- AN UNUSUAL TUMOR

*Fazal Wahab Khan, Mohammed Irfan, Saulat H. Fatimi, MD  
Department of Surgery, Aga Khan University, Karachi*

18 year old boy presented with upper back and neck pain. On evaluation, he was found to have a posterior mediastinal mass encroaching the thoracic inlet. The mass was completely excised via right thoracotomy. It was dark black in colour with solid and cystic consistency. The histopathology showed it to be rare benign melanotic schwannoma.

*Keywords:* schwannoma, melanotic, thoracic

### 2.19

#### POST AORTIC VALVE REPLACEMENT PATIENT WITH NORMAL CORONARIES PRESENTING WITH 99% LEFT CORONARY ARTERY STENOSIS 10 MONTHS AFTER AVR- AN UNUSUAL COMPLICATION

*Fazal Wahab Khan, Mahnur Khan, Saulat H. Fatimi, MD, Javed Tai  
Department of Surgery, Aga Khan University, Karachi*

65 year old man presented to ER with severe chest pain and ST depression in all precordial leads. He had an aortic valve replacement 10 months earlier at another hospital and at that time, coronary angiogram was normal. Emergent angiography showed 99% long left main stenosis with normal right coronary artery. Prosthetic aortic valve was functioning normally and LV function was 25%. Emergency bypass was done and three bypasses were performed. Patient had post-operative coagulopathy but he recovered completely. The mechanism towards development of such tight left main stenosis was strut of the valve causing continuing intimal erosion and inflammation into

the left coronary artery and hence making it stenotic.

*Keywords:* aortic valve, redo, left main

## 2.20

### ASSOCIATION OF CORONARY ARTERY CALCIUM SCORE ON CARDIAC COMPUTED TOMOGRAPHY ANGIOGRAM WITH POSITIVE FINDINGS ON MYOCARDIAL PERFUSION SCANS AND STRESS ECHOCARDIOGRAMS

*Aatif Ahmed khan, Fateh Ali Tipoo, Khawar Kazmi  
Department of Medicine, Aga Khan University,  
Karachi*

*Background:* It is generally accepted that cardiovascular event risk increases with increasing coronary artery calcium scores. However, coronary artery calcium score doesn't correlate well with the degree of obstruction and resultant ischemia on stress testing. A number of studies have been done to assess the correlation between coronary artery calcium scoring and the presence of ischemia on stress testing either nuclear myocardial perfusion imaging or stress echocardiogram. According to these studies, patients with low calcium score (<100) have a low likelihood (1.3%) of positive findings on perfusion imaging. And for the patients who have calcium score (>400) tend to have approximately 35% chances of having perfusion abnormalities. Patients with incremental values of coronary artery calcium scores have increased chances of positive findings on either nuclear myocardial perfusion or stress echocardiogram. Unfortunately, no such study was done in our population either at regional or national level. Therefore we decided to do such a study in a hospital based setup (tertiary care referral center) Aga Khan University Hospital.

*Objective:* To determine the association of coronary artery calcium scores with positive findings on myocardial perfusion scans or stress echocardiograms

*Methods:* The study will be conducted at Aga Khan University Hospital Karachi on patients going for

coronary calcium scoring for screening purpose and also for either myocardial perfusion imaging or stress echocardiograms. From the literature, the overall 35.2% relationship was found between Coronary artery calcium score and stress test in detection of relevant CAD. Therefore taking the frequency of 35.2%, with a bound on error of 0.08 (8%), an alpha significance level of 0.05 with a 95% CIs, a sample of at least 137 will be required.

*Results:* The study is currently going on

*Keywords:* Coronary artery calcium score, stress imaging,

## 2.21

### FREQUENCY AND COMPARISON OF POST PCI BLEEDING IN CORONARY ARTERY DISEASE PATIENTS WITH DIFFERENT BODY MASS INDEX LEVELS

*Ghulam Hussain Soomro  
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Karachi*

*Background:* Obesity has emerged as an epidemic in most parts of the world. It is a well-known fact that obese individuals carry a higher risk of cardiovascular disease and associated death. But in established CAD, relationship of obesity with further cardiovascular events and mortality is indistinct. While obesity is associated with increased burden of atherosclerosis and instability of plaque in patients with CAD undergoing percutaneous coronary intervention (PCI), studies have suggested that compared to normal or lower BMI group, obese patients have a better prognosis. This phenomenon is termed as the "obesity paradox", which refers to the fact that sometimes being overweight or slightly obese is associated with lower, rather than higher, death rates. All the available studies' data are based on either western or oriental population. Whether obesity paradox in bleeding post PCI exists in Pakistani population, is not yet known, hence warranted study in this area to determine the magnitude of bleeding among post PCI patients and the effect of BMI on bleeding after PCI in our population.

**Objective:** To determine the frequency of post PCI bleeding in CAD patients presenting at a tertiary care hospital, and to compare post PCI bleeding in ACS patients with different levels of BMI.

**Methods:** The patients undergoing PCI meeting inclusion criteria is included in the study. Every patient is inquired about the age and the risk factors for CAD e.g., diabetes, hypertension, dyslipidemia, smoking and family history of CAD. Height and weight is checked and BMI is calculated prior to procedure and labeled as normal, overweight, or obese, as defined in operational definitions. Post procedure presence of overt signs like pale looking, dizziness and confirmed with drop in Hemoglobin level >2 grams/deciliter from the baseline is taken as bleeding. Bleeding events mentioned in the operational definitions are noted within 24 hours of PCI. The data will be analyzed at the end of study to compare the bleeding at different levels of BMI.

**Results/Conclusions:** This study is currently ongoing.

**Keywords:** Obesity paradox, post PCI bleeding

## **2.22** MODE OF CORONARY REVASCULARIZATION AND SHORT TERM CLINICAL OUTCOMES IN PATIENTS WITH CHRONIC KIDNEY DISEASE

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Karachi

**Background:** Percutaneous coronary intervention (PCI) and coronary artery bypass graft (CABG) surgery are two alternative methods for coronary revascularization, but it remains controversial as which one is associated with lower risks of worse clinical outcomes for chronic kidney disease (CKD) patients.

**Methods:** All patients with CKD underwent PCI or CABG. The primary outcome was in-hospital composite of death, myocardial infarction (MI), or stroke. We evaluated which mode of coronary

revascularization was associated with reduced risks of mortality and morbidity

**Results:** The primary finding of this study is that more patients with moderate to severe CKD underwent PCI and more patients with mild to moderate CKD underwent CABG. In both these categories, no difference was observed in clinical outcomes. There are few factors like age, ST-elevation myocardial infarction (STEMI), non-ST elevation myocardial infarction (NSTEMI) and number of coronary artery disease predicted PCI as treatment strategy in patients with moderate to severe CKD.

**Conclusion:** Though similar rates of myocardial infarction (MI), stroke, cardiogenic and noncardiogenic death were observed in patients with moderate to severe CKD, PCI can be acceptable and less invasive treatment strategy alternative to CABG in these patients.

**Keywords:** Chronic kidney disease, creatinine clearance, coronary revascularization

## **2.23** REMOTE ISCHEMIC PRE-CONDITIONING, A NOVEL RENO-PROTECTIVE STRATEGY AGAINST CONTRAST INDUCED ACUTE KIDNEY INJURY

*Ibrahim Gul, Khawar Abbas Kazmi*  
Department of Medicine, Aga Khan University,  
Karachi

**Background:** Contrast induced Acute kidney injury (CI-AKI) is a serious complication of percutaneous coronary intervention (PCI). Although various strategies in the form of intravenous normal saline, bicarbonate and acetylcystine etc. have been adopted but the benefits are limited. Based on preliminary encouraging results, we are conducting a randomized controlled trial to assess the protective role of remote ischemic preconditioning (RIPC) against CI-AKI in patients with deranged renal functions who are undergoing PCI.

**Patients and Methods:** All patients aged  $\geq 18$  with creatinine  $\geq 4$ mg/dl who are undergoing PCI will be randomly assigned into two groups, one in whom



RIPC protocol will be applied and the second in whom it will not be applied. RIPC will be applied one hour before the procedure starts. Patients who do not give written informed consent, baseline creatinine level of less than 1.4 mg/dl, end stage renal disease requiring hemodialysis, ST Elevation Myocardial Infarction, cardiogenic shock and patient who are taking or have taken nephrotoxic drugs in the immediate past 7 days will be excluded. Creatinine level will be checked on base line, 24 hours and 48 hours after the procedure. Separate questionnaire will be used for both the groups. PCI will be done according to AHA/ACC guidelines and all other protective measures like intravenous hydration and acetylcystine etc. will be adopted. Statistical analysis will done using SPSS version 21. *Results:* Results will be displayed both in tabular and graphical forms along with description. *Conclusion:* Conclusion will be drawn based on results.

*Keywords:* CI-AKI (Contrast induced acute kidney injury), PCI (Percutaneous coronary intervention), RIPC ( Remote ischemic preconditioning)

## 2.24

### ASSOCIATION OF CORONARY ARTERY CALCIUM SCORE ON CARDIAC COMPUTED TOMOGRAPHY ANGIOGRAM WITH POSITIVE FINDINGS ON MYOCARDIAL PERFUSION SCANS AND STRESS ECHOCARDIOGRAMS

*Aatif Ahmed khan, Fateh Ali Tipoo, Khawar Kazmi  
Department of Medicine, Aga Khan University,  
Karachi*

*Background:* It is generally accepted that cardiovascular event risk increases with increasing coronary artery calcium scores. However, coronary artery calcium score doesn't correlate well with the degree of obstruction and resultant ischemia on stress testing. A number of studies have been done to assess the correlation between coronary artery calcium scoring and the presence of ischemia on stress testing either nuclear myocardial perfusion imaging or stress echocardiogram. According to

these studies, patients with low calcium score (<100) have a low likelihood (1.3%) of positive findings on perfusion imaging. And for the patients who have calcium score (>400) tend to have approximately 35% chances of having perfusion abnormalities. Patients with incremental values of coronary artery calcium scores have increased chances of positive findings on either nuclear myocardial perfusion or stress echocardiogram. Unfortunately, no such study was done in our population either at regional or national level. Therefore we decided to do such a study in a hospital based setup (tertiary care referral center) Aga Khan University Hospital.

*Objective:* To determine the association of coronary artery calcium scores with positive findings on myocardial perfusion scans or stress echocardiograms

*Methods:* The study will be conducted at Aga Khan university hospital Karachi on patients going for coronary calcium scoring for screening purpose and also for either myocardial perfusion imaging or stress echocardiograms. From the literature, the overall 35.2% relationship was found between Coronary artery calcium score and stress test in detection of relevant CAD. Therefore taking the frequency of 35.2%, with a bound on error of 0.08 (8%), an alpha significance level of 0.05 with a 95% CIs, a sample of at least 137 will be required.

*Results:* The study is currently going on

*Keywords:* Coronary artery calcium score, stress imaging,

## 2.25

### CONCOMITANT PERIPHERAL AND CORONARY ARTERY DISEASE: PATIENTS WITH COMPLEX CORONARY ARTERY DISEASE ARE MORE LIKELY TO HAVE CONCOMITANT PAD AND LOW ABI THAN THOSE WITHOUT COMPLEX DISEASE.

*Umaira Alauddin Khan  
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**Background:** Atherothrombosis is a generalized vascular disorder involving coronary, cerebral and peripheral vascular tree. It is mostly a silent condition and often first sign of the disease is the occurrence of major life threatening event as MI or stroke. Large scale International studies have demonstrated that 16-35% of patients (with established atherosclerotic disease or three or more risk factors for atherosclerosis) had polyvascular disease. One such study revealed that 29% of high risk patients had evidence of lower extremity PAD as assessed by Ankle brachial index and 16% of these had both PAD and Cardiovascular disease. Lower extremity PAD is the third leading cause of atherosclerotic cardiovascular morbidity, preceded by CAD and Stroke. The coexistence of peripheral artery disease (PAD) with coronary artery disease (CAD) is well known. The presence of combined lower extremity PAD and CAD is associated with nearly doubled all-cause mortality to 4.6%/ year compared with either disease alone. Concomitant PAD presence and severity is shown to be associated with advance CAD. Most cases go undiagnosed until later. ABI is a useful bedside technique for PAD detection. Many studies have been published on International level on the relationship of PAD and CAD but local data is scarce.

**Objective:** To Study Whether Presence And Severity Of Peripheral Arterial Disease Predicts The Extent of Coronary Artery Disease, Using Ankle Brachial Index In Patients Undergoing Coronary Angiography At AKU

**Methods:** This is a cross-sectional study of consecutive patients presenting to a tertiary care hospital. Patients undergoing coronary angiography will be screened to identify those with complex or multivessel coronary artery disease found on the angiography and ABI will be checked in these patients. Vice versa, ABI will be checked prior to angiography in patients with multiple risk factors and suspected complex coronary artery disease and followed after angiography. Throughout this document, the term PAD refers to atherosclerotic blockages in the lower extremity (LEAD). Terminologies such as peripheral arterial disease and ABI will be defined according to "2011 ACCF/AHA focused update of guidelines for the

management of peripheral artery disease", AGATHA and PARTNERS study and complex coronary artery disease is defined according to standard definition set by ACC/AHA. A descriptive analysis will be done and will be presented as mean  $\pm$  standard deviation for quantitative variables i.e.; age, days of admission, reason for angiography, risk factors, symptom duration and as a number (Percentage) for qualitative variables like gender, presence/absence of Complex coronary artery disease and presence and grading of peripheral arterial disease as determined by ABI. Number and percentage of outcome variables will be calculated and stratified by age, gender by cross tabulation to control the effect modifier.

**Results/Conclusions:** This study is currently ongoing.

**Keywords:** Complex coronary artery disease, Peripheral artery disease, lower extremity peripheral artery disease, ankle brachial index, coronary angiography

## 2.26

### FREQUENCY AND IN HOSPITAL MORTALITY OF RIGHT VENTRICULAR MYOCARDIAL INFARCTION IN PATIENTS WITH INFERIOR WALL MYOCARDIAL INFARCTION

*Amjad Nabi, Khawar Abbas Kazmi.*

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**Introduction:** Among Coronary artery diseases ST elevation myocardial infarction (STEMI) causes more morbidity and mortality. STEMI can either involve the anterior, inferior and/or the posterior wall of the heart. Acute myocardial infarction (MI) involving only the right ventricle is a rare event. Much more commonly, right ventricular infarction is associated with infarction of the inferior wall of the left ventricle, occurring in more than one-third of such cases. In such patients, the infarction typically involves the left ventricular inferior-posterior wall, septum, and posterior right ventricular (RV) free wall. The incidence of right ventricular infarction ranges from 10-50%. The

reported incidence from one study in Pakistan is 34%. RV involvement in inferior MI is associated with increased early morbidity and mortality.

*Objective:* To determine the frequency and in hospital mortality of right ventricular myocardial infarction in patients with inferior wall Myocardial infarction.

*Methods:* Study Design: Cross-sectional (descriptive study) .

Study setting: Section of cardiology, department of medicine, Aga Khan University hospital Karachi.

Study duration: Six months.

*Sample size:* From literature, Frequency of right ventricular infarction in patients with inferior wall Myocardial infarction was 10-50%. Therefore taking this frequency with a bound on error of 0.08 (8%) with a power of 0.8, an alpha significance level of 0.05 with a 95% Confidence interval, a sample of atleast 131 will be required.

*Results:* Data will be entered into SPSS version 19. Descriptive statistics will be used to describe, organize and summarize data. Mean+ standard deviation will be calculated for numerical variables like age. Frequencies and percentages will be calculated for categorical variables like right ventricular infarction, death, gender. All results will be presented in the form of tables and graphs.

*Conclusion:* Will be done after completion of the study

*Keywords:* Right Ventricular Infarction, Inferior Wall Myocardial Infarction.

## 2.27 PULMONARY ARTERIOVENOUS MALFORMATIONS AS A CAUSE OF ASYMPTOMATIC HYPOXEMIA IN A YOUNG ADULT

*Javaid Tai, Amjad Nabi, Abid Hussain Laghari.*  
*Department of Medicine, Aga Khan University,*  
*Karachi*

*Introduction:* Pulmonary arteriovenous malformations (PAVM) are caused by abnormal communications between pulmonary arteries and pulmonary veins, which are most commonly

congenital in nature. Although these lesions are quite uncommon, they are an important part of the differential diagnosis of common pulmonary problems such as hypoxemia and pulmonary nodules<sup>1</sup>.

*Case:* A 26 years gentleman presented with palpitations for 2 days which occurred spontaneously with no association with chest pain or exertion. He had total of 5 to 6 episodes before presentation to hospital. Patient described it as sudden heart racing or beating for brief period (approximately 15 to 20 seconds) with no loss of consciousness. There was no history of chest pain, shortness of breath or syncope. There was no past history of palpitations, Diabetes mellitus, Hypertension, Ischemic heart disease. He was an occasional smoker, with no other significant drug history. He was an average built gentleman, hemodynamic ally stable, without any cyanosis and saturation of 86% on room air and 93% on 3L oxygen through nasal cannula. There was no telangiectasia or clubbing. Cardiovascular and respiratory examination was normal as was neurological and abdominal. His Hemoglobin was 18.5 gm/dl with hematocrit of 58%. ECG showed premature ventricular contractions of right ventricular out flow tract morphology. Chest x ray was reported as normal by radiology department. Blood gases showed respiratory alkalosis with hypoxemia. CT angiogram showed multiple PAVM's in the lower lobes bilaterally, three on the left side and one on the right side. Patient was referred to interventional radiologist who decided to do coiling of the malformations.

*Discussion:* Pulmonary arteriovenous malformations (PAVM's) are direct communications between the smaller pulmonary arteries and veins. These are lesions in the vasculature that allow blood to bypass the capillary system, flowing from arteries directly into veins. These lesions are congenital in nature and are caused by failure of differentiation of the embryonic vascular plexus. These vessels expose the low resistance venous system to systemic pressures leading to abnormal vascular formations. Such lesions may be solitary and discrete or generally diffuse.

The condition may be asymptomatic or may present with respiratory distress, cyanosis, and hemoptysis at the other extreme. The condition can be complicated by cyanosis, polycythemia, cerebral abscess or stroke. The gold standard test for the diagnosis of PAVM's is pulmonary angiography which will show the malformations as either as diffuse or localized. Contrast echocardiography can be used as screening test for PAVM. Due to the rapid transit of blood flow through the pulmonary veins into the capillaries, the left atrium is seen to be filled early with contrast (within 2-5 seconds) following contrast passage through the right atrium. Multi-slice computed tomography is also useful. Treatment of PAVMs by embolization is an effective means of reducing lifetime risks of paradoxical embolic stroke and cerebral abscess, improving oxygenation and treating PAVM-induced hemoptysis.

*Key words:* Pulmonary arteriovenous malformations (PAVM's)

## 2.28 RELATIVE ADRENAL INSUFFICIENCY IN SEVERE DIASTOLIC HEART FAILURE – A CASE REPORT

*Nasir Rehman, Farhala Baloch  
Department of Medicine, Aga Khan University,  
Karachi*

*Introduction:* Although relative adrenal insufficiency is frequently observed in critically ill patients with septic shock due to insufficient stress response of the hypothalamic-pituitary-adrenal axis, there are few cases in past where this state has been observed with severe congestive heart failure.

*Case Report:* This is the case of a 68 years old lady, who is a known case of HTN, DM, atrial fibrillation and ASD secundum. She was admitted with the complaints of dry cough and progressive shortness of breath for 10 days. In spite of being on effective heart failure management she was symptomatic. There for after checking her baseline cortisol and response to ACTH, she was started on hydrocortisone. After starting steroids her clinical as

well as laboratory parameters improved and she was being discharged in a stable condition.

*Discussion:* In a substantial fraction of critically ill patients, cortisol response is believed to be inadequate relative to the severity of illness and degree of stress. Although the concept of relative adrenal insufficiency has been related to increased morbidity and mortality in several studies, its actual existence remains controversial. The reported incidence of this condition varies widely, depending on the patient population studied and diagnostic criteria used.

*Conclusion:* Purpose of reporting this case is to highlight the importance of alteration in hypothalamic-pituitary-adrenal axis in severe congestive heart failure and that the early diagnosis and treatment of this stat can improve the outcome.

## 2.29 SHORT TERM ADVERSE CARDIAC OUTCOMES AFTER ELECTIVE SURGERY IN PATIENTS WITH NEGATIVE PREOPERATIVE CARDIAC STRESS IMAGING

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*Background:* Negative stress testing predicts low cardiac event rates in patients during the perioperative and postoperative periods; the incidence of which is highest between 1 and 7 days after surgery. Pathophysiology of cardiac events after normal stress testing include mobilization of extravascular fluid, increased adrenergic activity secondary to pain, development of a hypercoagulable state and decreased hemodynamic monitoring capacity in wards. Both local and international data is limited regarding the perioperative morbidity and mortality after negative stress testing. Previous studies have determined the frequency of immediate perioperative risk of cardiac events after negative myocardial perfusion imaging at 1-1.6%.

*Objective:* To determine the frequency of short term adverse cardiac outcomes (including death from cardiac causes, myocardial infarction, unstable

angina, sustained ventricular arrhythmias and heart failure) within one week of elective non-cardiac surgery after negative preoperative cardiac stress imaging.

**Methods:** This is a cross-sectional study of consecutive patients presenting to a tertiary care hospital. Preoperative surgical patients will be screened to identify those with negative cardiac stress imaging and these patient shall be followed postoperatively for 7 days for any cardiac complications. Events such as death from cardiac causes, unstable angina, sustained ventricular arrhythmias and heart failure will be defined according to the “Standardized Definitions for End Point Events in Cardiovascular Trials” draft document of 2010 whereas myocardial infarction will be defined according to “The Third Universal Definition of Myocardial Infarction”. A descriptive analysis will be done and will be presented as mean  $\pm$  standard deviation for quantitative variables i.e.; age, days of admission, and as a number (Percentage) for qualitative variables like gender, cardiac event during hospitalization. Number and percentage of outcome variables (including death from cardiac causes, myocardial infarction, unstable angina, sustained ventricular arrhythmias and heart failure) were calculated and stratified by age, gender by cross tabulation to control the effect modifier.

**Results/Conclusions:** This study is currently ongoing.

**Keywords:** cardiac stress imaging, postoperative

### 2.30

#### CYSTIC MASS ON ANTERIOR MITRAL LEAFLET: AN INCIDENTAL FINDING ON ROUTINE 2D TRANSTHORACIC ECHOCARDIOGRAPHY

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The ‘blood cyst’ or the ‘blood-filled cyst’ was first reported by Elsässer in 1844. It is relatively common in newborns under 6 months of age, but

disappears spontaneously in most cases during infancy. A rare finding in young adults. When found, they can be large and may result in severe left ventricular outflow tract obstruction.

These cysts are usually blood-filled nodules measuring 1 to 2 mm, which are associated most commonly with the Atrioventricular valves but they have been reported on the Semilunar valves. Echocardiographic features of blood cyst consist of an echo free space surrounded by thin wall.

Differentials includes: Myxoma , Hydatid Cyst , vegetation , thrombus or malignancy .If symptomatic surgical excision can be done.

We are showing transthoracic echocardiographic images of a 30 years old female who was referred by a physician for echocardiography as a part of workup for her cause of progressive generalized body swelling. It shows

Mitral valve thickened, with no stenosis. Trace mitral regurgitation. A cystic mass measuring 1.6x 2.2 cms noted attached to ventricular surface of anterior mitral leaflet, (and possibly also to the chordae of anterior leaflet) . This is consistent with a probable blood cyst .Mild LVOT obstruction seen in late systole due to this cystic mass with PG of 14mm Hg .

### 2.31

#### ASSOCIATION OF TYPE OF TRANSPORTATION (EMS VS. NON-EMS) WITH SURVIVAL OF NON-TRAUMATIC OUT-OF-HOSPITAL CARDIAC ARREST PATIENTS- A MULTICENTER COHORT STUDY

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**Introduction:** Out-of-hospital cardiac arrest (OHCA) is one of the leading causes of death and disability worldwide. Pre-hospital care is a major determinant of survival from an OHCA. Research conducted in different parts of the world to find out which system of pre-hospital transportation is associated with better survival, have been

inconclusive. In Pakistan, where emergency medical services systems (EMS) is still developing; this area of research has never been explored.

*Objective:* This study aims to look at the association of type of pre-hospital transportation with survival on hospital discharge after an OHCA.

*Methodology:* We conducted a multicenter prospective cohort study at emergency departments (ED) of five major public and private hospitals from January 2013 to April 2013 in Karachi, Pakistan. Twenty-four hour data collection was performed by trained data collectors, using a structured questionnaire. All patients > 18 year, presenting with OHCA, were included. Patients with trauma, Do-not-resuscitate status, brought as a part of mass casualty and referred from other hospitals were excluded.

*Results:* During three months period, data was obtained on 399 OHCA patients. Survival from an OHCA at hospital discharge was only 1.5% in this study. In a multivariable survival analysis model, being treated by EMS was found to be 35% protective from death as compared to being treated by a Non-EMS (aHR: 0.65, 95% CI: 0.53,0.81) while adjusting for CPR (cardiopulmonary resuscitation) and location of arrest.

*Conclusion:* The overall survival is poor in this population. As compared to Non-EMS, being transported by an EMS is associated with better survival.

*Funding:* This study was funded by Fogarty-JHU-Pak-International Collaborative trauma and injury research training program.

*Keywords:* Out of Hospital Cardiac Arrest, Emergency Medical Services, Survival

## **Clinical Trials**

### 3.1 RANDOMIZED EQUIVALENCETRIAL OF AMOXICILLIN VERSUS PLACEBO PNEUMONIA (RETAPP)

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*Introduction:* Pneumonia is the leading infectious cause of death among children under five years of age and accounts for approximately two million deaths annually. According to the Integrated Management of Childhood Illnesses (IMCI), children and infants who exhibit fast breathing and cough have fast breathing pneumonia and the WHO recommends antibiotics. As WHO guidelines do not make a distinction between viral and bacterial pneumonia, these children continue to receive antibiotics where they may not be needed leading to increased antibiotic resistance in the community. Therefore, it is essential to explore the role of antibiotics in children with WHO-defined fast breathing pneumonia to develop effective guidelines for initial antibiotic treatment. Our ongoing equivalence trial comparing standard antibiotic treatment with placebo in poor urban slum setting in South Asia will address this deficit

*Purpose:* To evaluate the efficacy of antibiotic therapy versus no antibiotic therapy for children aged 2 to 59 months with WHO-defined fast breathing pneumonia.

*Methods:* This is a randomized double blinded placebo-controlled equivalence trial being conducted at primary healthcare centres located in urban slums of Karachi. 2500 children aged 2-59 months with WHO defined fast breathing pneumonia are being randomized to receive either 3 days of oral Amoxicillin (standard) or matching placebo (control), 1250 children will be enrolled in each arm. All children are being followed on day 0,1,2,3 (for treatment failure) and at 5, 14 (for relapse). A follow-up for vital status is also being done on day 21. The primary outcome, treatment failure at or before 3 days is defined as onset of chest indrawing, danger signs, O<sub>2</sub> saturation less than 92% on room air, death or change of antibiotic

for severe illness or serious adverse event. The secondary outcome relapse is the same occurring at days 5 or 14. Nasopharyngeal swabs are collected for pneumococcal cultures. Viruses are also being assessed using LUMINEX PCR.

*Results and Data analysis:* In the 4 months of trial period, we have enrolled 180 infants and 265 children. The overall per protocol treatment rate is 416 (93.5%) of which there have been 14 treatment failures (3.1%) and 12 relapses (2.7%). The overall rate of culture positivity from pneumococcus is 80.6 % while only 16 % of cases have been found to be positive for viruses. In 3.4 % there have been both.

*Conclusion:* This trial may be able to demonstrate that there is no added advantage of prescribing antibiotics to children with fast breathing pneumonia, thus developing the evidence base to revise the current WHO guidelines and reduce the financial burden on an already resource constrained health system. In the long term this will have implications for decreasing global antimicrobial resistance to antibiotics.

*Keywords:* respiratory illness, randomized equivalence trial of Amoxicillin versus placebo pneumonia, RETAPP

### 3.2 A PHASE THREE OPEN LABEL RANDOMIZED CONTROLLED TRIAL TO COMPARE THE EFFICACY OF ORAL HYPOGLYCEMIC AGENTS WITH INSULIN IN THE TREATMENT OF GDM.

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*Introduction:* Till date no clinical trial has compared the use of metformin and glibenclamide in combination with the gold standard insulin in the treatment of Gestational Diabetes Mellitus (GDM). RCTs on Oral Hypoglycemic Agents (OHA) are lacking from developing countries inclusive of Pakistan. *Objective:* Our objective was comparison



of OHA with insulin in glycemic control, cost and acceptability to treatment.

**Methods:** In our multi-center trial, we randomly assigned 154 women, at less than 33 weeks of gestation OHA or Insulin. Analysis included 71 women in insulin group. Of 70 women assigned to OHA group, 42(60%) continued metformin till delivery, 5 (7.1%) did not tolerate metformin and were switched to glibenclamide and in 23(32.9%) glibenclamide was added.

**Results:** In primary outcome, excellent glycemic control was achieved in 33.3 % women in OHA group vs 19.7 % in insulin group; satisfactory control was achieved in 60% in OHA vs 64.8 % in insulin group while poor control was achieved in 5.7 % in OHA vs 15.5% in insulin group(P = 0.04). In OHA group 5.4% were switched to Insulin. Secondary outcomes were (a)acceptability to treatment, 92.9% women in OHA group preferred same treatment in subsequent pregnancy in OHA group compared to 23.9% women in insulin group ( P < 0.001 ) and (b) average cost of treatment per woman in OHA group was \$3.62 vs \$15.4 for insulin (P value 0.01).

**Conclusion:** We concluded that OHA is non-inferior to insulin in achieving glycemic control and is more feasible and economical therapy for GDM.

**Keywords:** Gestational Diabetes Mellitus, Oral hypoglycemic agents, Insulin versus oral agents

### 3.3 COMPARISON OF KETOROLAC AND LOW-DOSE KETAMINE IN PREVENTING TOURNIQUET-INDUCED INCREASE IN ARTERIAL PRESSURE

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**Background:** Application of tourniquet during orthopaedic procedures causes pain and increase in blood pressure despite adequate anaesthesia and analgesia. In this study we compared ketorolac with ketamine in patients undergoing elective lower limb surgery with a tourniquet in order to discover if

ketorolac was equally effective or better than ketamine in preventing tourniquet-induced hypertension.

**Methods:** Approval was granted by the institutional Ethics Review Committee and informed consent was obtained from all participants. It was a randomized double-blinded controlled trial with 38 patients each in the ketamine and ketorolac groups undergoing elective lower limb surgery. Induction and maintenance of anaesthesia was standardized in all patients and a minimum alveolar concentration of isoflurane was maintained at 1.2 throughout the study period. One group received ketamine in a dose of 0.25 mg/kg and the other group received 20 mg ketorolac 10 minutes before tourniquet inflation. Blood pressure was recorded before induction of anaesthesia (baseline) and at zero,10, 20, 30, 40, 50, and 60 minutes after tourniquet inflation.

**Results:** At 0 and 10 minutes tourniquet induced rise in blood pressure was not observed in both groups. At 20 and 30 minutes it was observed but was not significantly above baseline and also not significantly different between the groups, while at 40 to 60 minutes, rise in blood pressure was significantly higher than baseline blood pressure and was significantly higher in ketorolac group compared to the ketamine group.

**Conclusion:** We conclude that ketamine is superior to ketorolac in preventing tourniquet induced increases in blood pressure.

**Keywords:** Tourniquet pain, tourniquet-induced hypertension, ketamine; ketorolac

### 3.4 EFFECTS OF KANGAROO MOTHER CARE: A RANDOMIZED CONTROL TRIAL IN SECONDARY HOSPITAL KARACHI

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**Objective:** A comparative study carried out to evaluate the efficacy of kangaroo mother care

(KMC) versus routine care in preterm and low birth weight newborns.

*Materials and Methods:* A randomized control trial was conducted in two secondary hospitals of Aga Khan University over a period of three months. A sample of 41 newborns was assigned to KMC and control group by permuted block randomization.

*Results:* The exclusive breastfeeding practices observed in KMC was more (88%) than in control group (66%). Frequency of breast feeds were found to be increased in KMC (66%) with 10 to 12 feeds per day as compare to 42% in control. The mean breastfeeding behavior score depicted 14.0 (SD+4.6) in KMC than mean score of 12.0 (SD+4.43) in control, Independent t-test showed p-value: 0.03. The mean weight difference from birth to 1 month was 0.84 + 0.4 kg in KMC groups and 0.67 +0.3 kg p-value: 0.02, CI {0.02, 0.32 in control groups. A significant difference was observed among the two groups with respect to the incidences of hypothermia. 90% of newborns in control group developed hypothermia in comparison to only 10% in KMC (p-value: < 0.001), CI {-182, -0.056}. The median length of stay among KMC group was 48+28.5 hours and median length of stay in control group was 72+ 38.2 hours having a p-value of 0.04 and CI {-30.21, -0.22}. For shorter length of stay (48± days vs. 72±), The only non-significant statistical finding was incidences of suspected infection as fisher exact test showed p-value of 0.10. *Conclusion:* The major determinants of morbidities among preterm and LBW infants are hypothermia, ineffective feeding, infections and poor weight gain. Current study is the first of its kind in Pakistan focusing on the effect of kangaroo mother care. The positive outcomes of the study supports KMC to be effective in Therefore, it is important to encourage KMC at private and government levels as it is cost effective care and it can help to decrease the alarming high mortality and morbidity rates of preterm and LBW infants, particularly in developing countries.

*Keywords:* kangaroo mother care, preterm and low birth, morbidities

## **Dentistry/Orthodontics/Dental Surgery**

#### 4.1 EFFECT OF CLARK'S TWIN BLOCK APPLIANCE (CTB) AND NON-EXTRACTION FIXED MECHANO-THERAPY ON THE PHARYNGEAL DIMENSIONS OF GROWING CHILDREN

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*Introduction:* Narrow airway dimensions due to mandibular deficiency can predispose an individual to severe respiratory distress. Hence, treatment with mandibular advancement devices, or functional appliances at an early age might help in protecting a child from the long term respiratory disturbances. Therefore, the aim of current study was to evaluate the mean changes in the pharyngeal dimensions of children with mandibular deficiency treated with twin block (CTB) followed by fixed orthodontic treatment.

*Methods:* Orthodontic records of 42 children (21 males, 21 females) with mandibular deficiency were selected comprising of three lateral cephalograms taken at the start of CTB treatment, after CTB removal and end of fixed appliance treatment. One - way repeated measures ANOVA was used to compare the pre-treatment, mid-treatment and post-treatment pharyngeal dimensions. Post-hoc Bonferroni test was used for multiple comparison of treatment outcomes after CTB and fixed appliances taking p-value of  $\leq 0.05$  as statistically significant.

*Results:* The superior pharyngeal space ( $P = 0.00$ ) and upper airway thickness ( $P = 0.01$ ) was significantly increased after CTB but only the change in superior pharyngeal space remained stable after fixed mechano-therapy. Males showed a greater increase in airway dimensions with CTB in comparison to the females, and the dimensional change in males was constant after the end of fixed orthodontic therapy.

*Conclusion:* CTB can have a positive effect in improving the pharyngeal space and the resultant increase in the airway remains stable on an average of two and a half years.

*Keywords:* functional appliance, pharyngeal passage, mandibular retrognathia

#### 4.2 FACIAL SOFT TISSUE ANALYSIS AMONG VARIOUS VERTICAL FACIAL PATTERNS

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*Background:* The emergence of soft tissue paradigm in orthodontics has made various soft tissue parameters an integral part of the orthodontic problem list. The purpose of this study was to determine and compare various facial soft tissue parameters on lateral cephalograms among patients with short, average and long facial patterns.

*Methods:* A retrospective cross-sectional study was conducted on the lateral cephalograms of 180 adult subjects divided into three equal groups i.e. short, average and long face according to the vertical facial pattern. Incisal display at rest, nose height, upper and lower lip lengths, degree of lip procumbency and the nasolabial angle were measured for each individual. The gender differences for these soft tissue parameters were determined using Mann-Whitney U test while the comparison among different facial patterns was performed using Kruskal-Wallis test.

*Results:* Significant differences in the incisal display at rest, total nasal height, lip procumbency, the nasolabial angle and the upper and lower lip lengths were found among the three vertical facial patterns. A significant positive correlation of nose and lip dimensions was found with the underlying skeletal pattern. Similarly, the incisal display at rest, upper and lower lip procumbency and the nasolabial angle were significantly correlated with the lower anterior facial height.

*Conclusion:* Short facial pattern is associated with minimal incisal display, recumbent upper and lower lips and acute nasolabial angle while the long facial pattern is associated with excessive incisal display, procumbent upper and lower lips and obtuse nasolabial angle.

*Keywords:* Facial Soft Tissues, Cephalometry, Vertical Facial Pattern

### 4.3 RELIABILITY OF VARIOUS SKELETAL INDICATORS IN ASSESSING VERTICAL FACIAL SOFT TISSUE PATTERN

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*Introduction:* A proportionate relationship among different facial structures is the key to an esthetic and pleasing facial appearance. Previously, diagnosis and treatment planning had been based on the Angle's paradigm. With the advent of the soft tissue paradigm, the trend in orthodontic diagnosis and treatment planning has been significantly affected. The aim of this study was to determine which of the commonly used skeletal analyses better correlates with the soft tissue parameters. Thus, an accurate diagnosis can be made with the elimination of unnecessary analyses, ensuring an efficient treatment plan. *Material and Methods:* A sample of 192 subjects (96 males and 96 females; mean age =  $22.95 \pm 4.75$  years) was uniformly divided into long, normal and short face groups on the basis of soft tissue vertical pattern. Various landmarks and measurements were made on pretreatment lateral cephalograms. Pearson's correlations between various skeletal analyses and soft tissue parameters were determined for both males and females and different vertical groups. A probability value of  $\leq 0.05$  was considered as statistically significant.

*Results:* In males, a weak positive correlation ( $r = 0.485$ ) was found between skeletal LAFH/TAFH and soft tissue LAFH/TAFH, whereas in females MMA showed a weak positive correlation ( $r = 0.300$ ). In the long face group, a weak positive correlation ( $r = 0.349$ ) was present between SN-GoGn and soft tissue LAFH/TAFH. Down's Y-axis showed a weak positive correlation ( $r = 0.256$ ) in short face group and Jarabak's ratio showed a weak negative correlation ( $r = -0.314$ ) in normal face group.

*Conclusions:* Skeletal analyses (MMA, skeletal LAFH/TAFH) significantly correlated to soft tissue parameters. Males showed a higher correlation between skeletal and soft tissue parameters as

compared to that of the females. Skeletal and soft tissue parameters showed a better correlation in long face individuals as compared to the short face.

*Keywords:* Cephalometry, vertical growth pattern, diagnosis

### 4.4 EFFECTIVENESS OF GINGIVAL RETRACTION METHODS: A SYSTEMATIC REVIEW

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*Background:* It is essential to properly manage the gingival tissues for obtaining accurate impressions when fabricating fixed restorations in which the finish line is near the gingival sulcus. The retraction of the gingiva creates sufficient space between the preparation finish line and the gingiva to allow for the injection of impression material into the gingival crevice. There are various gingival retraction methods to choose from including mechanical, chemomechanical and surgical methods. *Objectives:* The purpose of this systematic review was to see which gingival retraction method was most effective in terms of amount of gingival retraction achieved and minimal trauma to the gingival tissue as assessed by clinical parameters.

*Methods:* PubMed, CINAHL plus (Ebsco), COCHRANE were searched along with hand search using the key terms and different permutations of gingival retraction\* AND displacement method\* OR technique\* OR agents OR material\* OR medicament. Our initial search results yielded 142 articles which were narrowed down to final 7 articles after a strict eligibility of including clinical trials or experimental studies on gingival retraction methods with the amount of tooth structure gained and assessment of clinical parameters as the outcomes, conducted on human permanent teeth only.

*Results:* The total number of teeth assessed in all 7 studies were 336. Most commonly used gingival retraction method was mechanical. 3/7 studies

reported the amount of gingival retraction achieved whereas 4/7 studies assessed the clinical parameters. **Conclusions:** There are just seven studies available on the retraction methods. The studies were heterogeneous in terms of reporting the outcomes. No single method (mechanical/chemomechanical/surgical) appeared superior to the other. Clinical parameters such as PI, GI, PD, AL, BOP etc. were not significantly affected with gingival retraction.

**Keywords:** Gingival Retraction, Systematic Review, Retraction methods

#### 4.5

*A Survey on Oral Implantology education in the dental colleges of Pakistan*

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**Background:** Dentists nowadays are more likely to come across patients seeking either dental implants for replacement of teeth or requesting maintenance of their already placed implant-supported dental prostheses. Dentists gain knowledge, learn technical skills and get experience in treatment planning for missing teeth during their formative years. The undergraduate curriculum requirements for Oral Implantology in Pakistan are very nominal but the demand on the graduates for this service is immense. This imbalance has led to frustration among fresh graduates.

The objectives of this study were:

1. To explore the status of Implantology teaching at BDS level education in Pakistan and
2. To assess the topics/areas in the Implant dentistry curriculum that are being overlooked or not taught at the undergraduate level.

**Methodology:** A questionnaire was distributed with a covering letter to the faculty of Operative Dentistry, Prosthodontics, Oral Surgery, Periodontics in dental institutions to teaching faculty involved in the undergraduate teaching of management of missing teeth including dental implants.

The questionnaire gained information on: year of introduction of implant dentistry into undergraduate curriculum, departments involved in teaching implant dentistry, format of teaching, topics covered related to dental implants and commercial implant systems used in teaching. Data was analyzed using SPSS 19.0. Descriptive statistics and frequency distribution were computed.

**Results:** We received a total of 33 forms.

Majority of the faculty who responded were fellows of College of Physicians and Surgeons Pakistan or of Royal College of Surgeons, with more than 5 years of clinical experience.

Almost 50% respondents had acquired skills of Implantology by commercial courses.

Oral Surgery department was responsible for teaching of Oral Implantology in majority (n=19) of the teaching facilities.

In majority of the dental colleges (n=27); study of Implantology is a relatively new specialty, introduced after the year 2005. Out of 33, 27 respondents said that implants were placed at their institutions, while only 18 faculty always allowed their students to observe the procedure of implant placement. Lectures (64%), rather than hands on clinical experience (10%) is still the mainstay of teaching Implantology at undergraduate institutions.

**Conclusions:** Department of Oral Surgery is primarily responsible for implant education at undergraduate level; hence the subject teaching is Surgery oriented. Only half of the students were allowed to observe implant placement procedure at teaching centers. Implant education started in most institution in last 5-10 years. Topics such as implant prosthetics, bone regeneration and grafting are poorly covered in contemporary implant teaching.

**Keywords:** Implantology, Undergraduate curriculum, Education

#### 4.6 AMOUNT OF TOOTH SUBSTANCE GAINED WITH CROWN LENGTHENING: A SYSTEMATIC REVIEW

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*Background:* Extensive caries, short clinical crown, traumatic injury, or severe para-functional habits may limit the amount of tooth structure available to properly restore an affected tooth. The restoration of an adequate biological width and the creation of an adequate space for proper placement of crowns prosthetic margins on a compromised tooth can be achieved surgically (crown lengthening procedure) or orthodontically (forced eruption), or by a combination of both.

*Objective:* The purpose of this systematic review was to find out which crown lengthening procedure is the most commonly used and provides best results in terms of amount of tooth substance gained. *Methods:* Search engines like Pub med and CINAHL plus (Ebsco) were used to search articles related to our review question using the key terms and different permutations: • Surgical crown lengthening, • Gingivectomy/gingivoplasty • Biologic width, • Orthodontic extrusion, • Sub-gingival restoration • Ferrule We registered our protocol with Prospero (systematic review registry, ID# CRD42014013266. Our initial search results yielded 412 articles which were narrowed down to final 8 articles after a strict eligibility of including clinical trials on crown lengthening surgery with the amount of tooth structure gained as an outcome, conducted on human permanent teeth only.

*Results:* • The total number of teeth assessed in all 8 studies was 321 (range 20-84 per study) • The surgical site was mentioned in 2/8 studies which made a total of 73 from the 321 teeth assessed. • Only 80 of the 321 teeth assessed in the 8 studies were affected because of subgingival caries and another 53 had a fracture going sub-gingivally and the remaining studies did not mention the clinical presentation • The radiographic evaluation was assessed in only 1/8 studies which had 30 teeth • In 7 out of the 8 studies, (total of 291 teeth), did not

mention which jaw maxillary or mandibular, they belonged to. • The most common indication for crown lengthening in these 8 studies was for proper restorative treatment *Conclusions:* • The number of clinical trials on CLS (crown lengthening surgery) was limited. • The quality of the studies which report data on CLS was mostly inadequate because basic demographics like the surgical site, the type of jaw (mandibular/ maxillary), radiographic evaluation and clinical presentation were missing from most of the studies evaluated • APF (apical re-positioning of flap) with bone reduction was the most commonly used technique (7/8 studies) for CLS • The mean amount of tooth structure gained initially was 2.46mm which decreased to 1.49mm after 6months

*Keywords:* crown lengthening, gingivectomy, systematic review

#### 4.7 ASSESSMENT OF ROOT CARIES IN PATIENTS VISITING A TEACHING HOSPITAL KARACHI

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*Introduction:* Root caries has become an important dental problem because people are living longer and keeping their teeth longer. As patients grow older, their gums recede and root surface are exposed, making them susceptible to root caries. An increased retention of natural teeth means more adults at risk of dental caries (coronal and root), and the complexity of these restorations may require additional skills as well as involving medical considerations when treating older adults.

*Objectives:* 1. To determine the frequency of root caries among patients visiting AKUH dental clinic. 2. To determine the association of root caries with gender, xerostomia, smoking, betel nut and sugar intake. *Materials & Methods:* A cross-sectional study was conducted at Aga Khan University Hospital from December 2013 to January 2014. Patients above 30 years of age who visited dental clinics with gum recession or root surface caries

with or without root filling were included. We excluded subjects who visited for braces or who did not consent for the participation. Data was entered in a Performa. Information included age, sex, brushing habits, malocclusion, use of systemic medications, xerostomia etc. Intraoral examination was done on all teeth excluding third molars for occlusion, gum recession and root surface assessment for caries etc. SPSS 19.0 was used. Frequency distribution of all the variables was determined. The unit of analysis for root surface caries was the tooth while for demographics, habits and occlusion the data was analyzed at patient level. The variables of interest were the frequency of root surfaces exposed, carious and restored.

**Results:** A total of 4080 root surfaces of 40 subjects (25 males and 15 females) were examined. Mean age was 55.6 years ( $\pm 11.4$  SD). About 805 (19.7%) surfaces were exposed. Around 137 (3.35%) surfaces were carious and only 18 (0.44%) were restored. Eighteen subjects had root caries on less than 2 surfaces; fourteen subjects had root caries on 3-5 surfaces and there were eight subjects with more than 5 carious surfaces. The most common brushing technique was horizontal and combination strokes with manual brushing twice daily using medium brush. Nine subjects (22.5%) reported use of paan and chalia. There were 7 (17.5%) smokers and 3 (7.5%) alcoholics in the sample. Class I occlusion was most frequently found (95%). Bruxism was observed in 13 subjects (32.5%). Most common type of gum recession found was Miller's Class III (60%). Xerostomia was observed in 16 (40%) subjects. Diabetes, hypertension and other comorbidities were observed in 17 subjects.

**Conclusion:** The most common gum recession pattern observed in our study was deep and wide (Miller's Class III). One fifth of the subjects had extensive root caries (> 5 surfaces). Root surface exposure was found to be associated with smokers (p 0.01) while root surface caries was associated with high sugar intake (p 0.02).

**Keywords:** root surface, root caries, gum recession

#### 4.8

#### VERTICAL FACIAL MORPHOLOGY IN CLASS II SUBJECTS WITH INCREASED OVERJET

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**Objective:** To evaluate the vertical facial morphology in untreated orthodontic patients with Class II division 1 malocclusion

**Materials & Methods:** The sample comprised of 113 patients (61 females and 52 males) between 8 and 13 years of age, having Class II malocclusion with overjet of > 4 mm, no prior history of orthodontic treatment, no craniofacial anomalies and no missing first permanent molars. Skeletal parameters were assessed by using pretreatment lateral cephalograms of these patients. Overjet was measured on the study casts taken from each subject using digital vernier caliper. Descriptive statistics were calculated for age and different vertical facial cephalometric angles. Pearson's correlation was used to correlate various parameters. One-way ANOVA was used for comparison of means of vertical facial cephalometric angles among three overjet groups (Group-I = 5-7 mm, Group-II = 8-10 mm, Group-III = > 10 mm). **Results:** The means of all the vertical facial cephalometric parameters were in the normal range representing average facial pattern in patients with Class II division 1 malocclusion, except Jaraback ratio which indicated tendency towards long facial pattern. No statistically significant correlation was found between overjet and the parameters of vertical facial morphology. Frankfort mandibular plane angle was found to have moderately significant positive correlation with Steiner's mandibular plane angle (0.789\*\*) and Y-axis (0.604\*\*).

**Conclusion:** • Patients with Class II division 1 malocclusion have an average vertical growth pattern • Overjet value is not a predictor of vertical facial morphology • There is no significant correlation between overjet and parameters used to assess vertical facial morphology

**Keywords:** Class II malocclusion, overjet, vertical facial morphology



#### 4.9 CEPHALOMETRIC EVALUATION OF THE EFFECTS OF TWIN BLOCK APPLIANCE IN SUBJECTS WITH CLASS II DIVISION 1 MALOCCLUSION

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Karachi

*Objective:* To evaluate the mean change in skeletal, dento-alveolar and soft tissue variables of Class II division 1 malocclusion patients on lateral cephalogram from baseline (T0) to 1 year (T1) following twin block appliance therapy

*Material and Methods:* After taking an informed consent, pre- and post- treatment lateral cephalogram of 53 patients aged 9-16 years were obtained. All were presented with Class II division 1 malocclusion initially and were treated with Twin block appliance. The appliance wear was monitored and those who did not wear it for >12 hours/day were excluded. Several lines and angles were drawn on lateral cephalogram to evaluate the skeletal, dental and soft tissue variables. Overjet was measured on the dental casts with vernier calipers. The pre- and post-treatment variables were compared by Paired t-test. Level of significance was kept at  $p \leq 0.05$ .

*Results:* There was a significant improvement in skeletal relationship of underlying jaws ( $p < 0.001$ ), increase in the vertical jaw relationship ( $p < 0.013$ ), increase in mandibular unit length and body ( $p < 0.001$ ). Significant reduction in upper incisor inclination was found whereas lower incisor incisors inclination increased ( $p < 0.001$ ). There was significant retraction of upper lip ( $p < 0.01$ ), increase in nasolabial ( $p < 0.02$ ) and Z-angle and decrease in H-angle ( $p < 0.001$ ).

*Conclusions:* Twin block appliance improves the overall facial profile by combination of changes in underlying skeletal and dento-alveolar structures

*Keywords:* Twin block appliance, Class II division 1, Cephalometry

#### 4.10 EARLY CHILDHOOD CARIES; PREVALENCE & ASSOCIATED FACTORS IN A LOW INCOME, URBAN COMMUNITY OF KARACHI.

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*Background:* Early childhood caries is a chronic infectious disease of the primary teeth in children <6 years of age. The global burden of ECC is high in developing countries and considered as an emerging public health problem. It is known to affect the child's quality of life, physical and cognitive development. Evidence also suggests an association between ECC and anemia. In local context, limited information exists on the prevalence of ECC and its associated factors, particularly in low income, urban communities.

*Objective:* The primary objective was to determine the prevalence and factors associated with ECC in 2-6 year old children from a low income, urban community of Karachi. The secondary objective was to describe the oral health and hygiene in the study population.

*Methods:* A community based survey was conducted in Sultanabad, Karachi between 3rd march and 16th April, 2014. A preformed, structured questionnaire was administered to the mother to collect information on child related and parental/household characteristics. Physical examinations included measurement of child's height and weight, assessment for anemia using the Hemocue device and dental examination using sterile, disposable dental examination kits.

*Results:* 409 households from six blocks were surveyed from the community. The prevalence of ECC was 52.5% (95% CI: 47.7%-57.3%) of which 23.2% (19.2%-27.2%) comprised severe ECC. Higher prevalence was observed in older age and in males. Using a zero-inflated negative binomial regression, 6 factors were found to be associated with ECC in the study population, which included the child's anemic status, age, sex, derbis index score, consumption of sweetened yoghurt and

household size. In the adjusted model, we found a significant association between mean DMFT scores and the presence of severe anemia in children. (DMFT ratio: 2.23, 95%CI: 1.42-3.51)

*Conclusion:* Our study suggests an alarming burden of ECC along with a high proportion of decayed, untreated teeth. The findings also add to current evidence on the association between ECC and anemia in children. Further studies are required to replicate our findings and establish the factors associated with ECC in other settings.

*Keywords:* Early childhood caries, DMFT, anemia

#### 4.11

#### OUTCOME OF IMPLANT DENTISTRY IN A UNIVERSITY HOSPITAL, KARACHI, PAKISTAN

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*Background:* The overall success of dental implants ranges between 95-97%. Since local data is lacking on the success of dental implants, we decided to explore the outcome of implant services in our center.

*Objective:* To assess the outcome of dental implant surgery and prosthetics at Aga Khan University Hospital, Karachi, Pakistan

*Methodology:* It was a retrospective charts review which included 141 implants placed at Aga Khan University from 2010-2014. Variables such as length, diameter of implants, type of implant, type of final prosthesis, loading protocol and patient factors were analyzed. Descriptive statistics and frequency distribution were computed. Chi square test was applied to determine association between implant failures and variables such as premature loading and atrophic bone. Level of significance was kept at <0.05.

*Results:* Out of 141 implants (78 maxilla and 63 mandible), five failed to osseointegrate. Among all surgically successful implants (n=136) 46 are yet to be loaded. Out of 90 prosthetically loaded implants, 51 were bridge abutments, 37 were single crown

abutments and 2 served as overdenture abutments. Twenty four implants were immediately loaded. All implants were Zimmer tapered vent with most common length being 11.5mm, most common diameter 4.7mm. Straight abutments were used for most of the cases.

*Conclusions:* We are able to achieve a success rate of 96.5% in last 48 months. Factors such as atrophic maxilla, premature loading and bone grafting were not statistically associated with failures (p-value 0.09).

*Keywords:* Dental implants success, dental practice, dental implant placement.

## **Endocrinology/Diabetes**

### 5.1 TYPE 1 DIABETES MELLITUS PRESENTED WITH DIABETIC KETOACIDOSIS (DKA) IN A NEONATE

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Neonatal diabetes mellitus (NDM) are a rare occurrence with an incidence of one affected individual among four hundred thousand live births. NDM can be divided into Transient (TNDM) and Permanent (PNDM) types. In instances of TNDM, infants develop diabetes in the first few weeks of life however, they go into remission a few months later, with a possibility of relapsing into a permanent diabetic state usually around their adolescence or adulthood. Patients are younger at the age diagnosis of diabetes and have lower initial insulin requirements. The dysfunctional pancreas in this condition may be maintained throughout life, with periods of relapse at times of metabolic stress like puberty or pregnancy. In PNDM on the other hand, the pancreas fails to secrete insulin in the late fetal or early post natal period and does not go into remission. Individuals with TNDM are more likely to have intrauterine growth retardation and are at a decreased likelihood to develop ketoacidosis than PNDM patients. A significant overlap occurs between both groups, to an extent that TNDM cannot be distinguished from PNDM based solely on clinical features. A 26 days old boy was received in the Emergency department of AKU with complaints of fever for 2-days accompanied with respiratory distress since morning. A provisional diagnosis of DKA was established on the basis of labs workup and appropriate management was initiated. Patient was then discharge in a stable condition on oral hypoglycemic drugs.

*Keywords:* Neonate, Diabetic Ketoacidosis, Pakistan

### 5.2 SOLUBLE TRANSFERRIN RECEPTOR: A NEW PREDICTOR OF IRON STATUS

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*Background:* Inflammation affects the reliability of ferritin. The serum level of transferrin receptor protein (sTfR) represents true demand of iron in the body. This study attempts to identify levels of sTfR and correlate the trends of sTfR/ferritin index with BMI in the population of Karachi.

*Materials and Methods:* 132 gender matched volunteers between the ages of 20-60 years were recruited for this cross-sectional study. BMI was calculated using the formula: (weight in kg / height in m<sup>2</sup>). Following groups were made according to South Asian criteria of BMI; Group A: normal weight (18.0-22.9 kg/m<sup>2</sup>), Group B: overweight (23.0-24.9 kg/m<sup>2</sup>), Group C: obese (>25.0 kg/m<sup>2</sup>). Serum ferritin, sTfR and CRP levels were determined using ELISA kits. Statistical comparisons were performed using Mann Whitney U and Spearman's rank correlation, p< 0.001) and sTfR (r=0.263, p= 0.036) levels were positively associated to BMI.

*Conclusion:* sTfR is most likely a better clinical measure of iron status in inflammatory conditions as its expression is effected by erythropoiesis and not by inflammation. Risk of Acute myocardial infarction can also be predicted by increased sTfR/ferritin ratio.

*Keywords:* obesity, inflammation, sTfR/ferritin

### 5.3 RELATIONSHIP BETWEEN VITAMIN D, LEPTIN, BODY COMPOSITION

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**Objectives:** The relationship of bone mass, leptin and vitamin D is ambiguous in obese Pakistani population. We correlated body fat mass (BF %) with leptin, vitamin D and bone mass density (BMD) in adult males.

**Method:** 132 volunteers were recruited for this cross-sectional study. BF% was determined using bioelectrical impedance analysis and the participants were classified as: Group A (BF% 15-21.9); Group B (BF% 22-27.9) and Group C (BF% >28.0). The BMD was calculated by ultrasound bone densitometer (T-score between +1 and -1 considered normal). ELISA kits were used to determine the levels of vitamin D and Leptin. Mann-Whitney U test and Spearman's correlation (r) were applied considering P value <0.05 significant.

**Results:** Despite all groups having low Vitamin D, a marked decrease was observed in group C as compared to groups A & B ( $p < 0.018$ ). BMD T-score was <-1; total calcium was within normal range in all three groups. Serum leptin was raised in group C as compared to group A & B ( $p < 0.03$ ) and exhibited a weak correlation with bone mass ( $P = 0.002$ ;  $r = 0.029$ ). BF% was negatively associated with vitamin D ( $P = 0.004$ ;  $r = -0.351$ ) while positively correlated with leptin ( $P = 0.038$ ;  $r = 0.256$ ) and bone mass ( $P = 0.001$ ;  $r = 0.409$ ).

**Conclusion:** Excess amount of BF% leads to decreased vitamin D associated with raised leptin that might act to maintain the BMD in Pakistani obese males.

**Keywords:** Bone weight, Leptin, Vitamin D

### 5.4 COMPARISON OF POINT-OF-CARE ANALYZER BIO-RAD IN2IT (I) WITH VARIANT TURBO (HPLC) FOR HBA1C

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**Introduction:** Hemoglobin A1c (HbA1c), reflecting mean glycemia, is used as a risk parameter for diabetic complications and as a quality assurance indicator for the quality of diabetes care. Point-of-care (POC) instruments for HbA1c are widely used in the world for the measurement of HbA1c. The rapidity of obtaining a result can increase clinical effectiveness and contribute to improved outcomes for patients, but it is imperative that the result provided by the device is accurate and reliable. Currently, we perform HbA1c on Turbo. There is no POC testing available for this test. Bio-Rad in2it (I) is a POC testing instrument for testing HbA1c. This device allows HbA1c evaluation within 10 min, using 10ul of blood, in the laboratory or clinical unit. The method is free of interference from common haemoglobin variants, labile glycated haemoglobin and carbamylated haemoglobin, hyperbilirubinaemia and hypertriglyceridaemia (4mmol/L).

**Aims and Objectives:** The purpose of this study was to compare HbA1c results given by In2it with Variant Turbo (HPLC).

**Materials and Methods:** The study was conducted at Hematology section of Clinical Laboratories of The Aga Khan University Hospital. It was a prospective study. Time duration was one year (from March, 2013 to Feb, 2014). Blood samples were drawn in EDTA tube. The analytical performance of the In2it analyzer was compared with Variant Turbo with respect to correlation coefficient, interference with Hb variants and linearity.

EP evaluator 10 was used for statistical analysis. Patients from both sexes and all age groups were included in the study. Samples with high and normal levels were used for comparison. Blood samples which were not in proper proportions to the anticoagulant, strongly lipemic, hemolyzed and

samples with low levels <4.0 were also excluded because the In2it does not give actual levels of HbA1c <4.0.

**Results:** Total 20 samples were analysed. Median age was 50 (Range 36-78 years). There were 10 females and 10 males. The correlation of co-efficient between two methods was 0.99 in samples with abnormal high values and 0.83 in samples with normal values. The Linearity of In2it was 4-14% whereas of Variant Turbo was 3.5-19.0%. For interference with regard to hemoglobin variants, 64 samples were analyzed. None of the samples showed any interference on In2it due to presence of Hb variants. For Turbo, all 64 samples gave interference due to presence of Hb variants.

**Conclusion:** The In2it analyzer is suitable for HbA1c assay in small laboratory series and for point-of-care testing, and its analytical performance is satisfactory overall. However, several issues related to software need to be improved for optimal application. Use of In2it as POC instrument for measuring HbA1c can improve care of diabetic people by providing rapid and reliable results

**Keywords:** Hb variants, HbA1c, In2it

## 5.5

### RATIO OF FOLLICLE STIMULATING AND LUTEINIZING HORMONE WITH HORMONES OF IMPLANTATION IN INTRACYTOPLASMIC SPERM INJECTION

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**Objective:** To assess relationship of ratio of follicle stimulating (FSH) and luteinizing hormone (LH) with hormones of implantation in females down-regulated for Intracytoplasmic sperm injection (ICSI).

**Subjects and Methods:** Retrospective study of 564 primary infertile females booked for ICSI from June 2012 till August 2014 was carried. They were 20-40-years old with infertility of more than two years

and body mass index 18-35kg/m<sup>2</sup>. FSH and LH were assessed before and Estradiol (E2) and Progesterone (P) after down regulation of ovaries by enzyme linked Immunosorbent assay. Logistic regression was applied for clinical pregnancy (CP) with FSH, LH and its ratio. Median value of variables with best results after regression was used for stratification of groups. Hormones of implantation; E2, P and their ratio was compared in the derived groups.

**Results:** On the basis of highest Beta error, groups was stratified as ;group I  $\leq 1.26$  and group II  $> 1.26$  median value of FSH/LH ratio. The CP rate was 36% with higher number of pregnancies 158 /286 (55 %) in Group I as compared to 44/278 (16%) in group II. Group I females had high peak and mid luteal E2 and low P as compared to other group ( $p < 0.001$ ). Linear correlation of FSH/LH was observed with E2/P ( $r = -0.250$ ,  $p < 0.001$ ).

**Conclusion:** High E2/P ratio required for CP in stimulated cycles was acquired by females with low FSH/LH ratio measured before down regulation of ovaries.

**Keywords:** Infertility, Intracytoplasmic sperm injection, , FSH/LH ratio

## 5.6

### BODY MASS INDEX AND HORMONES OF IMPLANTATION IN INTRACYTOPLASMIC SPERM INJECTION

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**Background:** There has been an increase in the number of obese infertile females booked for infertility treatment procedures like intra cytoplasmic sperm injection (ICSI). **Objective:** To relate female body mass index (BMI) with reproductive outcomes and estradiol levels required for acquiring clinical pregnancy after ICSI.

**Materials and Methods:** Quasi experimental design of 969 females was conducted from June 2010 till

August 2011. Females were grouped on the basis of BMI; underweight (BMI < 25 kg/m<sup>2</sup>, no cardiac activity on trans vaginal scan (TVS) and clinical pregnancy with  $\beta$ hCG > 25mIU/ml and cardiac activity on TVS.

**Results:** Females with BMI 23-25.99 kg/m<sup>2</sup> had maximum oocyte retrieval, fertilization, implantation and clinical pregnancy rates in comparison to obese females with BMI  $\geq$ 26 kg/m<sup>2</sup>. The latter had lowest basal, peak and mid luteal E2 with minimum clinical pregnancy rates as compared to other females.

**Conclusion:** A BMI cut off value less than 26 kg/m<sup>2</sup> in our study population was associated with better oocyte parameters, embryo quality and pregnancy outcome due to high E2 levels in all phases of ovarian cycle.

**Keywords:** Intracytoplasmic sperm injection, body mass index, controlled ovarian stimulation

## 5.7

### ASSESSMENT OF ANTI MULLERIAN HORMONE AS AN INDICATOR OF OVARIAN RESERVE, IN CYCLOPHOSPHAMIDE INDUCED ACUTE OVARIAN TOXICITY IN MICE

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**Objective:** Chemotherapy induced infertility is a serious concern in cancer survivors. Ovarian toxicity induced by Cyclophosphamide (CYP), leads to infertility. Anti Mullerian hormone (AMH) has emerged as an accurate predictor of ovarian reserve. The aim is to evaluate the role of AMH in early detection of a decline in ovarian reserve in CYP treated mice.

**Methodology:** Experimental study was designed with 20, ten-week old female mice, divided into Group A (controls) and group B (three weekly doses of CYP). The animals were sacrificed on the 28th day of the study and the morphology of their ovaries was examined. Serum samples were collected to estimate AMH levels. These levels

were correlated with the number of various types of ovarian follicles. The data was analysed using SPSS 19.0; the significance of various parameters was calculated using ANOVA or Kruskal Wallis test.

**Results:** No weight fluctuation was seen in group B. All types of ovarian follicles showed significant reduction in group B as compared to group A ( $p < 0.01$ ). The number of primordial follicles decreased by 55.8 %, primary follicles by 54.9 % and secondary follicles by 34.7 % in group B. The number of atretic follicles and corpus luteum rose by 80% and 59 % respectively in group B ( $p < 0.01$ ). The levels of AMH in CYP treated group B were found significantly low ( $p < 0.01$ ).

**Conclusion:** Acute ovarian injury induced by CYP can be accurately assessed by AMH levels. It is suggested that AMH estimation should be incorporated in baseline investigations for accurate estimation of ovarian reserve

**Keywords:** antimullerian hormone, cyclophosphamide, ovarian reserve

## 5.8

### THE ART AND SCIENCE OF DIABETES SELF-MANAGEMENT EDUCATION (DSME): A CULTURE OUT OF BALANCE IN PAKISTAN

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**Background & Objectives:** Group-based diabetes self-management education (DSME) programmes have been shown to be effective. In spite of growing evidence of the value of DSME in reducing hospitalization costs, improvement in glucose, weight and medication adherence, DSME remains an underutilized insurance benefit and access to qualified diabetes educators is problematic (Tomky, et al., 2013).

**Purpose of Research Study:** The purpose of this study is to summarize the accumulated state of knowledge in the area of diabetes patient education research and highlight important issues that research has left unanswered.

**Methods:** An integrative literature review was conducted on the topic of diabetes patient education

between the years 2000 and 2014. Keywords used in the computerized search were diabetes mellitus, patient education, health education, research, and behavior change. The databases searched were MEDLINE, CINAHL, HealthSTAR, EMBASE, and CHID-HE. A total of 25 papers were reviewed. *Results:* Most studies lacked a theoretical framework and the majority of studies were conducted in an outpatient setting. HbA<sub>1c</sub> was the most frequently employed outcome measure, with little, if any, description of the interventions. Since diabetes is a complex condition reaching pandemic proportions, which requires self-management of the chronic disease on a daily basis, the future of DSME faces challenges in the current fee for service environment. The National Standards for Diabetes self-management education and support and the American Association of Diabetes Educators Practice Guidelines offers new concepts for meeting the future demand of diabetes educators and education. *Conclusion:* With the emphasis on patient-centered care, patients and care providers can consider options based on DSME intervention features for its broad and specific impact on outcomes to potentially make programming more effective. Much has been learned in terms of the effectiveness of diabetes education on improving knowledge. However, other topic areas and outcomes need further exploration.

*Keywords:* Diabetes, Health Education, Self-Management Programmes Research

## 5.9

### WHAT'S THE WORRY WITH DIABETES? A SYSTEMATIC REVIEW AND META-ANALYSIS OF DIABETES IN PAKISTAN

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*Background & Objectives:* Acceleration in rates of diabetes, especially type 2 diabetes in Pakistan is posing coercions to the economy and quality of life of people due to poor glycemic control and very high rates of complications. Cost of care is expected to be very high. Resource constraints society, lack

of medical reimbursement and insufficient allocation of health budget are obstructions to quality care. The distinctive combination of various risk factors compels research studies to make appropriate risk assessment tools to control this diabetes pandemic.

*Purpose of Research Study:* This review was conducted to study research evidence regarding particularities of diabetes in Pakistan and to recognize the cost effective, appropriate and publicly available preventive strategies required for controlling the diabetic pandemic.

*Methods:* An integrative literature review was conducted between the years 2000 and 2014. The databases searched were MEDLINE, CINAHL, HealthSTAR, EMBASE, and CHID-HE. Altogether 370 articles were screened out of which 22 articles met the inclusion and exclusion criteria.

*Results:* I. Epidemiology: Prevalence of diabetes is high ranging from 7.6 to 11% in Pakistan. Incidence of type 1 diabetes was estimated to be 1.02/100000 per year in Karachi, Pakistan. Rates of gestational diabetes in Pakistan range from 3.2% to 3.5%. II. Genetics: Role of genetics in predisposition of South Asians to diabetes has been identified and reported. III. Maternal Hyperglycemia: It has been observed that Pakistani infants who had low birth weight had advanced risk for metabolic disorders. IV. Gender: According to the national diabetes survey the prevalence of diabetes is higher in males as compared to females whereas in females prevalence of impaired glucose tolerance (IGT) is higher as compared to males. V. Age: Diabetes occurs at lower ages among Pakistanis as compared to the western countries. VI. Obesity: High rates of obesity among children and women and association of obesity with insulin levels and metabolic risk have also been identified. VIII. Malnutrition: Several evidences of associations between micronutrient deficiencies and risk for diabetes have been noted. IX. Depression: Depression is found to be significantly associated with newly diagnosed type 2 diabetics.

*Conclusion:* Diabetes has not yet achieved the due attention of health department of Government of Pakistan. A National Commission for Prevention of Cardiac & Non Communicable Diseases in work in progress by Federal Government of Pakistan. In



private sector Aga Khan University department of Diabetes and Endocrinology has devised educational training modules for people with diabetes which are organized weekly for diabetic self-education management. It is pivotal to report the burden of NCDs with public private partnership and volunteerism as its directorial principles..

**Keywords:** Diabetes, Epidemiology, Pakistan

### 5.10 PITUITARY TUBERCULOMA

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**Introduction:** Tuberculosis rarely involves the hypothalamo-pituitary region and constitutes only 1% of the lesions involving the sellar suprasellar region. Coleman and Meredith first reported pituitary tuberculosis in 1940, and only a handful of cases have been reported ever since. It may manifest as chiasmal syndrome due to compression of the optic chiasm or as hypopituitarism due to pituitary destruction. It has a characteristic radiological appearance and can mimic a pituitary adenoma. Diagnostic procedures such as transsphenoidal biopsy are crucial to accurate diagnosis.

**Case:** We report a case of a 34 year-old male, who presented with complaints of headache and decreased visual acuity for the past 6 months. Eye exam revealed bitemporal hemianopsia. Brain MRI scan showed a mass in the sella with features suggestive of pituitary adenoma. Transcranial resection of the mass was performed; histopathology of the excised mass proved it to be a pituitary tuberculoma. This is the first case of pituitary tuberculosis being reported in Pakistan.

**Conclusion:** The diagnosis of pituitary tuberculoma must be considered in patients presenting with symptoms and signs of increased intracranial pressure or/and hypopituitarism, particularly if there is a positive history of tuberculosis or tuberculosis contact.

**Keywords:** Tuberculosis, hypopituitarism, Pakistan

### 5.11 MABRY SYNDROME IN A CHILD OF SOUTH ASIAN DESCENT

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**Introduction:** Mabry syndrome is the triad of seizures, hyperphosphatasia and mental disability. It usually manifests in the first year of life and has an autosomal recessive mode of inheritance. Besides the usual triad, other manifestations of Mabry syndrome include hypoplasia of distal phalanges, brachytelecephaly, gastrointestinal malformations and constipation, hypertelorism, short nose with a broad nasal bridge and dip, thin upper lip with downturned corners of the mouth. More than twenty cases of Mabry Syndrome have been reported in medical literature.

**Case:** We report the case of a child that presented at 6 months of age with decreased neck holding, hypotonia and delayed motor milestones and was later diagnosed to have Mabry Syndrome. The child also had a high arched palate and hyperplastic malar eminences. Constipation was present but had a delayed onset, starting at 19 months of age. He was diagnosed to have Mabry syndrome. This is the first case of Mabry syndrome occurring in a child of South Asian descent.

**Conclusion:** In children with delayed development, epilepsy, dysmorphic features and hypoplastic terminal phalange, Alkaline phosphatase levels should always be checked in order to make a confirmatory diagnosis of Mabry syndrome. Mabry syndrome can also be present in children of South Asian descent.

**Keywords:** Mabry, seizures, hyperphosphataemia

### 5.12 STUDIES ON PROTECTIVE EFFECTS OF POL-4 AGAINST FRUCTOSE INDUCED DIABETES IN RATS

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*Introduction:* Amongst top five risk factors for cardiovascular deaths all over the world, diabetes mellitus is a major public concern. Its treatment requires life-long use of combination of different drugs which are associated with multiple side-effects in addition to patient non-compliance. This study was planned to evaluate the usefulness of an indigenous poly herbal formulation (POL-4) in the treatment of diabetes

*Material & Methods:* The plant materials (powder and extract) were used to carry out in-vivo and in-vitro assays using rats and their aortic preparations. For the assessment of acetylcholine-induced vasodilatation in isolated aortic rings, isometric transducers coupled with PowerLab data acquisition system were used.

*Result:* In oral glucose tolerance test, the crude extract of POL-4 (POL-4.Cr) showed antihyperglycemic effect at 30, 60, 90 and 120 min followed by glucose (2 g/kg) administration to rats, similar to the effect of glibenclamide (6 mg/kg). When tested against fructose (60 % in drinking water)-induced diabetes, treatment of POL-4 at 3% and 6 % in diet caused marked protection against hypertension, hyperglycemia and hyperlipidemia. A significant improvement in HbA1C with a positive effect on plasma insulin levels was also observed in treated groups compared to only fructose fed rats, similar to the effects found with metformin (300 mg/kg), a positive control. Amongst isolated rat aortic preparations, a reversal in the damaged endothelium in term of producing significant relaxation to acetylcholine (0.3  $\mu$ M) applied at phenylephrine (1  $\mu$ M)-induced contraction was seen in the tissue of animal group administered POL-4, similar to the effect seen in the tissue of metformin administered animals, however,

the animals taking fructose showed only damage to endothelium in aortic preparation.

*Conclusion:* This study showed the antidiabetic, antihypertensive and endothelial modulatory effects of POL-4, thus, providing an evidence to the folk use of POL-4 in diabetes..

*Keywords:* Polyherbal formulatio, Antidiabetic, Fructose-induced diabetes

### 5.13 DIAGNOSTIC CHARACTERISTICS AND MANAGEMENT OUTCOME IN PATIENTS WITH ACROMEGALY:

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*Background:* Acromegaly is due to excess Growth hormone (GH) production, usually as result of pituitary adenoma. The diagnosis is often preceded by around 5 years of active but unrecognized disease. Clinical expression of the disease in each patient depend on the levels of GH and Insulin-like Growth Factor-1 (IGF-1), age, tumor size, and the delay in diagnosis. Successful remission after Trans-sphenoidal surgery (TSS) is reported to be found in 52.5% of cases in the developed countries.

*Objectives:* This study was designed primarily for the evaluation of diagnostic characteristics of acromegaly and establishment of its management outcomes over a span of 10 years at a tertiary care hospital in Pakistan.

*Methods:* It was a Descriptive cohort study. Total 53 patients with biochemical and radiological diagnosis of Acromegaly were included in study between October, 2004 to September, 2014. Patients' medical record files were reviewed & data recorded.

*Results:* Of the 53 subjects, with mean age of 39.68  $\pm$ 14.35 years, 33 (62.3%) were male while 20 (37.7%) were female. The patients presented at a mean duration of 5.90  $\pm$  4.12 years after onset of symptoms. The most frequent complaint was somatic growth features in the form of enlarged hands & feet noted by 51 (96.2%) pts. Overall, 50

(94.3%) patients underwent TSS for removal of pituitary adenoma while 3 (5.7%) patients refused to opt surgical option. Only 3 (6%) patients achieved biochemical & radiological remission after 6 months of surgery. Among 47 patients with persistent disease after TSS, 26 (55.3%) were treated with radiosurgery/radiotherapy, 12 (25.5%) underwent repeat TSS and 9 (19.1%) opted for medical treatment, mostly with Cabergoline.

*Conclusion:* TSS is followed by the documentation of a high rate (94%) of failure to achieve remission and majority of patients have to opt radiotherapy/repeat TSS for the persistent disease. With the continuously improving surgical skills, we expect that the figures attaining remission after primary TSS will rise in the decades to come.

*Keywords:* Acromegaly, Demographics, Management Outcome

#### 5.14

##### MALIGNANT ECTOPIC THYROID TISSUE WITH DISTANT METASTASIS-A CASE REPORT

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*Background:* Ectopic Thyroid Tissue is the most common form of thyroid dysgenesis. But primary malignant transformation in ectopic thyroid tissue is quite a rare entity, with follicular malignancy being the dominant form at ectopic sites. Very infrequently, malignant ectopic thyroid tissue can present with metastasis to lymph nodes. But we report a case of malignant ectopic thyroid tissue over manubrium sterni with distant metastasis.

*Case Presentation:* A 42-year-old Pakistani female presented to us in Endocrine clinic with gradually increasing swelling on anterior aspect of manubrium sterni for last 6 months. She had no goitre & was clinically and biochemically euthyroid. Rest of systemic exam was also unremarkable. CT chest showed a circumscribed

soft tissue density mass arising from sternum, measuring 3.9 x 3.9cm, causing erosions of anterior, right lateral & posterior walls of sternum. Trucut biopsy of the sternal mass proved it to be thyroid tissue with follicular differentiation and occasional mitotic figures. Multiple nodules were also noted in Thyroid gland in US Neck. She underwent total Thyroidectomy & excision of ectopic thyroid tissue over manubrium sterni. Extensive histopathological examination of primary thyroid gland showed benign nodular hyperplasia with no evidence of malignancy. Ectopic thyroid tissue showed minimally invasive follicular thyroid carcinoma with tumor size of 3.2 x 2.3cm. Her postoperative 21-day biochemical profile showed TSH 22.345  $\mu$ IU/ml (0.4 to 4.2), Serum Thyroglobulin 88.3ng/ml, Anti-TG antibodies

*Keywords:* Ectopic Thyroid, Malignant, Distant Metastasis

#### 5.15

##### CLINICAL PROFILE AND TREATMENT OUTCOME IN CUSHING SYNDROME

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*Background:* Cushing's Syndrome (CS) results from chronic exposure of body to excessive production of glucocorticoids. Etiology of CS may lie in the adrenal gland, pituitary gland (Cushing Disease, CD), exogenous glucocorticoid administration or ectopic ACTH production by certain malignancies. Surgical excision of culprit lesion is the most effective procedure for the treatment of CS. To the best of our knowledge, this important endocrinal entity of CS had never been researched in Pakistan.

*Objectives:* This study was designed primarily for the establishment of the prevalence of different etiologies of Cushing Syndrome other than iatrogenic hypercortisolism, evaluation of the clinical, biochemical and treatment profile of patients with CS.

**Methods:** It was a Descriptive cohort study. Total 44 patients with biochemical and radiological diagnosis of Hypercortisolism were included in study between October, 2004 to September, 2014. Patients with history of intake of Glucocorticoids were excluded. Patients' medical record files were reviewed & data was recorded.

**Results:** Of the 44 subjects, with mean age of  $34.86 \pm 14.64$  years, 29 (66%) were female while 15 (34%) were male. The mean duration of presentation was found to be  $2.19 \pm 2.05$  years after onset of symptoms. Weight gain was the most common presenting complaint. Pituitary lesion was the culprit source in 33 (75%) cases, ectopic ACTH source in 7 (16%) cases and adrenal lesion in only 4 (9%) cases. Among the 33 patients with Cushing's Disease, 32 (97%) underwent TSS and 17 (53.1%) attained remission. Among the 7 patients with Ectopic ACTH source, 6 (86%) underwent surgical excision and 3 (50%) attained remission. Out of the 4 patients with Adrenal source, 3(75%) underwent uni/bilateral adrenalectomy and all (100%) attained remission.

**Conclusion:** Pituitary lesion is the most common source of endogenous hypercortisolism. TSS is followed by a relatively low remission rate of 53.1% as compared to the developed world. This figure is expected to rise in the years to come with the improved surgical techniques and expertise

**Keywords:** Cushing, Clinical profile, Treatment Outcome

## 5.16 EXPRESSION OF REG1A GENE IN TYPE I & 2 DIABETICS IN PAKISTANI SUBJECTS

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**Introduction:** The  $\beta$  cell mass of an adult normal pancreas is in a constant process of death and renewal. Reg proteins are released from damaged  $\beta$  cells and play a role in their regeneration.

**Objective:** Our objective was to characterize serum levels of Reg1 $\alpha$  proteins in both type 1 and type 2 diabetes patients as biomarkers of  $\beta$  -cell apoptosis and regeneration.

**Method:** Unrelated diabetic patients (n = 61) and non-diabetic controls (n = 19) were recruited from the Medical OPD of PNS Shia Hospital Karachi. Serum levels of Reg1 $\alpha$  protein were determined by ELISA in following three groups: 1) Type 1 diabetic subjects (n = 10) with different age groups and disease duration, 2) Type 2 diabetic subjects (n = 51), and 3) age and gender matched control subjects (n = 19) were compared.

**Results:** Levels of Reg1 $\alpha$  protein were found raised in type 1 and 2 diabetes patients compared to controls (p <001). But with the increase of duration of disease from 5 to 25 years and age (> 50 years) levels of Reg1 $\alpha$  started decreasing. However, they remained significantly higher than the controls especially in type 2 diabetics. Since the patients were on anti-hyperglycemic agents, no significant correlation was found between Reg1 $\alpha$  serum levels, FBG and HbA1c levels. Similarly serum cholesterol, serum triglycerides and hemoglobin levels in both type 1 and type 2 diabetics showed no correlation.

**Conclusion:** Reg1  $\alpha$  proteins in both type 1 and type 2 diabetes patients can be used as biomarkers of  $\beta$  cell apoptosis and regeneration independent of other variables.

**Key words:** Type 1 and 2 diabetes, B cell regeneration, Reg. 1 $\alpha$

### 5.17

TCF7L2 SNP RS12255372 IS STRONGLY ASSOCIATED WITH DIABETES TYPE II IN PAKISTAN POPULATION.

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**Introduction:** Transcription factor 7-like 2 (TCF7L2) is one of the most susceptible genes for the occurrence of type-2 diabetes (T2D). A common SNP rs12255372 of TCF7L2 is associated with T2D in Europeans however; it showed inconsistent association in previously reported South Asians. Our aim was to investigate the association between TCF7L2 polymorphism rs12255372 (G/T) with T2D in Pakistani population.

**Method:** Subjects were recruited from Karachi and Lahore based population (n=1750), consisted of diabetic cases (n=800) and controls (n=950). DNA was extracted and T-ARMS PCR was performed for genotyping and the collected data was statistically analyzed in SPSS version 20.

**Results:** Genotype frequencies analysis was 21.8%, 60.3% and 17.9% and 13.2%, 71.4% and 15.4% for GG, GT and TT in cases and controls, respectively. All subjects fall in HWE. Binary logistic regression analysis showed that in cases, GT genotype is significantly associated with T2D (95% OR=2.1; 1.02-4.2, p=0.04), age group (40-70, OR: 1.52; 0.78-2.93), Obese BMI (>25kg/m<sup>2</sup> OR: 1.26; 0.52-3.06) and female gender (OR: 1.77; 0.95-3.32). Frequency of G and T allele in total population was 17.3% and 82.7%. ( $X^2=254$ ,  $P=3.96E^{-57}$ ). It was significant in both genders. The minor T allele was found significantly associated with T2D ( $X^2=15.58$ ,  $p=8.30E^{-5}$ ). We observed a strong relationship of age 20-70 years ( $\beta=0.432$ ), female gender ( $\beta=-0.745$ ) and BMI ( $\geq 25\text{kg/m}^2$ ;  $\beta=0.73$ ) in diabetic cases per single allele.

**Conclusion:** Presence of one copy of T allele increase the 2.9 folds higher risk for developing diabetes and two copies of T allele showed 16.5

fold higher risk of diabetes in females in adjusted analysis.

**Key words:** Diabetes type 11, Genetics, Association studies, TCF7L2

### 5.18

EPIGENETIC MODIFICATIONS ASSOCIATED WITH GESTATIONAL DIABETES MELLITUS AND INTRAUTERINE GROWTH RETARDATION

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**Introduction:** Epigenetic modifications are the environmental and/or inherited changes in genetic structure without alterations of the DNA sequences. Epigenetic changes such as methylation, histone modification, acetylation, ubiquitination determine the regulation of genes by switching “on” and “off” the related operons. The outcome of the resulted expression may lead to metabolic chronic disorders along with Gestational Diabetes and Intrauterine Growth Retardation. We hypothesize that the pathogenesis of Gestational Diabetes Mellitus (GDM) and Intra-Uterine Growth Retardation (IUGR) is highly dependent on mutations along with epigenetic modifications.

**Method:** We used PubMed, Google Scholar and available library resources such as books, reports etc., for searching epigenetic status consisted of methyl modifications related to GDM and IUGR. The split search terms which mainly included “epigenetic modification” AND “GDM”, “epigenetic modification” AND “IUGR” were used. Further gene symbols were used whenever required. The articles consulted were from the years 1990 to 2014.

**Results:** for Gestational Diabetes Mellitus revealed 18 articles, shortlisted to 8 by inclusion criteria. These studies proposed 14 genes involved in the interplay of the pathogenesis but only 5 showed promising results when compared with controls.

For Intra-uterine Growth Retardation out of the 38 articles 4 articles specifically matched the criteria. Proposed genes (n=8) spanning across 6 chromosomes showed variable association. Epigenetic changes found in H19, MEG3, LIT1, MEST, NESPAS, PEG3, and SNRPN genes were dominantly associated with these disorders.

There was not enough evidence available at present to make definitive claims on the hypothesis.

*Conclusion:* Conclusively this review calls in for more cohort studies to be executed for a better and definitive grasp of the connotation

*Key words:* Epigenetic modifications, GDM, IUGR

### 5.19

#### ACTIVE NUTRITIONAL INTERVENTION FOR REDUCING METABOLIC SYNDROME: A SYSTEMATIC REVIEW

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*Introduction:* Metabolic syndrome is a cluster of risk factors including abdominal obesity, hypertension, and dyslipidemia and insulin resistance. Its rising prevalence is fast becoming a global concern. Sedentary life style and Westernized dietary habits are more common globally among all causation factors. Nutritional interventions such as Mediterranean diet and diet high in omega-3 fats and fiber are significant in reducing metabolic syndrome risk.

*Aim:* The aim of this report is to provide an updated systematic review of various dietary patterns effective in reducing metabolic syndrome in global population.

*Method:* A computer assisted literature search was used to find nutritional intervention studies, conducted for reducing metabolic syndrome, in the last 10 years. The databases used were PubMed, Google Scholar. Different combinations of keywords were employed to collect a variety of relevant articles and information.

*Results:* 6 studies were shortlisted to be analyzed and showed how different nutrients interact with

metabolic risk factors. Subjects following a Mediterranean dietary pattern in a 6-year prospective study showed much lower metabolic syndrome incidence. A meta-analysis showed that low-carbohydrate diets are as beneficial in reducing weight and thus decreasing components of metabolic syndrome as compared to low-fat diets. Diets high in omega-3 fatty acids and low in saturated fats are inversely associated with metabolic syndrome incidence. Further high-fiber foods as well as nuts are associated with decreased metabolic syndrome risk factors.

*Conclusion:* While different dietary patterns are beneficial in reducing metabolic syndrome, Mediterranean diet is the most important one as it consists of a healthy, non-calorie restricted, balanced diet that combines individual elements such as high fiber, omega -3 fats and nuts with a stress-free lifestyle.

*Key words:* Metabolic syndrome, Dietary pattern, Nutritional intervention,

### 5.20

#### ISOLATED LIGAMENTUM FLAVUM CALCIFICATION: AN UNCOMMON PRESENTATION OF PRIMARY HYPOPARATHYROIDISM

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Ossification of paravertebral region and peripheral spinal ligaments is a rare disease that causes serious neurological manifestations. It can happen as an unusual complication of hypoparathyroidism. During our literature review, we found five reports of ligamentous ossification in association with hypoparathyroidism (Biuscher,1948; Salvesen and Boe, 1953; Gibberd, 1965;Chaykin, Frame and Sigler, 1969; and Adam and Davies, 1977). We are reporting the first case of hypoparathyroidism that presents with isolated ligamentum flavum ossification causing myelopathy. It is interesting

because it's a first report of its kind from this region and the reported case has cervical myelopathy in addition to thoracic myelopathy, which is very rare in ligamentous ossification patients. Our patient was a 43 year old male with no known co morbid who developed backache, lower limb weakness and urinary retention a week after a fall. There was no history of loss of consciousness, seizures or urinary incontinence. Past medical and family history was insignificant. On examination, power in both lower limbs was decreased, with increased tone, exaggerated reflexes and bilateral up going planters. Based on history and examination findings, a diagnosis of spastic paraplegia due to spinal cord compression was made. MRI of the spine showed spinal stenosis and cord compression at different levels (C4-5 and T10-11). On laboratory investigations, serum calcium was 5(corrected), magnesium 0.9 (1.6-2.6), phosphorus 7.7(2.5-4.5) and parathyroide hormone <3.0 pg/ml(16-87). A diagnosis of primary hypoparathyroidism was made.

**Keywords:** Ligamentum flavum ossification, Hypoparathyroidism

## 5.21 DEMOGRAPHIC CHARACTERISTICS, PRESENTATIONS & TREATMENT OUTCOME OF PATIENTS WITH PROLACTINOMA IN A TERTIARY CARE HOSPITAL

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**Objectives:** Our primary objectives included the determination of demographic details of patients with prolactinomas, to identify the signs and symptoms commonly experienced by these patients as well as to know the effectiveness of the treatment modality they received. Secondly we aimed to compare the outcomes in patients treated with Cabergoline versus those under Bromocriptine prescription.

**Methods:** We conducted a retrospective cohort study at Aga Khan University Hospital from July 2013 to December 2013 using records of 68 patients who met the inclusion criteria. Medical record files were reviewed to obtain the primary outcomes which were demographic characteristics, clinical presentation and treatment received by these patients. These were documented on a pre-designed proforma.

**Results:** Out of the 68 included patients, 25 (36.8%) were males and 43 (63.2%) were females, confirming the higher occurrence of the disease in females. As for other demographic results, mean age in years of patients was found to be 34 and 53 (77.9%) patients belonged to the ethnic group 'Urdu speaking' while smaller proportions in remainder ethnicities. The most frequent complain amongst the patients was of headache, present in 39 (57.4%) patients. Galactorrhea, amenorrhea and infertility were next highest reported symptoms. Measurements of biochemical markers in these patients, in the initial visit (before treatment) and in the follow up visits revealed a decreasing trend in serum prolactin level. Medical treatment was most popular received by 66 (97.1%) patients. 15 (22.1%) patients were treated surgically and only 1 (1.5%) patient required radiation therapy.

**Conclusion:** Females, 'urdu speaking' ethnic community and mean age of 34 years were characteristics of prolactinoma patients in the study. All common symptoms were experienced by the study patients most frequent being headache. Also noted was the decreasing trend of serum prolactin and tumor size reduction in patients suggesting the beneficial impact of medical therapy as it was the most popular treatment modality used. There is need to further assess these aspects. Future studies can play a role to get a better idea of treatment outcomes and how the drugs bromocriptine and cabergoline compare.

**Keywords:** Prolactinoma, Galactorrhea, Cabergoline

## 5.22

### CENTRAL ADIPOSITY IS SIGNIFICANTLY HIGHER IN FEMALE COMPARED TO MALE IN PAKISTANI TYPE 2 DIABETES MELLITUS PATIENTS

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**Background:** Type 2 diabetes mellitus (DM) rates are increasing rapidly in South Asians. Cardiovascular complications are more frequent and occur earlier in our patients than patients in many other ethnic groups. Reasons for this are not fully understood.

**Aims:** The aim of this study is to evaluate the body total and central fat percentage in type 2 Diabetes Mellitus patients and to check correlation with BMI, waist circumference and metabolic profile.

**Settings and Design:** A cross-sectional study conducted at endocrine clinic, Aga Khan University Hospital Karachi, Pakistan, from May to December 2012.

**Materials and Methods:** Patients of either gender with type 2 diabetes mellitus were randomly selected. A separate proforma for each patient was recorded for demographics, risk factors, bioelectrical impedance measurement for body fat and investigations. Statistical analysis: Correlation between body fat and other covariate were compared by Pearson correlation coefficient test. A p value <0.05 was considered significant. SPSS19.0 was used to analyze the data.

**Results:** One hundred and seventy five patients (95 male and 80 female) with mean age of  $54.1 \pm 12$  years were evaluated. Mean duration of diabetes was 8.1 years, mean HbA1c was 8.1% and 53.7% were on oral agents and rest were on insulin with or without oral agents. Hypertension was present in 65.7%, 13.7% had known coronary artery disease and 2.3% had cerebrovascular disease. Mean BMI in males was  $29.1 \pm 4.74$  kg/m<sup>2</sup> and females  $31.7 \pm 5.3$  kg/m<sup>2</sup>. Mean waist circumference in males was  $107.3 \pm 16.6$  cm and  $103 \pm 12$  cm in females. Total body fat percentage (%BF) in males was  $30.9 \pm$

7.1% and females  $40 \pm 8.2\%$  with 89% of the total cohort having total body fat percentage above the normal, less than 25% central fat percentage was  $13.3 \pm 5.2\%$  in males and  $14.6 \pm 5.5\%$  in females with 79.4% of cohort having increased central fat (normal <9%). Total and central body fat correlated with BMI ( $r = 0.68$ ,  $P < 0.001$ ) and waist circumference ( $r = 0.66$ ,  $p < 0.001$ ) but not with HbA1c, triglyceride level or with fasting or random blood glucose levels. Women had significantly higher total body fat percentage compared to men ( $P < 0.001$ ) although central fat percentage was similar in both sexes.

**Conclusions:** High body fat percentage, waist circumference are seen especially in woman and central body fat percentage in both sexes among patients with type 2 diabetes mellitus in Pakistan. Body fat percentage should be measured and followed as this may be an important contributing factor to the high macrovascular complication rate in this part of world.

**Keywords:** Bio-impedance analysis, body fat, type 2 diabetes mellitus

## 5.23

### PSIS (PITUITARY STALK INTERRUPTION SYNDROME) ASSOCIATED WITH PATENT FORAMEN OVALE: A RARE DISEASE WITH A RARE ASSOCIATION.

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**Introduction:** Pituitary stalk interruption syndrome (PSIS) is a rare congenital abnormality of the pituitary that is responsible for anterior pituitary deficiency. It is characterized by a classic triad of interrupted pituitary stalk, absent or ectopic posterior pituitary, and anterior pituitary hypoplasia or aplasia. Clinical presentation varies according to age. In adults it presents as short stature and anterior pituitary deficiency. Without early diagnosis and treatment, mortality and morbidity in these patients is high. Moreover, early diagnosis of this rare disease might lead to early treatment which can



prevent permanent short stature of the patient. Here we report first case of PSIS (pituitary stalk interruption syndrome) with associated patent foramen ovale (PFO) from Pakistan.

*Case presentation:* Our patient is a 17 years old Pakistani male, had been operated for patent foramen ovale (PFO) five years back, presented with short stature and underdeveloped secondary sexual characters. His siblings and parents were healthy with normal height. On examination blood pressure was 90/60 mm Hg, height was 142 cm, weight 34.5 kg, and BMI was 17.10 kg/m<sup>2</sup>. He has no hair growth at face, axilla and pubis. Both testes were 1-2 cm in size. Penis was small in size. His lab investigations showed TSH 8.58 uIU/ml (0.4-4.2), free T4 0.46 ng/dl (0.89-1.76), prolactin 21.1 ng/ml (3.0-14.7), baseline cortisol 0.30 ug/dl (4.3-22.4), cortisol after 60 min of cosyntropin injection was 3.5 ug/dl (4.3-22.4), IGF 1 31.56 ng/ml (247.3-481.7), testosterone <2.5 ng/dl (2-800), FSH 0.41 uIU/ml (0.0-10.0) and LH <0.1 (1.2-7.8) uIU/ml. Bone age was 10 years as shown by x-rays. MRI pituitary findings were consisting with PSIS.

*Conclusion:* We described a young male who presented with short stature and ultimately found to have PSIS with associated PFO. Due to bone age of ten years he has an excellent opportunity to regain his height by therapy with growth hormone. PSIS, though rare, should be kept in mind whenever a patient presents with short stature. Cardiac anomalies are rare but important association of PSIS.

*Keywords:* PSIS, short stature, pan hypopituitarism

## 5.24

### PREABLATION STIMULATED THYROGLOBULIN/ TSH RATIO AS A PREDICTOR OF SUCCESSFUL I131REMNANT ABLATION IN PATIENTS WITH DIFFERENTIATED THYROID CANCER FOLLOWING TOTAL THYROIDECTOMY

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*Background:* Thyroid cancer is the most common endocrine cancer. About 90% of these are differentiated thyroid cancers (DTC). Treatment options are total thyroidectomy followed by radioactive I131remnant ablation (RRA) and thyroid stimulating hormone (TSH) suppression with thyroxine. Unsuccessful ablation drastically affects the prognosis of patients with DTC particularly high risk individuals, therefore identifying the factors that affect the success of ablation is important in the management of patients with DTC. Stimulated thyroglobulin (sTg) is a good predictor of successful ablation in DTC. Its levels can be influenced by tumor staging and TSH values, as well as other factors. Therefore we did this study using TSH to correct the predictive value of sTg in success of RRA. Our objective was to ascertain whether sTg/TSH ratio can be used as a good predictor of successful RRA and to compare its predictability with sTg.

*Methods:* We retrospectively reviewed the records of 75 patients with DTC, who underwent total thyroidectomy followed by RRA and TSH suppression. We assessed preablentionsTg, preablation sTg/TSH ratio, age, gender, histopathology, capsular invasion, tumor size, nodal involvement, distant metastasis, TNM staging, I131 ablative dose and ETA risk as predictors of successful RRA.

*Results:* Preablation sTg and sTg/TSH ratio are significantly associated with ablation outcome. Cutoff value for sTg to predict successful and unsuccessful ablation was 18ng/mL with 76.7% sensitivity and 79.1% specificity while for sTg/TSH

cutoff was 0.35 with 81.4% sensitivity and 81.5% specificity ( $P < 0.001$ ). Association was stronger for sTg/TSH ratio with adjusted odd's ratio (AOR) 11.64 (2.43-55.61) than for sTg with AOR 5.42 (1.18-24.88).

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

**Keywords:** Differentiated thyroid cancer; thyroglobulin; thyroidectomy; remnant ablation

## 5.25

### AUTOIMMUNE HYPOTHYROIDISM CONVERTED TO HYPERTHYROIDISM: IS IT A COMMON PHENOMENON?

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**Background:** Graves' disease and Hashimoto's thyroiditis are the two autoimmune spectrum of thyroid disease. Cases of conversion from hyperthyroidism to hypothyroidism have been reported but conversion from hypothyroidism to hyperthyroidism is very rare. Although such cases have been reported in the past but it was thought to be rare but now we are seeing frequent presentations of these cases.

**Cases:** We are reporting three cases of middle aged Asian females who were presented with classical symptoms of hypothyroidism and the investigations showed elevated thyroid stimulating hormone with positive thyroid antibodies. Diagnosis of autoimmune hypothyroidism was made and thyroxine replacement therapy was started. Patients become asymptomatic with normalization of thyroid stimulating hormone level. After few years they develop symptoms of hyperthyroidism with suppressed thyroid stimulating hormone level. Over replacement of thyroxine was considered and the dose of thyroxine was decreased, but they remain

symptomatic and after gradual decrease in the dose of thyroxine it was stopped finally. Even after thyroxine has been stopped for few months, the symptoms of hyperthyroidism did not improve and the biochemical and imaging modalities confirmed that the patients have developed hyperthyroidism. Anti-thyroid treatment has been started and the patients became symptom free.

**Conclusion:** High index of suspicion should be there if a patient with primary hypothyroidism develops persistent symptoms of hyperthyroidism. Otherwise it can be missed easily considering it as an over replacement with thyroid hormone.

**Keywords:** Hypothyroidism, Hyperthyroidism, over-replacement, Conversion

## 5.26

### 17 ALPHA HYDROXYLASE DEFICIENCY: A RARE CAUSE OF HYPERTENSION IN A YOUNG FEMALE

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**Case:** We report the case of a 22 years old female who presented with primary amenorrhea and new onset hypertension for a duration of 4 months. The patient was born to non consanguous marriage. There was no family history of hypertension or any other significant illness. Patient had a normal stature and BMI. BP in right and left arm was 170/110 mm of Hg. She did not have any features of Turner's syndrome. There was no radioradial or radiofemoral delay. Breasts and axillary and pubic hair were tanner stage II. She had normal female genitalia. Lab Investigations revealed hypokalemia with potassium level of 2.2 and a Sodium level of 147, normal renal and thyroid functions. 8.00 am cortisol was 0.8 (normal range of 4.3 -22.4) Renin was 2.3 uIU/ml ( 2.8-39.9). Aldosterone: 28.23 ng/dl. US pelvis showed small sized uterus and small ovaries without any follicles. DHEAS levels was <15; 17-OHP: 0.659; Testosterone: <2.5; FAI: 0.117; LH: 47.90; FSH: 77.71; Estradiol: 22.1 ; ACTH level was >1250 pg/ml. Her Karyotype analysis revealed

46 XX karyotype. So based on history of pubertal delay, hypertension and a low potassium and cortisol level with high ACTH and FSH, a diagnosis of 17 alpha hydroxylase deficiency was made and patient was started on steroid replacement, antihypertensives and potassium supplements.

*Conclusion:* 17 Alpha Hydroxylase deficiency is a very rare form of Congenital Adrenal Hyperplasia and only about 130 individuals with severe, confirmed 17-hydroxylase deficiency have been documented. To our knowledge there has been no such previous case reported in Pakistan.

*Keywords:* 17 Alpha hydroxylase deficiency, hypokalemia, congenital adrenal hyperplasia

### 5.27

#### PROGNOSIS AND OUTCOME ANALYSIS OF THYROID CANCER: EXPERIENCE FROM A TERTIARY CARE CENTRE IN PAKISTAN

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*Material and Methods:* Retrospective review of patients with thyroid cancer at our hospital from 1999 to 2011 was done.

*Results:* Mean age at presentation was 44±17 years with female to male ratio of 2.1:1. Patients were followed for mean of 6.45 and median of 6 years. Out of 206 patients, 158 had differentiated thyroid carcinoma. Most common variant was papillary (n=130, 63.10%) followed by follicular carcinoma (n=22, 8.73%). 6 (2.91%) had hurthle cell variant of follicular carcinoma. 18 (8.73%) had medullary and 10 (4.85%) had anaplastic carcinoma. 20 (9.70%) patients had other causes like carcinoma of undetermined significance, metastatic carcinoma and lymphoma.

Patients having DTC, 70(44.3%) were diagnosed at stage 1, 17 (10.8%) at stage 2, 12 (7.6%) at stage 3 and 29 (18.3%) have stage 4 disease. 2 (14.3%) patients with medullary carcinoma were diagnosed at stage 1, 4 (28.6%) at stage 3 and 8 (57.1%) were at stage 4. All patients with anaplastic carcinoma

had stage 4 disease. Overall cure rate was 33.5%, persistence rate 26.6%, recurrence was 8.2% and thyroid cancer related mortality was 8.9%.

By univariate analysis age, cancer types, distant metastasis, type of surgery and thyroglobulin levels were significant prognostic factors. By multivariate analysis age  $\geq 45$  years ( $p=0.04$ ), distant metastasis at the time of presentation ( $p=0.04$ ), thyroglobulin levels  $\geq 8$  right after surgery ( $p<0.001$ ) were found to be independent prognostic factors. Furthermore, other factors like gender and thyroglobulin doubling time did not show any association with the prognosis of thyroid carcinoma.

*Conclusion:* The current study demonstrated an assessment of prognostic factors in this cohort. Age at diagnosis, distant metastasis and thyroglobulin levels were found to be strong prognostic factors for thyroid carcinoma.

*Keywords:* thyroid carcinoma, stage, outcome

### 5.28

#### PREVALENCE OF OVERWEIGHT AND OBESITY IN PAKISTANI POPULATION

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*Introduction:* Pakistan in comparison with more developed countries is witnessing triple burden of diseases with communicable diseases, malnutrition associated with underdevelopment and NCDs resulting from rapid epidemiological transition causing significant morbidity & mortality. On the basis of morbidity data, limits of BMI are narrower for Asian mostly from South East Asia and Indian subcontinent than Caucasians because of the relative excess of adipose tissue and absence of lean body mass in Asians than whites of the same sex, age and BMI. Because of the increasing prevalence of overweight & obesity worldwide, we sought to determine the current prevalence of overweight, obesity & abdominal adiposity based on Asian specific BMI cut off & anthropometric parameters in Karachi, Pakistan.

**Methods:** This study is a part of life style intervention trial for the prevention of type 2 diabetes funded by International Diabetes Federation (IDF) under the guidance of University of Helsinki. Before the intervention, baseline data was collected from the two main towns of Karachi, largest city of Pakistan with an estimated population of more than 18 million.

**Results:** Of the 13969 participants, 3972 (28.4%) were males and 9997 (71.6%) were females. The mean age of the participants was  $39.5 \pm 9.4$  years. The mean BMI & waist circumference was  $26 \pm 5.3$  &  $92.1 \pm 11.9$  respectively. The overall prevalence of increased risk individuals based on BMI of 23 to  $<27.5$  was 35.2 % (95% CI 34.4-35.9). The prevalence of high risk population with BMI of  $\geq 27.5$  was 33.1% (95% CI 32.3-33.9). The majority of overweight & obese individuals had BMI between 23- 27.5kg/m<sup>2</sup>. Female participants had higher BMI in comparison to male population ( $p < 0.001$ ). The overweight & obesity based on BMI was more prevalent between the age group of 35-54 years among both genders.

The factors independently and significantly associated with overweight & obesity on the basis of BMI included increasing age from 35- 54 years (OR= 2.19, 95% CI 1.96-2.44) and being female (OR= 1.22, 95% CI 1.13-1.32) after adjusting it with physical activity.

The prevalence of central obesity on the basis of anthropometric parameters was 73.6 (95% CI=72.9-74.3). The prevalence of abdominal adiposity was higher among age group 35 to 64 years age group. Female gender was found to be significantly associated with high abdominal adiposity (OR= 3.08, CI=2.84-3.34). 48.6% of the individuals with raised central fat distribution were found to have normal BMI ( $p < 0.001$ ).

The prevalence of overweight & obesity on the basis of both BMI & waist circumference was higher in population residing in parks starved areas in comparison to the participants living in areas with easy accessibility to parks ( $p < 0.001$ ).

**Conclusion:** The high prevalence of overweight & obesity in this population mandates population based strategies for the prevention of obesity and related complications.

## 5.29 MUSCLE PARALYSIS IN THYROTOXICOSIS- A CASE REPORT

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**Introduction:** Thyrotoxic periodic paralysis (TPP) is a condition characterized by muscle paralysis due to hypokalemia usually secondary to thyrotoxicosis. Potassium supplementation and nonselective beta-blockade can help reverting muscle symptoms and prevent cardiac arrhythmias. It can easily be misdiagnosed because of its rare prevalence if proper clinical correlation is not made.

**Case report:** 31 year old male with no known comorbidities came to tertiary health care set up with complaint of difficulty in breathing, palpitations, weight loss and hoarseness of voice for last one month. On examination thyroid gland was palpable and fine tremors in hands were present. Initial provisional diagnosis of Hyperthyroidism was made. Carbimazole 30mg per day was started along with propranolol 10mg three times daily. 3 months after initial presentation, patient presented in ER with complaint of severe muscle pain and inability to stand. Lab results revealed hypokalemia. All the symptoms reverted back on administration of IV potassium in next few hours. Diagnosis of Thyrotoxic periodic paralysis was established.

**Discussion:** TPP usually affects young males of Asian origin. Incidence of TPP in thyrotoxic patients of China and Japan is 1.8% and 1.9% respectively. Genetic mutations in Human leukocyte antigen (HLA) haplotypes DRw8 and A2BW22 are found to be associated with Japanese and Chinese Population respectively. Dysfunction of Na/K-ATPase pump causes hypokalemia and is thought to be responsible for the muscle symptoms in TPP. Attack usually first effect lower limbs and then ascends. However it resolves in opposite manner. Most commonly attack is triggered by a carbohydrate rich meal or while resting after exercise. After initial presentation patient was treated with Carbimazole and propranolol. Once euthyroid, RAI-131 ablation therapy (15 mci) was done as definitive therapy after patient's agreement.

After ablation therapy patient is doing fine on levothyroxine replacement and there is no history of recurrence of muscle paralysis.

### 5.30

#### TUMOR INDUCED OSTEOMALACIA: A CASE REPORT

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*Department of Medicine*

Tumor-induced osteomalacia (TIO), is a rare Paraneoplastic syndrome usually presents with bone pain, recurrent fractures of long bones and muscle weakness generally in adults(). It is caused by high blood levels of fibroblast growth factor 23(FGF-23) which is a hormone regulating phosphate and vitamin D. FGF-23 is secreted by several tumors, especially benign mesenchymal tumors which are typically very small and difficult to locate.

*Case Presentation:* A 35 year man married, 2 kids, nonsmoker presented with Lower limbs weakness, difficulty in walking and generalized body ache for 10 years. He developed weakness gradually, since 4 years he became wheel chair bound. His bowel and bladder functions are normal. Family history is non-significant for such illness. On examination he has proximal myopathy with intact sensations. Laboratory reports revealed. Serum Calcium level 9.9 mg/dl (normal, 8.6-10.2 mg/dl) , Serum Phosphate level 1.1 mg/dl, Repeat level 1.2 mg/dl (normal, 2.5-4.5 mg/dl), Alkaline phosphate level 511 IU/L (normal, 45-129 IU/L) , Serum Albumin level 4.6g/dl (normal, 3.5-5.2 g/dl) , Parathyroid hormone level 227 pg/ml (normal, 16-87pg/ml) , Creatinine Phosphokinase level 56 IU/L ( normal, 46-171 IU/L) , Serum magnesium level 2.3 mg/dl (normal 1.6-2.6 mg/dl), Serum Sodium 141 mEq/L , Potassium 3.7 mEq/L, Chloride 105 mEq/L, Bicarbonate 24 mEq/L, serum creatinine 0.8 mg/dl (normal, 0.8-1.1 mg/dl) , Uric acid 6.4 mg/dl (normal, 3.5-7.2 mg/dl) , Urine for amino acids – Negative, Spot urinary creatinine 140 mg/dl, Spot urinary phosphate 126 mg/dl (normal, ), Fractional excretion of phosphate (FePo4) – 66% ( normal, 5-20%), Fibroblast

growth Factor 23 level - 846.9 RU/ml ( normal, < 52 RU/ml), TSH 0.7 uIU/ml (normal, 0.4-4.2), B12 536 pg/ml (normal, >200 pg/ml). Whole body MRI revealed bilateral femoral neck fractures, multiple looser zones seen in the ribs, proximal bilateral femurs medially and an old fracture of right fibula. Octreotide Scan and, MRI Left Knee showed irregular abnormal intensity lesion anterior to the lower end of femoral condyle in the intercondylar notch just below the level of patella, most likely represent mesenchymal tumour.

*Conclusion:* Patient with hypophosphatemic osteomalacia should be investigated for neoplastic lesion.

*Keywords:* Osteomalacia, Tumor, Hypophosphatemia

### 5.31

#### PREVALENCE OF GLUCOSE INTOLERANCE IN HIGH RISK POPULATION OF KARACHI, PAKISTAN

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*Background:* Increase in the prevalence of diabetes in Pakistan is posing threats to economy due to very high risk of complications. According to different studies held in Pakistan the prevalence was high in urban areas as compared to the rural areas, which is due to the lifestyle changes in population residing in urban areas having high BMI, WHR, reduced physical activity and unhealthy eating habits.

This study was conducted to identify prevalence of glucose intolerance in high risk urban population of Karachi, Pakistan based on diabetes risk score.

*Methods:* This study is a part of life style intervention trial for the prevention of type 2 diabetes funded by International Diabetes Federation (IDF) under the guidance of University of Helsinki. Before the intervention, baseline data was collected from the two main towns of Karachi, largest city of Pakistan with an estimated population of more than 18 million. People with high risk

estimated on the basis of risk scoring system were assessed with the help of oral glucose tolerance test for the presence of diabetes or impaired glucose intolerance. People with known history of diabetes were excluded.

**Results:** The sample included 2927 individuals, 2105 (71%) were females. The mean age of the participants was  $43.1 \pm 8.9$ . The prevalence of pre diabetes & diabetes was 36.2% (95% CI 34.5-38.0) & 14% (95% CI 12.8-15.3) respectively. The prevalence of overall abnormal glucose intolerance (diabetes + IGT) was 50.2%. The prevalence was higher in female population than male ( $p < 0.001$ ). Age, BMI, waist circumference in both genders was found to be significantly associated with overall glucose intolerance after adjusting for potential confounders. In females, history of hypertension, sedentary life style and low intake of fruits and vegetables was also found to be significantly associated with risk of having overall glucose intolerance and the association was not seen in male participants.

**Conclusion:** The prevalence of overall glucose intolerance observed in this study is quite high in comparison to the prevalence reported by Pakistan National Diabetes Survey in 2007 (22% in urban areas). This difference could be attributed to the sample selection since glucose tolerance test was done in high risk individuals based on high risk score in our study.

### 5.32

#### FREQUENCY OF ANGIOTENSIN CONVERTING ENZYME INHIBITOR AND ANGIOTENSIN RECEPTOR BLOCKER USE IN PATIENT WITH DIABETIC NEPHROPATHY

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**Background:** Diabetic nephropathy is an increasingly common cause of end-stage kidney disease (ESKD) accounting for 40 percent of cases. The prevalence of diabetes mellitus worldwide is projected to reach an estimated 366 million by 2030 and current reports estimate the number of adults in

the U.S. with diagnosed diabetes is 17.5 million (1). Over activity of the renin angiotensin system has been implicated in the deterioration of renal function in patients with diabetic nephropathy. Reduction of proteinuria is associated with delayed progression of chronic kidney Disease.

**Objective:** The objective of this study is to determine the frequency of patients using Angiotensin converting enzyme inhibitors (ACE) or Angiotensin receptor blockers (ARB) use in patients with diabetic nephropathy.

**Methods:** This was a cross sectional study conducting in medicine department for the period of 6 months All 118 patients admitted with diagnosis of Diabetic nephropathy. The primary outcome measure was to observe the use of frequency of use of ACE inhibitors and ARB. Data was stratified by age groups, gender and endocrinologist treatment to control for effect modifiers. Analysis will be done using the Statistical Package for Social Sciences (SPSS) version 19.

**Results:** A total of 118 patients were recruited in the study. Mean + SD age was  $62.01 \pm 13.65$  years, 53.4% were males and 46.6 % were females. The frequency of use of ACE inhibitors and ARB amongst patient with Diabetic Nephropathy was 26.3%.

**Conclusion:** Overall frequency of ACE inhibitors and ARBs use is low in these patients with diabetic nephropathy. We therefore, recommend future studies with larger sample sizes, to estimate more reliable and generalizable frequency of use of ACE inhibitors and ARB.

**Keywords:** Diabetic nephropathy, Angiotensin converting enzymes inhibitors, Angiotensin receptor blockers

## **GI/Liver**

### 6.1 SHORT TERM OUTCOME AND PREDICTORS OF RESPONSE TO NEOADJUVANT TREATMENT IN RECTAL CANCER

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*Introduction:* Rectal cancer is the third most common cancer. Neoadjuvant chemoradiation is the treatment offered in hope to downstage tumor. It has also proven effect on decreased local recurrence. But there is no effect on overall survival of patient. There is a cost of this treatment especially in a society where patient has to pay for his treatment. This study was conducted to see response to neoadjuvant in our population and to see can it be predicted that whether a particular patient will benefit from neoadjuvant treatment or not.

*Material And Methods:* We included 27 patients with rectal cancer who recieved neoadjuvant treatment. They were divided into responders and nonresponders on the basis of imaging. We compared pretreatment factors to identify differences in both groups.

*Results:* Response to neoadjuvant treatment was seen in 11/27 patients (40%) with complete pathological response in 26%. Age was found to be statistically different in responders (51.5 +/- 14.5) versus nonresponders (39.25 +/- 15.9)  $p=0.049$ . There was no difference in gender, pretreatment tumor stage, tumor biology and distance from anal verge.

*Conclusion:* Response to neoadjuvant treatment seems to be less in younger patients than in older patients with rectal cancer. But due to small number of patients and retrospective study we recommend a prospective study to confirm this finding.

*Keywords:* Neoadjuvant, Rectal cancer, Responders

### 6.2 DIAGNOSTIC ACCURACY OF CT SCAN IN DETERMINING STAGING OF RESECTABLE ESOPHAGEAL CANCER

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*Introduction and Objectives:* CT scan is an important tool in staging of esophageal cancer. Survival can be improved by providing neoadjuvant treatment which depends on stage of esophageal cancer. So it is very important to stage the disease accurately. The objective of this study is to determine diagnostic accuracy of CT scan to stage esophageal cancer.

*Method:* Ct scans of 62 patients included in study were reviewed by a Consultant radiologist who was blinded for the final stage of tumor. Diagnostic accuracy measured by comparing with histopathological staging.

*Result:* Accuracy, sensitivity and specificity of CT for T2 and T3 are 50%, 61%, 68% and 69%, 67%, 56% respectively. Accuracy, sensitivity and specificity of CT for nodal disease are 83%, 59% and 75%.

*Conclusion:* Ct scan alone has low diagnostic accuracy for staging Esophageal Cancer..

*Keywords:* Esophageal cancer, Diagnostic accuracy, CT scan

### 6.3 IMPACT OF H.PYLORI INFECTION ON SERUM LEVELS OF B12, FOLATE AND HOMOCYSTEINE IN PATIENTS WITH FUNCTIONAL DYSPEPSIA: A CROSS- SECTIONAL STUDY.

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**Objective:** To find out the impact of H.pylori infection on serum levels of vitamin B12, folate and homocysteine in functional dyspepsia (FD) patients.

**Methods:** 132 FD patients were enrolled. Serum was analyzed for B12, folate and homocysteine levels before gastroscopy. H.pylori infection was diagnosed by histopathological examination of gastric biopsies and urea breath test. Mean serum concentrations of folate, B12 and homocysteine were compared between H.pylori-positive and negative by statistical tests.

**Results:** Mean age was  $40.3 \pm 11.5$  (19-72) years. H.pylori was present in 80 (61.5%) FD patients and absent in 50 (38.5%). Mean serum levels of B12, folate and homocysteine in the H.pylori-positive group was not significantly different from H.pylori-negative group ( $357 \pm 170$  vs.  $313 \pm 136$  pg/mL;  $p = 0.13$ ), ( $4.35 \pm 1.89$  vs.  $4.42 \pm 1.93$  ng/mL;  $p = 0.84$ ); ( $15.88 \pm 8.97$  vs.  $16.62 \pm 7.82$   $\mu\text{mol/L}$ ;  $p = 0.24$ ), respectively. B12 deficiency ( $\leq 200$  pg/mL) was 23.8% in the H.pylori-positive vs. 22.0% in the H.pylori-negative patients. Folate deficiency ( $\leq 3.5$  ng/mL) was 33.8% in the H.pylori-positive vs. 36% in the H.pylori-negative group. Hyperhomocysteinemia ( $>15 \mu\text{mol/L}$ ) was present in 46.2% of H.pylori-positive patients compared to 44% in the H.pylori-negative group. Correlation analysis indicated that serum B12 levels were inversely associated with homocysteine levels in patients with FD ( $\rho = -0.192$ ;  $p = 0.028$ ).

**Conclusions:** This study demonstrated no impact of the presence of H.pylori on B12, folate and homocysteine levels in FD patients, however, an inverse relationship was found between vitamin B12 and homocysteine levels.

**Keywords:** H.pylori infection, Vitamin B12 & Homocysteine, functional dyspepsia

#### 6.4 ESOPHAGOGASTRIC ANASTOMOSIS: HAND SEWN SINGLE LAYER VS. STAPLED? AN AUDIT

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**Aims (Objectives):** Primary: To determine the incidence proportion of post-operative anastomotic leak in single layer continuous vs. stapled esophago-gastric anastomosis in two stage esophagectomy.

Secondary: To compare, 30-day post-operative mortality, Length of hospital stay (LOS) and Cost of suture/stapler used for anastomosis.

**Materials & Methods:** This retrospective audit was approved by Ethical review committee. It included patients from January 2007 till June 2014, with either single layer continuous hand sewn or circular stapled esophago-gastric anastomosis. Those with other types of anastomotic techniques and incomplete data were excluded. Outcome variables (Anastomotic leak, length of hospital stay, 30 day mortality and cost of suture/stapler) were compared between both the groups.

**Results:** In total 105 patients met our inclusion criteria (hand-sewn=65, stapled= 40). Both groups were comparable regarding baseline variables (Age, Co-morbid). Incidence proportion of anastomotic leak was 2/65(3%) and 2/40(5%) with p-value:0.61 (C.I: 0.04-2.82) in hand-sewn vs. stapled groups respectively. Median LOS in days was significantly different in both groups i.e handsewn (10days) vs. (13days) p-value: <0.001. Both the groups were comparable regarding post-operative mortality (handsewn 2/65(3%) & stapled 0/40), whereas the cost of suture (PDS 3/0) is significantly less than circular endostapler.

**Conclusion:** Both the groups are comparable regarding anastomotic leak and post-operative mortality, whereas single layer hand sewn is better than stapled with regard to cost of material used for anastomosis and length of stay.

**Keywords:** Esophagectomy, Anastomotic Leak, Suture/Stapler

## 6.5 GASTROINTESTINAL AMYLOIDOSIS

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*Introduction:* Amyloidosis refers to the extracellular deposition of fibrils composed of low molecular weight subunits identified on biopsy specimens both by their characteristic appearance and ability to bind Congo red leading to green birefringence under polarized light. The three most common causes of systemic amyloid deposition are primary or AL amyloidosis, Reactive (secondary) or AA amyloidosis and Dialysis-related amyloidosis. Gastrointestinal (GI) disease is present in as many as 60 percent of patients with reactive amyloidosis. GI involvement appears to be less common in AL amyloidosis. Hepatic involvement is much more common, being seen in as many as 70 percent of patients.

*Case report:* 59 years old gentleman known case of DM, HTN admitted with complaint of abdominal pain, generalized weakness, decreased appetite and weight loss of about 18 kg for one year. Examination and Ultra sound abdomen showed hepatomegaly. Abdominal pain was not getting better. Underwent Liver biopsy. Liver tissue showed massive deposition of amyloid in the spaces of Disse. Features were consistent with Amyloidosis. All the workup for secondary amyloidosis was negative, so the diagnosis of primary (AL) amyloidosis was made. Patient had progressive renal failure so required regular hemodialysis.

*Conclusion:* High index of suspicion is required to diagnose GI amyloidosis. Once diagnosed, patients usually have progressive disease and ultimately develop complications like nephrotic syndrome and renal failure and require hemodialysis followed by liver and or kidney transplantation.

*Keywords:* gastrointestinal amyloidosis, AL amyloidosis, AA amyloidosis

## 6.6 AUTOIMMUNE PANCREATITIS MIMICKING KATSKIN TUMOUR ON RADIOLOGY

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Autoimmune pancreatitis is a rare yet increasingly recognized type of chronic pancreatitis with characteristic histopathological and radiologic manifestations. Rarely, the cholangitis associated with autoimmune pancreatitis can present radiologically in a manner similar to that of a cholangiocarcinoma or Klatskin tumor.

*Case:* A 65 yr old male presented to the gastroenterology clinic with a 3 month history of jaundice, pruritis and abdominal pain. CT scan of the abdomen showed soft tissue thickening in the common hepatic duct at the region of confluence causing wall thickening and luminal obliteration at this level. These findings were suggestive of Klatskin tumour. Diffuse enlargement of pancreas with a surrounding low attenuation halo was also seen on CT scan. Based on these radiological findings and laboratory investigations, a provisional diagnosis of Autoimmune pancreatitis was made. There was complete resolution of all the symptoms and radiological findings after corticosteroid therapy. *Conclusion:* In cases of Klatskin tumour, the possibility of Autoimmune pancreatitis must be considered in order to avoid misdiagnosis and any resulting unnecessary surgery. This is the second case report of Autoimmune pancreatitis mimicking a Klatskin tumour on radiology.

*Keywords:* Autoimmune pancreatitis, Klatskin tumour, radiology

## 6.7 PHARMACOLOGICAL BASIS FOR THE MEDICINAL USE OF BITTER APPLE IN CONSTIPATION

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*Background:* Citrullus colocynthis, commonly known as “bitter apple” is native to Mediterranean Basin and Asia. This is a popular plant and has been used indigenously to treat hypoactive gut disorders such as constipation.

*Objective of the study:* This study is planned to assess the effectiveness of fruit extract of *C. colocynthis* in constipation and to explore the possible mode of action of its laxative effect. The in-vivo studies were conducted in mice, while isolated ileum preparations of mice, rat and guinea-pig were used for the in-vitro experiments. The gut stimulant responses of the test material in isolated tissues were measured using isotonic transducers coupled with PowerLab data acquisition system.

*Results and discussion:* The crude extract of dried fruit of *C. colocynthis* (Cc.Cr) at 100 and 300 mg/kg caused increased production of wet feces and propelled charcol meal in mice similar to the effect of carbachol (1 mg/kg), a cholinergic agonist and known gut stimulant. When tested on isolated ileum preparations of mice, rats or guinea-pig, it showed gut stimulant property in terms of exhibiting contractions on the basal status of ileal strips being most potent at guinea-pig tissues followed by rat and mouse tissues. When the contractile responses of Cc.Cr were restudied in the presence of atropine (0.1  $\mu$ M), these were found blocked in mouse tissues, while partially sensitive to atropine in rat and guinea-pig tissues at higher doses.

*Conclusion:* These results indicate that *C. colocynthis* fruit extract possesses prokinetic, laxative and gut stimulant properties mediated partially through the activation of muscarinic receptors, thus providing evidence to its medicinal use in constipation.

*Keywords:* Bitter Apple, Prokinetic, Gut stimulant

## 6.8 SPONTANEOUS ENTEROENTERIC FISTULAE IN PATIENTS WITH ACUTE BOWEL ISCHEMIA

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*Introduction:* Approximately 15-25% of fistulae form spontaneously, without any history of preceding surgical intervention. Diseases such as IBD and pancreatitis are commonly implicated in the etiology of these spontaneous fistulae. Rare causes of spontaneous fistulae include appendicitis, radiation therapy and perforated duodenal ulcers. Ischemia has been reported as a possible cause of spontaneous enteroenteric fistulae formation in patients without any history of abdominal intervention.

*Cases:* Patient 1 A 38-year-old male presented to the emergency room with a 10 days history of severe abdominal pain with associated fever and vomiting. CT scan of the abdomen showed an eccentric plaque like partial thrombus at the origin of superior mesenteric artery (SMA). Based on clinical presentation and CT scan findings, a diagnosis of bowel ischemia secondary to SMA thrombosis was made. Later the patient developed an enteroenteric fistula at the same location where ischemia was noted earlier. Patient 2 A 22 years old female presented to the general surgery service with a one week history of abdominal pain and diarrhoea. Abdominal CT scan showed thrombosis in the mesenteric and portal vein with ischemia of the duodenum and proximal jejunal loops. The patient presented to the emergency room 5 days later with the complaints of abdominal pain and vomiting for two days. CT showed an enteroenteric fistula between the proximal jejunal loops.

*Conclusion:* Bowel ischemia can result in enteroenteric fistulae. This is the first case report in medical literature of patients having enteric enteric fistulae as a result of bowel ischemia.

*Keywords:* bowel ischemia, enteroenteric fistula, ischemia

## 6.9 MEGACYSTIS MICROCOLON INTESTINAL HYPOPERISTALSIS SYNDROME (MMIHS) – A RARE CASE OF INTESTINAL OBSTRUCTION IN NEWBORN

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*Objective:* To recognize Megacystis microcolon intestinal hypoperistalsis syndrome as a rare and fatal cause of neonatal intestinal obstruction.

*Case:* We report a case of a term baby girl with an antenatal diagnosis of intra-abdominal cyst and bilateral hydronephrosis born through C-section. She presented with abdominal distension, inability to pass urine and stools and bile stained vomiting since birth. On abdominal xray: Massive distension of abdomen. Ultrasound abdomen: Large thin-walled anechoic cystic lesion occupying the abdomen causing gross bilateral hydronephrosis. Subsequent CT abdomen showed occupation of the entire abdominal cavity by significantly distended urinary bladder resulting in gross hydronephrosis. The bowel loops were collapsed. A suggestion of megacystis microcolon intestinal hypoperistalsis syndrome was made and barium enema was advised for confirmation. Non-ionic contrast was given through rectum which opacified small appearing colonic loops concentrated in the midline. The appearances confirmed microcolon. Silicon catheter decompressed her bladder. She was managed medically. It was planned to explore the case surgically but suddenly the patient's condition deteriorated and was put on ventilator support and unfortunately she died on 9th day of her life.

*Conclusion:* Despite it being a rare cause of intestinal obstruction, it is necessary to consider MMIHS in terms of differential diagnosis of intestinal obstruction and pathology of urinary bladder in the newborn to reduce the mortality.

*Keywords:* Megacystis Microcolon Intestinal Hypoperistalsis Syndrome (MMIHS), intestinal obstruction, microcolon

## 6.10 VALUE OF ADJUSTED BLOOD REQUIREMENT INDEX (ABRI) IN DETERMINING FAILURE TO CONTROL BLEED IN PATIENTS WITH ACTIVE ESOPHAGEAL VARICEAL BLEEDING

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*Background:* Variceal bleeding is a frequent complication and major cause of death in patients with cirrhosis.

The definition of failure to control bleeding at the Baveno IV consensus meeting, included the Adjusted Blood Requirement Index (ABRI). The aim of this study was to evaluate the measurement of ABRI as a marker of failure to control bleeding and evaluate the consistency of ABRI in relation to other criteria of failure to control variceal bleeding proposed at Baveno Consensus Workshops.

*Methods:* This cross sectional prospective study was enrolled 137 patients admitted to the hospital due to acute variceal bleeding. The number of blood units transfused, change in Hb values, and ABRI were calculated after each unit of blood transfusion till 120 hours. Cut off values ( $>0.75$ ) of ABRI was compared with other parameters that define failure to control variceal bleeding.

*Results:* The median ABRI was 0.43 with an interquartile range of 0.56. The number of patients with  $ABRI \geq 0.75$  was 34 (24.8%) showing a failure to control variceal bleeding according to Baveno IV based ABRI criteria. failure to control acute variceal bleeding occurred in 51(37.2%) patients. Bivariate analysis to test the failure to control variceal bleeding showed that initial hemoglobin, hematocrit value and ABRI score were identified as predictor of poor outcome (Table 4). Multivariable logistic analysis revealed that increase the value of initial hemoglobin (aOdd ratio: 1.57; 95% CI: 1.22-2.03) and ABRI value (aOdd ratio: 70; 95% CI: 14-348) increased the risk of poor outcome.

*Conclusion:* In this study, we failed to correlate ABRI score and other Baveno IV criteria. Similarly no correlation was found when ABRI values were

correlated with baseline hemoglobin, hematocrit and other parameters. However, previous studies reported a significant correlation of higher ABRI score with mortality. A multicenter study with large number of patients is needed for further validation of ABRI score as an independent indicator of failure to control bleed with acute variceal bleeding.

*Keywords:* Adjusted Blood Requirement Index, acute variceal bleeding

### 6.11

#### TO EVALUATE THE OUTCOMES OF DRUG ASSOCIATED ACUTE PANCREATITIS AND TO COMPARE WITH GALL STONE ASSOCIATED AND ALCOHOL INDUCED ACUTE PANCREATITIS.

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*Background:* Acute pancreatitis is an acute inflammatory disorder of the pancreas that involves the pancreas and peripancreatic tissues but can sometimes affect other organ system. The initial evaluation of patients with acute pancreatitis involves determining the cause and assessing the severity of disease. The most common causes of acute pancreatitis are gall stones and alcohol abuse, accounting for 70-80% of case. Other risk factors i.e; Hypertriglyceridemia, Hypercalcemia, Drugs, Infections, Vasculitis, Trauma, Post ERCP, Tumors, Pancreatic divisum, Idiopathic. Drugs are considered to be a rare cause of acute pancreatitis, however 525 different drugs are listed in the World Health Organization (WHO). Many of them are widely used to treat highly prevalent diseases, the causality for many of these drugs remains elusive and causality of only 31 of these 525 drugs was established.

The determination of the incidence of drug induced pancreatitis is complicated as diagnosing drug induced pancreatitis is very difficult. Its incidence has been estimated between 0.1-2% in some older

studies but in more recent studies its incidence is upto 5.3%.

*Objectives:* To determine the frequency of the etiological risk factors of acute pancreatitis (gall stones, alcohol, drugs and others).

To determine the frequency of the complications of acute pancreatitis. To compare the frequency of complications of drug associated acute pancreatitis with gall stone and alcohol related acute pancreatitis.

To determine the predictors of poor outcomes in drug associated acute pancreatitis.

*Methods:* All patients with acute pancreatitis admitted in Aga Khan university Hospital during the period of last 12 years (From 1st January 2001 to 30th June 2012) will be included in the study. Risk factors and common drugs associated with pancreatitis will be evaluated and outcomes will be assessed for the development of complications, length of stay, any surgical intervention and mortality. The patients will be divided into three groups: Acute pancreatitis associated with potential drugs. Acute pancreatitis associated with gall stones. Acute pancreatitis associated with alcohol. Other etiological risk factors of acute pancreatitis.

The outcomes will be compared between drugs and other risk factors associated with acute pancreatitis.

*Results:* To date we evaluated 200 patients with acute pancreatitis, the causative agents found, Gallstones 154 (77%), Alcohol 23 (11.5%), Drugs 05 (2.5%), and unknown cause 18 (9%). Among them 180 patients (90%) recovered completely, 7 patients (3.5%) developed pseudocysts, 11 patients (5.5%) developed sepsis and 02 patient (1%) expired. All patients with drug induced pancreatitis recoverd completely.

*Conclusion:* Gall stones are the leading cause of acute pancreatitis , secondly alcohol, while drugs are rare cause. Based on the above results patients with drug induced pancreatitis have good outcome as compared to gall stones and alcohol induced acute pancreatitis, however need further evaluation of data.

## 6.12

### IN VITRO SENSITIVITY OF HELICOBACTER PYLORI STRAINS OUTER MEMBRANE PROTEIN Q GENOTYPES TO DIETARY AND HERBAL EXTRACTS USED TO TREAT DYSPEPTIC SYMPTOMS

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**Background:** Helicobacter pylori outer membrane proteins Q (hopQ) mediate important pathogen–host interactions such as colonization, adhesion and the inflammatory response. Our previous work has shown susceptibility of H. pylori to some of the herbal extracts

**Aim:** To determine the sensitivity of clinical isolates of H. pylori and gastric epithelial cells to extracts of Capsicum annum (red and green pepper), Zingiber officinale (ginger), Okra (Lady finger), Glycyrrhiza glabra (Licorice) and Trachyspermum ammi (Ajwain) in vitro and its correlation to H. pylori outer membrane protein Q genotype I and 2.

**Methods:** Forty-three H. pylori isolates cultured from related gastroduodenal diseases (e.g., gastritis, gastric and duodenal ulcer and gastric carcinoma) and one standard strain ATCC 49503 was used to examine for the anti H. pylori activity of aqueous methanol extract of plants. Sensitivity to clarithromycin was used as a control. Plant extracts were prepared by method previously described. H. pylori were isolated from the antral biopsy specimens and confirmed through the standard microbiology procedures. Minimum bactericidal concentration of the active plants was determined at the concentration range from 1.0 to 2.0 µg/ml. H. pylori outer membrane protein Q genotype I and 2 were defined by PCR using primers described earlier and sequencing of PCR product and BLAST Query. Univariate analysis was performed by using the independent sample t-test and Pearson Chi-square test. A P-value of < 0.05 was considered as statistically significant.

**Result:** These are the preliminary results of an ongoing study. Of 44 H. pylori isolates, their growth

was completely inhibited by exposure to lady finger in 42(95%), in 40(91%) to green chili, in 40(91%) to ginger, 37(84%) to red chili, 36(82%) to Ajwain and in 26(59%) to licorice, respectively.

22(50%) H. pylori isolates were hopQ type 1 and 22(50%) were hopQ type 2, respectively. H. pylori with both hopQ type 1 and type 2 were sensitive to green chili in 100% cases (Cramer's V= 0.316, p=0.036 for both types). H. pylori isolates with hopQ type 2 were also sensitive to ginger 22(100%) (p=0.036) compared to 18(82%) and hopQ type 2 correlated with sensitivity to ginger (Cramer's V= 0.316, p=0.036).

**Conclusion:** H. pylori with hopQ type 1 and 2 are susceptible to green chili in 100% cases. In addition, H. pylori with hopQ type 2 also showed 100% sensitivity to ginger extract. Further work is required to explain these results.

## 6.13

### IMPACT OF NON-ALCOHOLIC FATTY LIVER ON HEPATITIS C TREATMENT OUTCOME

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**Background:** Hepatitis C is known to exacerbate the metabolic syndrome by increased insulin resistance and promoting obesity. Metabolic abnormalities have shown to influence the response to treatment in Hepatitis C patients.

**Objectives:** is to evaluate the effect of metabolic factors on viral response in HCV patients who were treated with Peg interferon.

**Material and Methods:** HCV genotype 3 patients receiving Peg interferon were evaluated for metabolic factors. They were divided into two groups on the basis of presence of fatty liver on ultrasound. A cohort of NASH patients was also taken to compare the metabolic profile. Virological responses during interferon treatment (EVR; early virological response, ETR; end of treatment response, and SVR; sustained virological response) were compared between HCV alone and HCV with NASH patients.

**Results:** A total of 298 patients were enrolled (HCV;172, HCV with NASH; 45, and NASH;81), 179 (60%) were males. There was no difference in lipid profile, blood sugar levels, liver enzymes values, thyroid function test between the groups. BMI was significantly high in NASH group compared to Hepatitis C with or without NASH ( $p<0.001$ ). Early virological response (83.9 % vs.68.4%;  $p= 0.03$ ) and sustained virological response (54.4% vs. 30%;  $p=0.04$ ) were significant better in hepatitis C patients without NASH.

**Conclusion:** early and sustained virological responses to interferon treatment were significant less in patients who have concomitant NASH with Hepatitis C.

#### 6.14

##### DISTRIBUTION OF HELICOBACTER PYLORI OUTER MEMBRANE PROTEIN Q GENOTYPES IN NATIVE PATIENT POPULATIONS

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**Background:** Outer membrane proteins of *Helicobacter pylori* (*H. pylori*) mediate important pathogen–host interactions such as colonization, adhesion and the inflammatory response. *H. pylori* Q (hopQ) genotypes defined as hopQ type I and hopQ type II outer membrane proteins have been suggested to be associated with increased morbidity. **Aim:** To determine the hopQ genotypes of *H. pylori*, their relation to gastroduodenal diseases, and histopathology and relation of hopQ genotypes with *H. pylori* virulence marker cytotoxin-associated gene A (cagA).

**Method:** *H. pylori* clinical isolates were cultured from gastric biopsies obtained on esophagogastroduodenoscopy (EGD) from patients with upper gastrointestinal symptoms for rapid urease test, histology and PCR examination for hopQ type I and hopQ type II. DNA extraction was performed and used for hopQ genotype PCR.

Sequencing of PCR products of hopQ type I and hopQ type II was performed.

**Results:** Seventy-one patients were enrolled with a mean age of  $43 \pm 15$  year and 45(63%) males. 43(61%) had abdominal pain and 28(39%) of bloating, respectively. On EGD, 65(91%) had gastritis, 4(6%) duodenal ulcer and 2(3%) gastric ulcer, respectively. 43(61%) were diagnosed as non-ulcer dyspepsia (NUD), 13(18%) chronic liver disease, 9(13%) IBS and 6(9%) as peptic ulcer, respectively. 48(68%) had chronic active gastritis and 23(32%) chronic gastritis, respectively. PCR for hopQ type1A was positive in 30(42%), type1B in 40(56%), type 2 in 55(78%) and cagA 26(37%), respectively. Single hopQ genotype was present in 34(48%) and multiple types in 37(52%). HopQ type 2 was associated with abdominal pain in 29(53%) ( $P=0.014$ ) and diagnosis of NUD in 29(53%) ( $p=0.018$ ) and with chronic active gastritis in 34(62%) ( $p=0.071$ ), respectively. HopQ type 1A was also associated with abdominal pain 23(77%) ( $P=0.018$ ) and cagA in 19(63%) ( $p<0.001$ ), while hopQ type 1B was associated with cagA in 20(50%) ( $p=0.008$ ), respectively.

**Conclusion:** HopQ type 2 was predominant in *H. pylori* strains. Both hopQ genotypes 1A and 2 were associated with abdominal pain. This observation need to be confirmed in *H. pylori* strains isolated from multiple populations of patients.

**Keywords:** *Helicobacter pylori* outer membrane protein type 2, Nonulcer dyspepsia, Gastritis

#### 6.15

##### MANAGEMENT OF BLEEDING GASTRIC VARICES: EFFICACY OF SINGLE SESSION OF HISTOACRYL INJECTION.

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**Introduction:** Gastric variceal bleeding (GVB) is one of the most feared complications of portal hypertension and hence, merits investigation for its optimal therapy. We aimed to evaluate the efficacy

and long term outcome(s) of patients treated with single session of Histoacryl sclerotherapy for active GVB.

**Methods:** A systematic review of medical records was conducted to identify patients treated with histoacryl injection for gastric varices from 1998 to 2011. Patients were graded into isolated gastric varices (IGV1 and IGV2) and gastroesophageal varices (GOV1 and GOV2). The outcome parameters included initial hemostasis, re-bleeding and mortality rates.

**Results:** Ninety-seven patients were included, mean age was  $51.0 \pm 12.5$  years, 62% were male. Hepatitis C was the most common etiology found in 63 (65%) patients followed by NonB-NonC cirrhosis in 14 (15%), Hepatitis B in 11 (12%) and alcoholic liver disease in 5 (5%) patients. Majority of the patients were classified as Child Pugh grade B and C; 45 (46%) and 29 (30%) patients, respectively. A total of 40 (41%) patients were IGV1, 35 (36%) patients were GOV2, 20 (21%) patients were GOV1 and 2 (2%) patients were IGV2. Single session of histoacryl was successful in controlling bleeding in 83 (86%) patients. Seven (7%) patients died during the hospital stay. Re-bleeding was seen in 24 (27%) patients during one year follow-up out of whom 12 (50%) were successfully managed with repeated histoacryl injection while the remaining 12 patients either underwent TIPS (6 patients), surgical shunt placement (2 patients) or died during that admission (4 patients). Overall mortality rate at 6 weeks, 6 months and 1 year was 14 (14%), 19 (20%) and 26 (27%) patients, respectively.

**Conclusion:** Single session of Histoacryl sclerotherapy is effective in majority of patients with active gastric variceal bleeding. Re-bleeding was observed in one fourth of patients, half of which were successfully controlled by repeated histoacryl sclerotherapy.

**Keywords:** Cyanoacrylate, endoscopic therapy, gastric varices, histoacryl, sclerotherapy.

## 6.16

IL28B, RS12979860 VARIANTS DO NOT PREDICT VIROLOGICAL RESPONSE IN CHRONIC HEPATITIS C GENOTYPE 3.

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**Introduction:** Interleukin 28B (IL28B) genotyping helps predict response to the pegylated interferon and ribavirin combination therapy. However, most of the studies have been done on patients infected with hepatitis C virus (HCV) genotype 1 and these correlations are not much investigated in HCV genotype 3 (HCV-3). This study aimed to assess the role of single nucleotide polymorphism (SNP) of IL28B, rs12979860, in predicting sustained virological responses (SVR) to treatment in patients infected with HCV-3.

**Methods:** This ongoing study has so far included 71 patients infected with HCV-3 who received combination therapy. Patients were classified into 3 groups: patients with sustained virological response (n=24), relapsers (n=18) and non-responders (n=29). SNP of IL28B, rs12979860 was determined by PCR-RFLP protocol.

**Results:** Out of 71 patients, 44 were male. Mean age was  $43.7 \pm 11.0$  years. Seventeen patients had diabetes while clinical cirrhosis was present in 22 patients. Genotype CC/CT/TT of rs12979860 was found in 22 (31%), 43 (61%) and 06 (8%) respectively. In carriers of rs12979860 genotype CC, SVR, relapse and non-response was seen in 9 (41%), 6 (27%), and 7 (32%) patients. These figures were 12 (28%), 11(25%), and 20 (47%) for genotype CT and 3 (50%), 1 (17%), 2 (33%) for genotype TT. There was no difference of SVR in patients with genotype CC or non-CC ( $p = 0.396$ )

**Conclusion:** In patients infected with HCV-3, IL28B rs12979860 SNP has no impact on the sustained virological clearance. Presence of CC genotype does not improve the response



### 6.17

#### INTESTINAL TUBERCULOSIS IN A LIVER TRANSPLANT RECIPIENT: CASE REPORT

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*Introduction:* Diarrhea in a patient with liver transplant can be caused by various factors e.g. infectious agents, drug-specific effects, inflammatory bowel disease and graft-versus-host disease.

*Clinical presentation:* We report a case of 58 years lady, who had living-donor liver transplantation 36 months ago. She was being maintained on mycophenolate mofetil as immunosuppressant therapy after having renal impairment with Tacrolimus. Prior to the presenting illness she has problems of anastomotic biliary strictures which were managed with repeated stent placements in biliary system. She presented with 3 months history of loose stools which were small in volume, 6-8/day, without blood or mucus. This was associated with mild abdominal pain, loss of appetite, generalized malaise, abdominal distension and weight loss. On examination she was wasted, pale, dehydrated and had moderate ascites. She underwent blood and stools examinations followed by colonoscopy. Colonoscopy revealed diffuse loss of mucosal vascularity and few ulcers in proximal colon. The biopsies were suggestive of granulomatous inflammation. The ascitic fluid analysis demonstrated high protein, lymphocyte pre-dominant fluid with low serum ascitic-albumin-gradient. The results of ascitic fluid culture and tissue cultures for mycobacterium tuberculosis are awaited. However, she was started on standard antituberculous therapy and found relief in her symptoms and overall clinical condition.

*Conclusion:* Tuberculosis is an important consideration in patients presenting with diarrhea post liver transplant and disease-specific diagnostic tests should be done to rule out this infection, especially in the scenario of endemicity of tuberculosis in Pakistan.

*Keywords:* Tuberculosis, liver transplantation

### 6.18

#### SUCCESSFUL EXTUBATION IN MECHANICALLY VENTILATED CIRRHOTIC PATIENTS: A DREAM OR A REALITY?

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*Introduction:* The best scoring system to predict the short-term outcome in cirrhotic patients requiring mechanical ventilation (MV) is yet not known. The aim of the current study is to compare the liver specific scores, i.e Child-Turcotte-Pugh (CTP) and Model of End-stage Liver Disease (MELD) with ICU specific scores like Acute Physiology and Chronic Health Evaluation (APACHE II) and Sequential Organ Failure Assessment (SOFA) to predict the short-term mortality in cirrhotic patients requiring MV.

*Methods:* This cross-sectional study was conducted in the medical ICU of Aga Khan University Hospital from January 2008 to November 2012. All cirrhotic patients requiring MV were enrolled after informed consent from their next of kin. Data on patients' characteristics, other laboratory parameters, reason for intubation, hepatic encephalopathy, need for vasopressor support, and duration of ICU and hospital stay were collected, and first-day APACHE II, SOFA, CTP, and MELD scores were calculated, with mortality being the primary outcome measure.

*Results:* 88 patients were included in the final analysis. Mean age was 50±13 years and majority were male (65.9%). The most common etiology was hepatitis C (52.3%, 46/88). Overall mortality was 71.6% (63/88). By univariate analysis, CTP score >10 (P< 0.001), MELD score > 18 (P< 0.001), hepatic encephalopathy (P= 0.001), need for vasopressor support (P= 0.09), prothrombin time (P< 0.001), presence of tense ascites (P= 0.01) and APACHE II (P< 0.001) were significantly associated with mortality (Table). On multivariate analysis, child class >10 (odd ratio=21; 95% CI: 4-104; p value< 0.001) was the independent predictor of mortality. Area under curve was 0.81 (95% CI, 0.69-0.92) for APACHE II, 0.81 (95% CI, 0.71-

0.91) for SOFA, 0.89 (95% CI, 0.82-0.96) for CTP, and 0.86 (95% CI, 0.77-0.95) for MELD in predicting mortality

*Conclusion:* CTP and MELD score are better predictors of short-term mortality in patients with cirrhosis requiring MV as compared to APACHI II and SOFA.

### 6.19

#### OUTCOMES OF ERCP PERFORMED IN A TERTIARY CARE HOSPITAL – A 12 YEARS EXPERIENCE.

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*Background/Aims:* ERCP has been widely practiced for more than 35 years, progressively evolving from a diagnostic to a therapeutic role. The risk of serious complications was recognized early and has been the focus of many studies and reviews. The aim of the study was to assess the outcome of ERCP performed in AKUH and also to report the incidence of post ERCP complications in patients undergoing therapeutic and diagnostic ERCP.

*Methodology:* All patients referred to our unit between January 1 2003 and December 31 2013 were included in the study. The patients were referred to our unit from other hospitals or from our own institution. Data on all of these patients were collected from the hospital records. Every piece of ERCP patient data, procedure indication, ERCP diagnosis, therapeutic interventions and any further radiological/surgical approaches along with the course of the procedure, and procedural complications were analyzed.

*Results:* These are preliminary results from the study. Until now we have examined 140 ERCP procedures which were performed on 132 patients (53.03% males), with a mean age 49.82 years (range 20 to 84 years). The procedure was performed with a therapeutic intention in 95% of cases because of suspicion of: choledocholithiasis (58%), malignant and benign biliary strictures (25%), post-

cholecystectomy bile leak (12%), chronic pancreatitis (3%) and worm infestation (2%). The overall success rate of selective duct cannulation was 91.4%. Among the 140 procedures with complete information, 26 complications occurred in 25 patients (17.8%): Pancreatitis in 11.4%, severe abdominal pain in 3.5%, sepsis 4.2%, bleeding 0.7%, and perforation in 0%. Procedure-related mortality was 0.7% due to sepsis. The main factors influencing the complication rate were the technical difficulty of the examination, and a therapeutic vs. a diagnostic procedure.

*Conclusions:* Preliminary data suggest that diagnostic/therapeutic ERCP is associated with low risk of complications. Further collection and analysis of all procedures will enable a proper evaluation to be made.

### 6.20

#### EXPERIENCE OF SORAFENIB IN HEPATOCELLULAR CARCINOMA PATIENTS PRESENTING AT A TERTIARY CARE HOSPITAL IN KARACHI, PAKISTAN-A CASE SERIES

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*Background:* Hepatocellular Carcinoma is a fifth leading cause of cancer deaths worldwide. A majority of these cases are found in Asia. Sorafenib is an oral multikinase inhibitor and a drug of choice for advanced stage Hepatocellular Carcinoma (HCC). Previous multicenter phase III randomized controlled trials conducted across Asia, Europe, Australia, north and South America have shown an overall median survival of 10.7 months in the Sorafenib group as compared to 7.9 months in the placebo group. We examined our experience with Sorafenib as a first line treatment for advanced stage HCC patients.

*Methodology:* We retrospectively reviewed medical records of 8 patients who had presented with HCC to Gastroenterology clinics at the Aga Khan University hospital and received Sorafenib

treatment. We analyzed Median overall survival defined as time from the start of treatment to either death or last follow-up visit.

*Results:* Median age at diagnosis of patients in this group was 58 years (range 52-67). Of these eight patients, six were males. Mean tumor size was  $6.6 \pm 3.7$  cm. As of March 2014, two patients were alive and on continued Sorafenib, two patients had discontinued Sorafenib; where one was because of progression, three patients had died and one was lost to follow-up. Estimated median overall survival time was 4 months (range 1-21 months).

Survival beyond one year was associated with MELD score  $\leq 10$  and no extra-hepatic spread at the time of diagnosis. Two of the patients who survived beyond one year belonged to child class A, one had multiple tumors ( $>3$ ) and only one had macroscopic vascular invasion on initial CT scan

*Conclusion:* Survival beyond one year was associated with MELD score of  $\leq 10$  and no extra hepatic spread. However, the results from this case-series should be interpreted with caution because of heavy censoring and small number of patients.

*Keywords:* Hepatocellular Carcinoma, Sorafenib, Survival

## 6.21

### HIGH RESOLUTION MANOMETRY FINDINGS IN PATIENTS PRESENTING WITH NON-OBSTRUCTING DYSPHAGIA AT TERTIARY CARE CENTRE

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*Introduction:* Dysphagia is a common symptom among patients presenting to GI outpatient clinics. High resolution esophageal pressure topography (EPT) is an evolutionary technology incorporating the combination of high resolution manometry (HRM) and pressure topography. It is useful tool in evaluating patients with Dysphagia. Esophageal motility disorders are now being more frequently recognized and evaluated. The classification now includes criteria for subtyping achalasia, EGJ

outflow obstruction, motility disorders not observed in normal subjects (Distal esophageal spasm, Hypercontractile esophagus, and Absent peristalsis), and statistically defined peristaltic abnormalities (Weak peristalsis, Frequent failed peristalsis, Rapid contractions with normal latency, and Hypertensive peristalsis).

*Methods:* We evaluated patients presenting to GI clinic having dysphagia with high resolution manometry. These patients had undergone esophagograms and endoscopy prior to being evaluated for motility disorders. Manometry findings were divided according to Chicago classification into 1) Achalasia (IRP  $>$  ULN and absent peristalsis), 2) GEJ outflow obstruction (IRP  $>$  ULN with intact of weak peristalsis), 3) Absent peristalsis (IRP normal with absent peristalsis) and 4) Weak peristalsis (IRP normal with peristaltic abnormalities).

*Results:* A total of 36 patients were evaluated. Mean age was 45 years with 22/36 (60%) less than 50 years of age. 21/36 were males (58%). The manometry findings showed: Absent peristalsis (distal esophageal spasm) in 14/36 (38%), classical achalasia in 4/36 (11%), GEJ out flow obstruction in 4/36 (11%) and Others included weak and failed peristalsis with or without latency 10/36 (27%), normal manometry was observed in 4/36 (11%) patients. Symptoms included Dysphagia (80%), chest pain (27%), regurgitation (11%) and weight loss (8%). These symptoms did not correlate with specific manometry findings.

*Conclusion:* Large proportion of patients with upper GI symptoms with normal upper GI endoscopy have abnormal high resolution manometry findings, however relationship between symptoms and HRM findings cannot be established.

## 6.22 SPECTRUM OF GASTROINTESTINAL DISEASES IN A TERTIARY CARE HOSPITAL- OBSERVATION FROM GI AND LIVER DISEASES OUTPATIENT REGISTRY

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*Introduction:* Digestive and liver diseases are associated with significant morbidity, mortality and costs. Statistics about prevalence of Gastrointestinal (GI) diseases and health care resource utilization provides important information for health care researchers which helps determine allocation of resources for health care and research. So far no such statistics have been reported from Pakistan. We aimed to describe the spectrum of GI and liver diseases presenting at tertiary care hospital in Karachi, Pakistan using data from outpatient registry at Aga Khan University Hospital (AKUH). It will not only provide insight on the disease burden but also be helpful in evaluation of the interventions and guide policy making.

*Methodology:* We have an established electronic database at the Gastro enterology clinic, AKUH which comprises of real time data entry. The registry collects information about patient characteristics and the outpatient discharge diagnosis on all the patients who present to the GI clinics at AKUH. There is a list of 52 approved diagnosis categories related to gastrointestinal diseases. For the purpose of this study, we extracted data from the registry on Age, Gender, primary and associated diagnosis of patients. We present data on patient characteristics and disease burden in this paper.

*Results:* The data contains information on 5700 visits captured during January to December 2013. The mean age of the patients were 43.6 years (SD=15.2) and ranged from 10-97 years. On an average, males were younger as compared to females. In most of the visits (53%), patients had gastrointestinal complaints such as gastritis and GERD, followed by liver diseases (43.9%), pancreatic and gall bladder related diseases (1.8%)

and malignancies (1.4%). Majority (56.9%) of the patients were males. As compared to males, a higher percentage of females reported gastro duodenal complaints (42.4% vs. 49.8%, P-Value <0.001)

*Conclusion:* Two leading reasons of visit to GI outpatient clinics are chronic liver disease and acid peptic related diseases (Gastritis, GERD and dyspepsia). As compared to males, a significantly higher proportion of females reported gastroduodenal complaints. These statistics can help guide the allocation of health care resources.

## **Haematologic & Oncologic Diseases**

## 7.1 TURNAROUND TIME OF REPORTING ACUTE LEUKEMIA ON BONE MARROW SPECIMENS

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*Introduction:* Acute leukemia is a medical emergency and delay in its diagnosis is associated with high mortality. Morphological features on bone marrow aspiration remains a useful diagnostic tool in developing countries and with the timely reporting the risk of complications like neutropenic sepsis, hyperleukocytosis and thrombohemorrhagic syndrome in acute promyelocytic leukemia can be reduced. *Objective:* Determine the turnaround time of reporting acute leukemia on bone marrow specimens. *Methods:* It is a cross sectional study performed at section of haematology from October-December 2014. Cases of acute leukemias reported in this duration were reviewed. Age, gender, location and reporting time of acute leukemias was analyzed.

*Results:* 1100 bone marrow specimens were received in the study duration. Out of these 1100 specimens, acute leukemia was reported in 95 (8.6%) cases. The mean age of patients was 24.7±15.7 years. 69 (72.6%) cases of acute leukemia were reported on the next reporting day. Delayed reporting was observed in 26 (27.3) % cases with median delay time of 3.5 days. 6 (23%) cases were already diagnosed cases of acute leukemia, in 7 (26.9%) cases the specimen of aspirate was diluted while in rest of the cases (n=18, 69.2%) cases further workup like cytochemical and immunohistochemical staining were required to made the final diagnosis.

*Conclusion:* Turnaround time of reporting acute leukemia within 24 hours in our laboratory was found to be 72.6 % (n=69). In 27.3% cases (n=26) delayed reporting was observed, which in most of the cases was due to requirement of additional workup.

*Keywords:* Acute Leukemia, Bone marrow,  
Turnaround time

## 7.2 BROMELAIN – AN ANTI-CANCER AGENT: LITERATURE REVIEW

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*Introduction:* Bromelain is a mixture of proteolytic enzymes derived from pineapple plant with diverse health beneficial properties like anti-inflammatory effect, digestive aid, skin debridement etc. but most auspicious role is anticancer activity. To discover anticancer effect of bromelain, very few human clinical studies have been conducted to date. It was determined that oral bromelain alone resolved some tumor masses and decrease metastasis in ovarian and breast tumor patients. Possibly this anticancer activity was due to increased monocytic cytotoxicity in breast cancer. Bromelain in conjunction with 5-flourouacil and vincristine significantly regressed tumor in breast cancer patients. Due to safety and health benefits, German Commission approved bromelain to treat inflammation after surgery and trauma. These positive evidences for anticancer effect promote oncologists to explore this area by further research and trials. *Objective:* To review evidence based primary data with respect to bromelain therapy in human breast and ovarian cancer.

*Methods:* Electronic database search carried out to consolidate available data. The most appropriate research articles were selected and were verified by related articles.

*Results:* Medicinal properties: Potential anticancer effect against human breast and ovarian tumors. Side effects: Rarely vomiting, diarrhea, unusual menstrual bleeding. Contraindication: Pregnant women, bleeding disorders, high blood pressure, liver or kidney disease. Dosage: 80-320 mg 2-3 times per day. *Recommendations/Conclusion:* This article provides insight to explore bromelain's role in breast and ovarian cancer. It might be a supplementary therapy in combination with

chemotherapy in cancer therefore; further exploration of bromelain's role would likely be of benefit for its therapeutic application.

*Keywords:* Bromelain, Clinical studies, Anticancer

### 7.3

#### CARING PATIENTS DURING PALLIATIVE STAGE: A LITERATURE REVIEW

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*Introduction:* This literature review highlights about the physical and social aspect of patient's life during palliative stage. Physical aspect comprises of pain, nutrition imbalance and anemia. Additionally, social domain includes social isolation, financial constrain and impaired communication. Improvement in physical aspect can be done by frequent assessment of pain, administration of painkillers and other soothing interventions. Additionally, preparing a healthy and balanced diet plan based on individual's interests also aid in improving nutritional imbalance and anemia. Allowing frequent visits of family members and other loved ones have great positive impact on patient's recovery which directly or indirectly lead patients towards healthy social life.

*Materials and Methods:* 8 research journals from 2008-2013 were studied and the relevant information were explored for analysis. The topics which were studied and are discussed in this writing were pain during palliative stage of disease, social life of patient at end life stage, assessment of patient's health etc.

*Result:* Review of literature suggest that palliative stage is the end of life for chronically ill patients. Pakistani healthcare providers are not much aware of palliative concept.

*Conclusion:* patient with end stages of diseases are the vulnerable and they should be cared cautiously and carefully. Mainly, the physical and social aspect of health should be considered to have better outcomes of treatments and to provide relief and comfort to patients.

*Keywords:* palliative, physical, social

### 7.4

#### SIGNIFICANCE OF ACCESS TO EARLY PALLIATIVE CARE IN ONCOLOGICAL DISEASES: A LITERATURE REVIEW

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*Introduction:* Multiple side effects and disease associated life threatening symptoms have been observed in oncology patients. Therefore, palliative care is considered to be the significant approach in order to enhance quality of life and survivorship throughout the treatment phase. To improve their quality of life during treatment phase by preventing complications, relieving sufferings and managing physically, socially, psychologically and spiritually is known as palliative care.

*Objective:* A literature review aims to establish a significance of early palliative care for oncology patients.

*Methodology:* A comprehensive literature review was done including 18 studies from 2005 to date, using various scientific database such as JPSM, Serles, The Oncologist, sciencedirect, JCO and JNCCN. *Results:* Studies have shown patients with cancer need a strategic multidisciplinary interventions depending upon the assessments made through implementing end of life care quality assessment tools and other reliable scales. Moreover, early palliative access has the great potential to immensely benefit the patient, symptomatically as well as costly.

*Conclusion:* In order to improve the palliative care, numerous measures are recommended. That is to overcome the lack of resources including medicines, nutrition and equipment. Furthermore, it is highly suggested that working upon limited theoretical knowledge among the health care providers by organizing training sessions will help meeting ultimate objective to deliver a holistic care. Not only this, an expert palliative care team should be a part of treatment plan in order to enhance end of life care formally.

*Keywords:* Palliative Care, Nurse's Role, Significant Approach

## 7.5

### TO DETERMINE FREQUENCY OF MUTATIONS (INTRON 22) IN PATIENTS WITH SEVERE HAEMOPHILIA A IN PAKISTAN

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*Introduction:* Haemophilia A is an X chromosome linked hereditary disorder caused by defective or dysfunctional factor VIII molecules. It is one of commonest inherited clotting factor deficiencies. Approximately 50% of patients with haemophilia A have severe disease and one half of all severe haemophilia A is due to intron 22 accounting for 40 – 50% of all mutation.

*Objectives:* The objective of the study is to determine frequency of mutations (intron 22) in patients with severe hemophilia A in Pakistan.

*Study Design:* Cross-sectional study. Setting: Aga Khan University Hospital, Karachi Duration: One year subjects: Total of 196 patients were included in the study.

*Methods:* All patients with less than 1% factor VIII level, were enrolled. Patients consent & EDTA blood samples for mutation analysis were obtained. Data was analyzed using SPSS version 19.0. Mean, standard deviation of patient's age, frequencies & percentages of intron 22 mutation were calculated. *Results:* 12 patients were positive & 184 patients were negative for intron 22 inversion. Therefore, frequency of intron 22 inversion in Pakistani population is 6.1%.

*Conclusion:* Genetic testing of severe haemophilia A patients is rapidly becoming part of routine care. There is a serious requirement that genetic studies of Pakistani population, should be performed, for detection of commonest mutation and sensible utilization of this information to improve their quality of life.

*Keywords:* Haemophilia A, Mutation, Intron 22

## 7.6

### PRIMARY DEBULKING SURGERY VERSUS NEO- ADJUVANT CHEMOTHERAPY IN STAGE III/IV OVARIAN CANCER: COMPARISON OF PERIOPERATIVE MORBIDITY AND SURVIVAL DATA IN PAKISTANI WOMEN

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*Objective:* The objective of this study was to compare the peri operative morbidity and survival rates between the two treatment groups.

*Methods:* Retrospective analysis of 118 patients with advanced stage ovarian carcinoma treated between 1999 and 2008 in Aga Khan University Hospital, Karachi was performed.

*Results:* Total of 118 patients were analyzed. Primary debulking surgery (PDS) group had 78 women (66%) and Neoadjuvant Chemotherapy (NACT) had 40(34%).The mean age and pre – operative CA 125 level were similar. PDS group had 74 (94.8%) patients with stage 3 and 4(5.1%) patients with stage 4 disease, while NACT group had 32(80%) and 8 (20%) with stage 3& 4 respectively. The frequency of optimal debulking was 42(56.8%) in PDS versus 27(79.4%) in NACT group i.e., statistically significant (p value 0.01).Duration of surgery, estimated blood loss > 1500 ml and ICU stay were not statistically different. Rate of Urinary tract, bowel injury and bowel resections were also similar. The results revealed a comparative outcome of NACT with PDS (median survival 30 M vs. 32 M) with comparable post-operative adverse effects. Similarly there was no difference in the progression free survival in both groups. (25 M in PDS vs. 21 M in NACT respectively).

*Conclusions:* NACT followed by interval debulking has got comparable survival rates and perioperative complications and can be safely considered in a select group of patients.

*Keywords:* Ovarian epithelial cancer, chemotherapy, Survival Analysis



### 7.7

#### SELECTIVE LYMPHADENECTOMY IN ENDOMETRIAL CANCER: RETROSPECTIVE ANALYSIS OF MORBIDITY AND SURVIVAL DATA AT A TERTIARY CARE CENTER

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**Objectives:** The objective of the study was to analyze peri-operative morbidity and survival data in patients with early stage endometrial cancer who underwent selective lymphadenectomy as compare to those who did not underwent this procedure.

**Methods:** Retrospective analysis of 180 patients with early stage endometrial carcinoma treated between 1999 and 2008 in Aga Khan University Hospital, Karachi was performed.

**Results:** Total of 180 patients were analyzed. Selective lymphadenectomy group had 108 women (60%) and the group without lymphadenectomy had 72(40%). Median number of lymph nodes removed was 9. The mean age and extent of the disease as assessed by staging, size of tumor, invasion of myometrium and lymphovascular invasion were comparable in both the groups. Upstaging of disease to stage 3 and 4 was observed in 11% of patients in the lymphadenectomy group. There was no significant difference in medical and surgical complications in both the groups. At a median follow up of 26 months both groups had comparable survival (34 vs. 32 months). Similar results were obtained when patients having more or less than 5 pelvic lymph nodes removed were compared.

**Conclusion:** Selective lymphadenectomy offers an advantage of better surgical staging but no therapeutic benefit in term of improvement in overall survival.

**Keywords:** endometrial cancer, lymphadenectomy, survival

### 7.8

#### CLINICO-PATHOLOGICAL PROFILE AND OUTCOMES OF PATIENTS WITH POLYCYTHEMIA VERA, ESSENTIAL THROMBOCYTHEMIA AND IDIOPATHIC MYELOFIBROSIS: A TERTIARY CARE CENTER EXPERIENCE FROM SOUTHERN PAKISTAN

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**Introduction:** The “Philadelphia Negative Classic Myeloproliferative Neoplasms” include polycythemia vera (PV), essential thrombocythemia (ET) and idiopathic myelofibrosis (IMF). These three disorders share several clinical and laboratory features including JAK2 V617F mutation.

**Objectives:** Our objectives were to determine the clinico-pathological profile and outcomes of Pakistani patients with polycythemia vera (PV), essential thrombocythemia (ET) and idiopathic myelofibrosis (IMF) in order to have an insight regarding behavior of these conditions.

**Methods:** A retrospective analysis of all the cases of PV, ET and IMF diagnosed at our institute from January 1995 to December 2013 was performed. Age, gender, clinical presentation, laboratory investigations, treatment provided and duration of follow-up were included for analysis. Appropriate statistics were utilized for calculation of data.

**Results:** A total of 58 patients were diagnosed as PV, ET or IMF during the study period. Male to female ratio was 1.1:1. Forty five percent (n=26) patients came to medical attention due to abnormal laboratory results, 3 had cerebrovascular events, 3 had pruritis, and 1 patient each with gangrene and Budd-Chiari syndrome. Hemorrhage was not seen in any patient. Sixty percent (n=35) patients were treated with phlebotomy, hydroxyurea and aspirin alone or in combination. None of the patients transformed to myelofibrosis (MF), myelodysplasia (MDS) or acute myeloid leukemia (AML) during the mean ( $\pm$ SD) follow-up period of  $57.2 \pm 50$  months.

*Conclusions:* This study demonstrated a relatively more benign form of PV, ET and IMF with lesser frequency of symptoms, good response to treatment and less likelihood of transformation to MF, MDS or AML.

*Keywords:* Polycythemia Vera, Essential thrombocythemia, Idiopathic Myelofibrosis

## 7.9 ALEUKEMIC MYELOID SARCOMA OF THE BREAST: A CASE REPORT

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Myeloid sarcoma is a solid collection of leukemic blast cells outside bone marrow. It is seen infrequently in association with overt acute myeloid leukemia (AML) however, it invariably transforms into this aggressive condition. A-28-year old woman presented with history of lump in left breast for last two years. Morphological and immunophenotypic results of breast mass were consistent with myeloid sarcoma. Bone marrow aspirate and biopsy were normal however, patient died after one and a half years of diagnosis. Myeloid sarcoma at any extramedullary site heralds development of overt acute myeloid leukemia and should be appropriately managed at the time of diagnosis. Literature review revealed primary myeloid sarcoma as an uncommon diagnosis that is frequently missed and primary breast myeloid sarcoma without pre or coexisting myeloid neoplasm is an even more rare entity.

*Keywords:* Myeloid sarcoma, Breast, Acute myeloid leukemia

## 7.10 BEYOND BIOCHEMICAL MEDICINE: ANALYZING THE PSYCHOSOCIAL AND PSYCHOLOGICAL CORRELATES OF PATIENT POST-BREAST CANCER TREATMENTS

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*Background & Objectives:* Lengacher et al. (2008) mentioned that cancer has affected 214,640 women in the United States and unfortunately 40,970 will die from this disease.

*Purpose:* To scrutinize the effect of breast cancer on the patient and their family and correlate it with contemporary literature.

*Methods:* Systemic review of literature from 11 research articles from 1999 to 2014 was conducted through electronic medium by using JPMA, SAGE and Google search engines.

*Results:* The patient showed psychological symptoms such as depression, anxiety, chronic sorrow, feelings of sadness, anger, confusion, fatigue related to surgery, helplessness and hopelessness, this is also evident in a study where 85% of breast cancer population, showed similar symptoms (Kim et al., 2010). Compas & Luecken (2002) revealed that psychological distress and elevated negative emotions are allied with breast cancer. Kim et al. (2010), Armento & Hopko (2009) and Al-Azri et al. (2009) listed supportive psychotherapy, cognitive restructuring, relaxation training, problem-solving and social skills training as certain psychosocial interventions. It has been suggested by Lee et al. (2011) and Harding & Higginson (2003) that it is often imprecise that who the patient is. However, to place the caregivers' view upfront brings about challenges in palliative settings.

*Conclusion:* In order to alleviate emotional distress and to amplify coping mechanisms, sessions of problem solving therapy is empirically recommended to accommodate the needs. As oncology nurses it is further recommended to counsel women with breast cancer as it would persuade them to verbalize and reflect their feelings pertaining to their experiences.

**Keywords:** Breast cancer, psychological distress, oncology nurses

### 7.11 DEFINING THE FREQUENCY WITH DEMOGRAPHIC IMPORTANCE OF COMPOUND HETEROZYGOSITY WITH THALASSEMIA MINOR

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**Introduction:** Compound heterozygosity is the condition of having two heterogeneous recessive alleles at a particular locus that can cause genetic disease in a heterozygous state. Sickle/β-Thalassemia is a mild form of sickle cell disease, a person having Sickle/β thalassemia can have a normal life style with regular checkups. HbD/β-Thalassemia is co-inheritance of the gene for hemoglobin D and beta-thalassemia, accompanied by mild-moderate anemia. HbE/β-thalassaemia is the genotype responsible for approx one-half of all severe beta-thalassaemia worldwide and so the most common in Southeast Asia with carrier frequency is around 50%.

**Objective:** The objectives of present study is to define the frequency with demographic significance of compound heterozygosity with thalassemia minor for local population Place & Duration of study: The study was conducted from January-June 2014 at the Hematology dept, Clinical Lab AKUH. Patients and **Method:** Total number of patients referred for the Hemoglobin electro-phoresis (HbEL) Test were n=7872 out of which n=70 patients had β-thalassemia carrier state.

**Results:** In our study the most common disorder was Sickle Beta thalassemia (77%), followed by Hb E/β-thalassaemia (14%) & HbD/β-Thalassemia (9%). The percentage occurrence in different geographical regions of Pakistan during 2014 is highest in Balochistan province and lowest in the central Punjab province.

**Conclusion:** This study concludes sickle β-thalassemia is the most common type among the

local population and is prevalent in Baluchistan province of Pakistan.

**Keywords:** Compound heterozygosity, Thalassemia, Frequency

### 7.12 PALLIATIVE CARE, A CONCEPT OF CARING WITH CARE: A LITERATURE REVIEW

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**Background:** According to most literature worldwide, and by World Health Organization (2014), Palliative Care is defined as active total care of the patient whose disease is not responsive to curative treatment. Its aim is to get the highest Quality of Life for patients and their families. Palliative care helps patient with life limiting conditions such as in multiple organ failure, sudden catastrophic events, progressive conditions e.g. cancer and permanent vegetative states; to live as well as possible until they die and to die with dignity.

**Objective:** To summarize earlier researches and indicate the concept of caring with care, its benefits and obstacles.

**Method and Materials:** Systemic review of literature from research articles from 2013-14 was done, on the provision of end of life that is palliative care. And commentary on its positive features and barriers encountered along.

**Conclusion:** Barriers to this care arise when a referral for Palliative Care is given against foregoing active treatments or due to inadequate communication of diagnosis and prognosis by clinicians with the family who is in denial phase due to fear of losing a family member. This communication gap lead to lack of trust for the health care organizations and patient loses hope. The issue of location of palliative care services, mainly perceived as being urban-based, highlights the needs of more rural dwellers, for greater transportation services to be available. Debate also arises on preferred place of care and death; home being forerunner for most terminally ill patients. On

the contrary some health care providers view symptom control as a good framework for Palliative Care not limited solely to physical pain or disease oriented issues but also psychological, emotional, and social problems. They believe good communication skills are important aspect, and access to palliative care services can be increased by greater collaboration with generic and specialist services working as one in the referral process (McIlpatrick et al., Palliative Care 2013).

*Keywords:* Palliative, Care, Barriers

### 7.13

#### GLIOSARCOMA: CASE SERIES FROM A TERTIARY CARE HOSPITAL IN PAKISTAN

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*Aims:* Gliosarcoma is a rare CNS neoplasm with a few cases reported from Pakistan. We aim to see the features and outcomes of this rare entity in Pakistan.  
*Methods:* A retrospective case-series conducted at the Department of Neurosurgery, Aga Khan University. The medical record files of surgically treated patients with Gliosarcoma from 2003 – 2012 were reviewed, MRI/C.T scans and Histopathological slides were reviewed. Patients lost to follow-up were contacted. Analysis was done on SPSS 20.

*Results:* A total of 7 cases of Gliosarcoma were found. The median age was 52 years with a male:female of 5:2. The symptoms included Headache 71%, hemiparesis 43%, dysphasia, forgetfulness and dysphagia 29% patients. KPS was >70 in 4 and <70 in 3 patients.

Five patients had tumor in Temporal lobe. MRI showed Hypointense signals in 2, iso-intense in 2 and hypo-iso-intense signals in 2 cases on T1-weighted images and hyperintense in 5 cases on T2-weighted images. Solid tumor was seen in 5 patients, features of necrosis was seen in

4, hemorrhage in 3 cases. Mass effect was seen in 3 cases. Contrast enhancement was seen in 6 cases. Gross-total resection was done in 3, Sub-total resection in 2 cases and biopsy in 2 cases. Recurrence was found in 6 patients. Repeat surgery was done in 3 patients, 6 underwent chemo+radiotherapy. Six patients died of the disease.

The median Progression Free Survival was 2 months (range 1-6 months), median Overall survival was 6 months (3- 13 months).

*Conclusion:* Gliosarcoma is a significantly aggressive tumor in Pakistan

*Keywords:* Gliosarcoma, Overall survival, progression free survival

### 7.14

#### ROLE OF CD10 IMMUNOHISTOCHEMICAL EXPRESSION IN PREDICTING AGGRESSIVE BEHAVIOUR OF PHYLLOIDES TUMORS

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*Introduction:* Phylloides tumors are rare breast neoplasms with variable clinical course depending on tumor category. Along with histologic features, the role of immunohistochemical stains have been studied in predicting the behavior of these tumors.

*Objectives:* Our aim was to evaluate the role of CD 10 immunohistochemical stain in predicting the survival, recurrence and metastasis in phylloides tumor. We also evaluated the correlation of other clinicopathological features with overall and disease-free survival.

*Methodology:* CD10 expression was studied in 82 Phylloides tumors divided into recurrent/metastatic and non-recurrent/non-metastatic cohorts. Chi-square test was applied to determine the significance of difference in CD10 expression between outcome cohorts. Uni and multivariate survival analysis was also performed using log-rank test and Cox regression hazards model.

**Results:** All 3 metastatic cases, 5 out of 6 (83.3%) recurrent cases and 37 out of 73 (50.7%) non-recurrent and non-metastatic cases expressed significant (2+ or 3+) staining for CD10. This expression significantly varied between outcome cohorts ( $P < 0.03$ ). Tumor category and histological features including mitotic count and necrosis correlated significantly with recurrence and metastasis. A significant decrease in overall and disease free survival was seen with CD10 positivity, malignant category, increased mitoses and necrosis. Neither CD10 expression nor any other clinicopathologic feature proved to be an independent prognostic indicator in multivariate analysis.

**Conclusion:** CD10 immunohistochemical staining can be used as a predictive tool for phylloides tumor but this expression should be interpreted in conjunction with tumor category

**Keywords:** CD10, Phylloides Tumors, Immunohistochemistry

## 7.15

### EFFECTIVENESS OF MALE PARTNER SCREENING HEMOGLOBINOPATHIES IN COUPLES ATTENDING ANTENATAL CLINICS

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**Introduction:** The screening of individuals for carriers of beta-thalassemia can identify couples with a 25% risk of having a pregnancy with beta-thalassemia. Pre-natal diagnosis has significant effect in reduction of beta-thalassemia birth.

**Aim:** The aim of this study was to determine the effectiveness of male partner screening in couples having 1st antenatal check-up in antenatal clinic of Karachi. Study Design Cross-Sectional Place and Duration Omair Sana Foundation, Patients and

**Methods:** Total 136 husbands were screened for beta-thalassaemia trait. A blood sample of 8 ml was

collected and hematological parameters like Hb, MCV, MCH, Hb A2, HbD, Hbf/s were tested. Osmofragility test were also performed to measure Rbcs resistant hypotonic solution (0.36N). DNA mutation was also performed to confirmed beta-thalassaemia trait in suspected cases.

**Results:** Mean age of the husbands was  $30.65 \pm 5.17$  years. Consanguinity was found in 79 (58.08%) husbands. Median Hb level was 14.30 (13.50-15.30). Only 20 (14.7%) were anaemic. Mean MCV was  $88.08 \pm 7.22$  and mean MCH was  $27.88 \pm 2.74$ . Soft test was performed in 105 (77.20%) husbands, among them 18 (17.14%) were found positive. Mean HbA2 was  $2.03 \pm 1.13$ . 1 (0.73%) husband was confirmed with  $\beta$ -thalassaemia minor trait having fr-89 mutation whereas Hb d trait was found positive in 3 (2.21%) husbands with HbD range from 37.10 to 40.80. on other hands their spouses had normal genetic mutations.

**Conclusion:** Hemoglobinopathies was observed in 4 (2.94%) in our cohort. Male partner screening for hemoglobinopathies was found sensitive and specific method along with cost effective and time effective alternative to females.

**Keywords:** Husband screening, , hemoglobinopathies, antenatal clinics

## 7.16

### CHALLENGES AND PITFALLS IN DIAGNOSIS OF PAROSTEAL OSTEOSARCOMA, A CLINICOPATHOLOGIC STUDY OF 23 CASES

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**Introduction:** Parosteal Osteosarcoma (PO) is an uncommon variant of osteosarcoma. Diagnosing PO is important due to its malignant nature but the diversity of histologic features makes it challenging by adding a number of soft tissue, bony and cartilaginous lesions into the list of differential diagnosis. **Objective:** Our aim was to study the

clinicopathologic and histological features of PO with emphasis on features helpful in its discrimination from other mimicking lesions.

**Methodology:** We reviewed H&E stained glass slides of 23 cases of PO diagnosed in our institution between January 2001 and August 2014.

**Results:** Femur was the most commonly involved bone (68.2%) along with other long bones and rib in a single case. Soft tissue component was graded as Grade1 in 9(39%), Grade2 in 8(34.7%), Grade3 in 4(17.3%) cases. Bony component was seen either in combination of or exclusively as parallel streams and interconnected trabeculae (mosaic-pattern). Out of 9 cases with cartilage component, 3 showed a cartilage cap. 2(8.6%) cases showed dedifferentiation into osteosarcoma.

**Conclusion:** PO should always be considered in the differential diagnosis of every lesion arising from the bone surface. Knowledge of the variations in histologic features helps to reach the correct diagnosis which should never be made without radiological correlation.

**Keywords:** Parosteal, Juxtacortical, Osteosarcoma

### 7.17

#### OLFACTORY NEUROBLASTOMA; A CLINICOPATHOLOGICAL EXPERIENCE OF 36 CASES WITH SPECIAL EMPHASIS ON DIFFERENTIAL DIAGNOSIS

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**Introduction:** Olfactory neuroblastoma (ONB) is a rare but distinct malignant neuroectodermal tumor of sinonasal tract which mimic a number of other neoplastic lesions of the region. (Add Differential diagnosis)

**Objective:** Our aim was to present clinicopathological experience of ONB with emphasis on staging, grading and role of histopathological and immunohistochemical features in discrimination from the closely resembling entities.

**Methods:** We retrieved and reviewed 36 cases of ONB from surgical pathology database of Aga Khan University Hospital reported between January 1993 and June 2014.

**Results:** Tumor size and age of presentation was wide in range without any distinct bimodal distribution. Nasal cavity was the most common site along with involvement of paranasal sinuses. More than half of cases had Kadish stage A. Microscopically, most cases were grade 1 and majority showed partial or complete lobular architecture. Neurofibrillary matrix was observed in 2/3rd of cases. Among immunohistochemical markers, Neuron Specific Enolase was most frequently expressed. Unusual positive expression of Cytokeratin AE1/AE3 and Cytokeratin CAM5.2 was also seen focally in few cases. **Conclusions:** ONB is a very rare tumor in our experience and has great variability of histological presentation, hence warranting immunohistochemical markers' use to differentiate from more common small round blue cell tumors of nasal cavity.

**Keywords:** Olfactory Neuroblastoma, Grade, Immunohistochemistry

### 7.18

#### LEVEL OF KNOWLEDGE OF BETA-THALASSEMIC PATIENTS REGARDING THEIR DISEASE IN KARACHI, PAKISTAN

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**Introduction:** Beta thalassemia is a major public health problem in Pakistan. Adequate knowledge about disease in patients helps them manage their treatment better with more compliance.

**Aim:**The aim of study was to assess level of knowledge of thalassemic patients regarding thalassemia. Study design Cross-sectional Place and duration: Hospital? Karachi 1month

**Patient and Methods:** 126 thalassemia patients were interviewed through a structured pretested questionnaire, while 90 were analyzed. Data was

entered and analyzed in SPSS 19. Knowledge questions were scored with 0 if incorrect and 1 if correct. Cumulative knowledge score was computed. It was categorized into adequate and inadequate knowledge level with cutoff 9 for analysis. Descriptive and inferential statistics were computed.

**Results:** Median age of patients was 20years(12-32years), median age at diagnosis was 0.58years(0-11years) and mean duration of disease was 18.27 ±4.3years. Only 8% patients had adequate knowledge while 92% had inadequate knowledge. Only 43.2% knew about three types of thalassemia, 42% knew thalassemia is an inherited disease, 90.3% of them knew it is inherited from both parents, 72.9% knew that two minors can produce thalassemia major child, 61.6% think thalassemia is preventable. 53(58.9%) knew about iron chelation while only 11(12.2%) knew BMT as a curative option. Mean duration of disease of patients having adequate knowledge is 22.25±2.6 years that is significantly more than that of those having inadequate knowledge 17.98±4.2 years(p <0.05).

**Conclusion:** Patients had low level of knowledge however it is improving and can be improved by continuous health education programs.

**Keywords:** Beta-thalassemia, knowledge, patients

## 7.19

### INFERIOR VENA CAVA FILTERS IN CANCER PATIENTS: INDICATIONS AND OUTCOME

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**Introduction:** Cancer and its treatment are recognized risk factors for venous thromboembolism (VTE). Around 15% of cancer patients may present with VTE making it the second major cause of death among these patients. Inferior vena cava (IVC) filters are utilized to provide mechanical thromboprophylaxis to prevent pulmonary embolism (PE) or to avoid bleeding from systemic anticoagulation.

**Objective:** Our experience with IVC filter placement in cancer patients with venous thromboembolism was reviewed to identify indications, patient characteristics, complications, and long-term outcome. **Methodology:** A retrospective analysis of 42 patients with active cancer (irrespective of age and gender) who received IVC filters placement and followed up at our institution was performed between January 2012 and January 2014.

**Results:** Of 42 cancer patients with IVC filter placement, 23(55%) were women and 19(45%) were men. Median age was 59 years (range, 23 to 85). All received permanent IVC filter placement. Most common cancer was of female genital tract 11 (26%) and colon 7 (17%), followed by cancer of prostate 5(12%), central nervous system 4(10%), urinary bladder 4(10%), leukemia/lymphoma 3(7%), bones 3(7%), lungs 2(5%), renal 1(2%), sarcoma 1(2%) and germ cell tumor 1(2%). A deep venous thrombosis (DVT) was diagnosed in 32 patients (76%), a PE in 6 patients (14%), and both DVT and PE in 4 patients (10%). Indications for IVC filter placement were DVT or PE in the presence of contraindications to anticoagulation therapy includes renal failure, n = 4; thrombocytopenia, n = 2; bleeding, n = 1; liver failure, n = 1 and presence of more than one of these contraindications, n= 10. The remaining 24 patients had no apparent contraindication to anticoagulation. After filter placement, 2 patients developed a recurrent DVT and 4 patients died of cancer related complication. Filter placement complications like migration, filter fracture, bleeding and wound infection was not seen in any of the patients with a median follow up of 70 days. **Conclusion:** IVC filter placement in patients with cancer and thromboembolism is safe, well tolerated, and can offer effective therapy/prophylaxis with a low incidence of treatment failure.

**Keywords:** Inferior vena cava filters, cancer, thromboembolism

## 7.20

### DISTRIBUTION AND TYPES OF EGFR MUTATIONS IN PAKISTANI LUNG ADENOCARCINOMA FOR PREDICTING RESPONSE TO TARGETED THERAPY

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*Objective:* Screening for EGFR mutations in tumor tissue of NSCLC patients by Cobas EGFR mutation detection assay.

*Introduction:* In lung cancer, the discovery of acquired genetic alteration in EGFR has changed the way it is currently being treated. EGFR mutation screening has become imperative for the selection of metastatic NSCLC patients eligible for targeted treatment. This report presents distribution of EGFR mutations in 231 NSCLC patients.

*Methods:* EGFR mutation in tumor samples was screened by multiplex real time PCR (Roche Diagnostics, USA) according to the manufacturer's instructions. Briefly, DNA from FFPE tissue, obtained from Histopathology section, was extracted and amplified with primers and probes specific to 43 different EGFR mutations provided with the EGFR kit Cobas z 480 instrument. The assay can detect 43 mutations in four exons (18-21) of EGFR gene, including several point mutations, deletions and insertions.

*Results:* Out of 231 patients tested (June 2013 to February 2015), 152 were male and 79 were females; male to female ratio was 2:1. The mean age of the patients was 62 years and age distribution was between 23 and 85 years. On the basis of immunohistopathological finding tumors were categorized into two groups; well to poorly differentiated primary lung adenocarcinoma 178 (77%) and metastatic adenocarcinoma of primary lung origin 53 (23%). EGFR mutation del 19(54%) was detected in 31 patients, it is short in-frame deletion in exon 19, clustered around the amino acid residue 747-750 and whereas Exon 21 L858R substitution was found in 24(42%) patients. In one patient compound mutation, [S768I and G719X] was detected. Moreover, in another patient insertion

in Exon 20 was observed. EGFR mutations were found more in male (65%) than female (34%) patients although in published literature female preponderance was significant.

*Conclusion:* Our study showed del 19 and L858R were the most frequent mutations in Pakistani lung cancer patients. In additions, 25% of the patients were found eligible for tyrosine target inhibitor based therapy.

Keywords: EGFR, NSCLC, Mutations

## 7.21

### SIGNIFICANCE OF MULTIPLEX LIGATION-DEPENDENT PROBE AMPLIFICATION TECHNIQUE FOR DIAGNOSIS OF ALPHA THALASSEMIA

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*Background:* Alpha-thalassemia is an inherited disorder of  $\alpha$ -globin gene, located on chromosome 16p13.3. There is two functional  $\alpha$  genes present on each chromosomes. Individual having mutation in one allele of  $\alpha$ -globin gene are said to have  $\alpha$ -thalassemia trait. Carriers of  $\alpha$ -thalassemia have either a silent hematologic phenotype or present with a moderate thalassemia-like hematologic picture. Compound heterozygotes and some homozygotes for  $\alpha$ -thalassemia have moderately severe anemia characterized by presence of hemoglobin H disease. MLPA is a multiplex assay is used for the detection of deletion or duplication in  $\alpha$ -globin gene and it can detect common and rare  $\alpha$ -thalassemia mutation.

*Objectives:* To study distribution of deletions in  $\alpha$ -globin, in the local population using Multiplex Ligation-dependent Probe Amplification (MLPA) method.

*Method:* MLPA was performed on DNA obtained from white blood cells. The protocol consisted of five steps spread on two days. DNA denatured and overnight incubated, with MLPA probes on the first day. Next day, ligation of gene specific probes PCR



amplification, Capillary Electrophoresis and Interpretation of data was performed.

**Results:** A total of 30 cases including 13(43%) females and 17(57%) males were examined. Their mean age was 26 years. Out of 13 female samples, one was  $\alpha$ -3.7 kb deletion positive, whereas, 12 were normal. Three samples from male patients were  $\alpha$ -3.7 kb deletion positive. While in two male patients deletion of  $\alpha$ -4.2 kb deletion was detected. Occurrence of  $\alpha$ -3.7 kb deletion was highest (67%) in patients belonging to the age group 27 years followed by  $\alpha$ -4.2 kb deletion (33%).

**Conclusion:** MLPA simplifies detection of mutations in  $\alpha$ -thalassemia. Amplification and detection of multiple targets can be performed in a single assay. It is a powerful tool for diagnosis of complex disorders.

**Keywords:** MLPA,  $\alpha$ -thalassemia, PCR.

## 7.22

### REAL TIME PCR ANALYSIS OF BRAF V600E MUTATION IN PAPILLARY THYROID CARCINOMA

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**Introduction:** BRAF is the most important member of raf protein family. The most common mutation seen in BRAF is V600E i.e. substitution at position 600, of valine (V) to glutamic acid (E). It has been detected in significant proportion of Papillary Thyroid Carcinomas (PTC) where it is associated with aggressive outcome. Vemurafenib is targeted against V600E mutated protein and has shown improved disease control.

**Objective:** To detect BRAF V600E mutation in Papillary Thyroid Carcinoma by real time PCR, which could be used as a potential marker for targeted therapy.

**Material and Methods:** After review of H&E glass slides at Histopathology section, 5 cases of classical PTC were included. Inclusion criteria for PTC were presence of nuclear features and papillary

architecture. Paraffin embedded tissue blocks with at least 30% of tumor were selected for mutation analysis. BRAF mutation was detected by real time PCR Light cycler 480 (Roche Diagnostics, SZ) at Molecular Pathology section. After extraction, DNA was subjected to amplification using Entrogen BRAF codon V600E mutation detection kit.

**Results:** V600E mutation was detected in all 5 classical PTC cases. Patients' age ranged from 22 to 60 years (median age 29 years) and tumor size ranged from 1.8 to 6.5 cm (median size 2.1 cm). Extrathyroidal extension was seen in one case. Nodal metastasis was seen in one out of two cases for which lymph node dissection was performed.

**Conclusion:** BRAF V600E mutation is frequently seen in our PTC patients and it can be used as a potential marker for targeted therapy.

**Keywords:** BRAF, Papillary thyroid carcinoma, V600E mutation

## 7.23

### SUCCESSFUL RESECTION OF GIANT MEDIASTINAL TERATOMA WITH INTRA-PERICARDIAL EXTENSION

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We present a case of 17 yr old boy who was diagnosed to have germ cell tumor which was treated with six cycles of chemotherapy. Post chemotherapy, he was found to have a large 17 cm mediastinal mass abutting the heart, great vessels and distal trachea. There was no cardiac effusion but the tumor was involving the great vessels. The tumor markers had normalised.

Via median sternotomy, the mass was found to be adherent to all great vessels and especially left pulmonary artery. The tumor completely removed without any complications. The postoperative course was unremarkable. The histopathology showed it to be a mature teratoma. This case represents rare transformation of germ cell tumor

into such a sizeable teratoma with no evidence of viable germ cell tumor.

Keywords: teratoma, cardiac, germ cell

#### 7.24

#### SUCCESSFUL TREATMENT OF SOLITARY FIBROUS TUMOR OF THE DIAPHRAGMATIC PLEURA ERODING INTO PULMONARY ARTERIAL BRANCH OF INFERIOR BASILAR SEGMENT AND CAUSING MASSIVE INTRA-LOBAR HEMORRHAGE

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A 60 yr old gentleman presented with one week history of cough and was found to have a mass in the left chest. CT Scan showed 7x 8 cm pleural based mass in the lower left chest which was abutting the diaphragmatic surface of the left lung which was otherwise normal. Patient was scheduled for further tests but he again presented to the emergency with massive hemoptysis and shortness of breath. The chest X-ray was repeated which showed near complete opacification of the left chest. He was immediately transferred to the Operating room and via left thoracotomy the chest was opened. The pleural based tumor had invaded the pulmonary artery of the inferior basilar segment and had led to massive hemorrhage into the left lower lobe. Left lower lobectomy was urgently performed along with excision of the pleural based tumor arising from the left hemi-diaphragm. Patient had an uneventful postoperative course. The tumor was found to be solitary fibrous tumor of the pleura.

Keywords: tumor, thoracic, pleura

#### 7.25

#### SUCCESSFUL RESECTION OF GIANT GANGLIONEUROMA WITH INFERIOR VENA CAVA COMPRESSION IN A 5 YEAR OLD CHILD

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A 5 year old boy presented with upper abdominal and right lower chest pain. On evaluation with Chest CT Scan, he was found to have a large 16 x 14 cm posterior mediastinal mass which was compressing the IVC and liver and shifting the heart to opposite side. Biopsy of the mass showed ganglioneuroma. Via right poster lateral thoracotomy, Tumor was approached. It was dissected off from esophagus, heart, inferior vena cava and lungs. The entire tumor was resected without any complications. Postoperative course was unremarkable. Successful resection of this tumor was done via right postero-lateral thoracotomy. The histopathology showed it to be giant Ganglioneuroma with no evidence of malignancy. This is an unusual case because benign tumor of this size of neurogenic origin in a child is extremely rare.

Keywords: ganglioneuroma, thoracic, mediastinum

#### 7.26

#### LARGE PLEURAL EFFUSION- UNUSUAL PRESENTATION OF CYSTIC SCHWANOMA

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A 50 yr old man presented with shortness of breath and recurrent left sided pleural effusions. CT Chest showed massive left sided pleural effusion with mass in posterior mediastinum. Biopsy ( ? tru cut biopsy or VATS)of the mass was inconclusive. Pleural tap showed lymphocytic exudate. Left posterolateral thoracotomy was performed which

showed a large (size?) posterior mediastinal mass with adherent lung. The mass was completely excised and the histopathology proved it to be giant cystic schwannoma. The pleural effusion never recurred after the tumor resection.

*Keywords:* pleural, thoracic, schwannoma

### 7.27

#### YOUNG FEMALE WITH CARCINOID TUMOR OF LUNG REQUIRING PNEUMONECTOMY

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*Introduction:* Lung carcinoids are the slow type of tumors that starts in the lungs and are formed by neuroendocrine cells. About 1% to 2% of all lung cancers are carcinoids. Only about 3 out of 10 carcinoid tumors start in the lungs. Most of the tumors are centrally located. We present case of a young lady with hemoptysis treated with pneumonectomy.

*Case:* 23 year old lady, student, resident of Hyderabad. She was in her usual state of health 5 year back then she started having cough, productive of yellow coloured sputum, weight loss was positive, no history of fever. No family history of tuberculosis. Being treated as pneumonia with antibiotics, cough persisted and later started having hemoptysis. Treated for 8 months with antituberculous drugs, hemoptysis settled but dry cough persisted, CT Chest done which showed a mass in right main bronchus. Bronchoscopy showed large right sided endobronchial mass occluding right main bronchus, Biopsy and lavage taken. Histopathology was inconclusive. Thoracotomy done which showed large mass in right main bronchus with bronchiectatic lung, underwent right pneumonectomy. Histopathology revealed well differentiated neuroendocrine tumour (carcinoid tumour). Patient remained symptomatically well and later discharged home.

*Discussion:* Bronchial carcinoid tumors are an uncommon group of pulmonary neoplasms formed by neuroendocrine cell that have migrated from the

embryologic neural crest. Bronchial carcinoids typically presents in late adolescence. Surgery is the mainstay of treatment.

*Conclusion:* Carcinoid tumors are potentially curable. The management requires multidisciplinary care. 5-year survival is excellent and the prognosis of operated patients is very good.

*Keywords:* carcinoid tumor, neuroendocrine cells, bronchiectasis.

## **Health Sciences Education**

## 8.1 COMMON PRESCRIPTION DRUGS INTERACT WITH FOOD - REVIEW

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*Introduction:* Food-drug interaction is a big health concern as it commonly effect on bioavailability of the drug and may enhance or reduce drug effect leading to treatment failure or adverse reactions (very rarely beneficial effect). While on drug treatment, special care in food consumption is required to avoid potential clinical problems. This review focuses on potential risk of daily consumed food interacting with certain drugs and producing untoward clinical consequences.

*Objective:* To highlight important food-drug interactions associated with clinical consequences and help health professionals for better therapeutic use of drugs.

*Methods:* Bibliographic search was carried out from available data using PubMed, Ovid, and Google etc. Most important and commonly reported interactions were selected and verified by related articles.

*Results:* Commonly prescribed drugs interacting with food are follows: Drugs taken with: Empty stomach: • Azithromycin and isoniazid Meal: • Glimepiride, NSAIDs and Lovastatin Drug interaction with: Fruits: • Grape fruit interacts with psychotropic drugs, theophylline, calcium channel antagonists, diazepam, HMG-CoA reductase inhibitors, immunosuppressant, antivirals and antibiotics. • Seville orange interacts with glibinclidide, estrone-3-sulfate, atenolol and celeprolol. • Tomatoes help in toxic drug metabolites excretion. • Cranberry Interacts with warfarin Dairy products: • Milk interacts with mercaptopurine, ciprofloxacin and tetracycline. • Yogurt and cheese interacts with MAO inhibitors. Xanthine containing products: • Tea, chocolate, coffee enhances theophylline toxicity. Green leafy Vegetables: • Interacts with warfarin

*Recommendations/Conclusion:* Health professionals should extend their knowledge about potential health problems associated with food-drug interaction and explain patients about interactions

while prescribing/dispensing drug to avoid unusual clinical hazards. Drug-food interaction leaflet could be useful for patient safety.

*Keywords:* Food-Drug interaction, clinical consequences, Bioavailability

## 8.2 A VALIDITY STUDY OF STANDARD SETTING METHODS FOR PASS/FAIL DECISIONS ON HIGH STAKES OBJECTIVE STRUCTURED CLINICAL EXAMINATIONS

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*Objective:* The purpose of the study is to investigate the validity of standard setting methods on high-stakes objective structured clinical examinations (OSCEs) by comparing the commonly used methods with each other and with cluster analysis as an empirical, objective method.

*Methods:* The thirty OSCE stations administered at least twice in the years 2010-12 to a total of 393 medical students in Years 2 and 3 at Aga Khan University Medical College are included. The psychometric properties of the scores are determined. The cutoff-scores and pass/fail decisions of the Wijnen, Cohen, mean-1.5SD, mean-1SD, Angoff, borderline group (BL-G) and borderline regression (BL-R) methods are compared with each other and with three variants of cluster analysis using repeated measures ANOVA and Cohen's kappa.

*Results:* The mean values of psychometric indices on the thirty OSCE stations are: reliability coefficient, 0.76 (SD=0.12); standard error of measurement, 5.66 (SD=1.38); coefficient of determination, 0.47 (SD=0.19); and intergrade discrimination, 7.19 (SD=1.89). The Cohen's kappa values range from 0.32 between M-1.5SD and three cluster regression, to 0.85 between BL-G and BL-R methods.

*Conclusions:* The BL-R and Wijnen methods show highest convergent validity evidence among other

methods. Angoff and Mean-1.5SD demonstrated least convergent validity evidence. The three cluster variants showed substantial convergent validity with borderline methods. The Wijnen method lacks theoretical strength to be used for competency-based assessments. The BL-R is found to be the preferred standard setting method for OSCEs. The three cluster mean method can be used for quality assurance of the cutoff-scores set by borderline methods.

*Keywords:* Standard Setting, Clinical Skills Assessment, Psychometrics

### 8.3 PREVALENCE OF CONCOMITANT IRON DEFICIENCY IN PATIENTS WITH THALASSEMIA MINOR.

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*Introduction:* Iron deficiency is a condition resulting from depletion of body iron stores. It is the most common cause of anemia worldwide and mostly caused by poor intake of iron the diet or loss of iron due to gastro intestinal tract pathology or heavy menstruation etc. it range from depletion of iron stores without any functional abnormality to severe anemia and may involve other organs special in children because of increase growth requirements. It is characterized by hypochromic microcytic red cell indices along with evidence of absent iron stores directly assessed on bone marrow biopsy or indirectly by serum iron measurement.

Beta thalassemia trait or thalassemia minor is a carrier state of hemoglobin  $\beta$  – globin chain disorder known as thalassemia syndrome. It is characterized by hypochromic microcytic red cell indices with mild to moderate anemia (Hemoglobin not usually <9.0g/dl) on high performance liquid chromatography it shows Hb A2 of more than 3.5%. In Pakistan the prevalence of thalassemia minor has noted to be around 5.6%. The concomitant deficiency iron in this population is often over looked because of similar blood picture.

Therefore we conducted a study to evaluate the prevalence of concomitant iron deficiency in thalassemia minor patients.

*Patients and Methods:* Study setting: Section of hematology, Aga Khan University hospital.

Study duration: September- December 2014. Type of study: Retrospective cross sectional. Type of sampling: Purposive consecutive sampling. Data collection: Record of hemoglobin high performance liquid chromatography was reviewed and cases of thalassemia minor were identified and analyzed for their gender, age, hemoglobin levels, red cell indices and iron status (serum ferritin).

*Results:* Total 55 cases of thalassemia minor were identified during study period with female to male ratio 1.3:1. The mean age was 24.7 years and mean hemoglobin was 9.5 g/dl. The mean MCV and MCH was 61.1fl and 18.3pg respectively. Serum ferritin is low for age and gender reference limits in 27(49%) of patients. Of these iron deficient patients 63% were female. Mean hemoglobin in patients without iron deficiency was 9.5 g/dl (range 9-12.8) as compared to 9.3 g/dl (range 3.9-15 g/dl) in iron deficient patients. Mean MCV and MCH in patients without iron deficiency was 63.8fl and 17.5 respectively, while iron deficient population had mean MCV and MCH of 60.9fl and 16.9pg respectively.

*Conclusion:* Our study concluded that simultaneous iron deficiency is not an uncommon condition in our population of thalassemia minor patients. And if not timely identified it can cause severe anemia. So patients with thalassemia minor should not be overlooked for this and investigated for iron deficiency and also promptly treated

*Keywords:* Thalassemia minor, iron deficiency, ferritin level

#### 8.4 USING THE CTC TOOL IN ESTABLISHING MID-LEVELS OF EXPANDED OUTCOMES FRAMEWORK – A CME PROVIDER PERSPECTIVE

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Existing gaps in the quality of healthcare have led to calls for change by CME providers around the world to plan and evaluate continuing medical education activities based on improving physician competence and performance. This article offers the use of the commitment to practice change (CTC) tool at mid-levels of the Moore's expanded outcomes framework for inquiring and evaluating physicians' commitment to practice change, and for assessing the impact of the educational activity. Moore's expanded outcomes framework is designed to work in an extended fashion, to include practice and real world applications such as physician competence and performance (levels 4 & 5), and patient and population health (levels 6 & 7) after attaining the lower levels of the framework (level 3=knowledge, level 2=satisfaction, and level 1=attendance). The distinctive feature of the widely accepted CTC tool is that it 1) promotes a sense of responsibility and ownership among physician respondents with regard to their post-CME activity performance; 2) enhances their qualities of courage and resolve by giving them the confidence to do honest self-assessment; 3) makes them responsible for the changes they propose to make as a result of what they learned during the activity; and 4) somehow also assesses the level 5 (i.e. performance), as a post-follow-up design to assess compliance with the pre-statements or commitments, that is otherwise been assessed through performance improvement initiatives.

*Keywords:* Commitment to change, expanded outcomes framework, physicians

#### 8.5 WATCH:WARWICK ASSESSMENT INSTRUMENT FOR CLINICAL TEACHING: DEVELOPMENT AND TESTING

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*Objective:* Medical education and teaching skills are core competencies included in the generic curriculum for specialty training. To support the development of these skills, there is need for a validated instrument. This study aims to develop and test an instrument to measure the attributes of specialty trainees as effective teachers.

*Methods:* The study was conducted in two phases. In first phase, the content of the instrument was generated from the literature and tested using the Delphi technique. In second phase, the instrument was field tested for validity and reliability using factor analysis and generalizability study. Feasibility was calculated by the time taken to complete the instrument. Acceptability and educational impact were determined by qualitative analysis of written feedback. Attributes of specialty trainees were assessed by clinical supervisors, peers, and students.

*Results:* The Delphi study produced consensus on 15 statements which formed the basis of the instrument. In field study, a total of 415 instruments were completed. Factor analysis demonstrated a three-factor solution ('learning-teaching milieu', 'teaching skills', and 'learner-orientated'). A generalizability coefficient was 0.92. Mean time to complete the instrument was five minutes. Feedback indicated that it was an acceptable and useful method of assessment.

*Conclusion:* This new instrument provides valid, reliable, feasible, and acceptable assessment of clinical teaching.

*Keywords:* clinical teaching, instruments, trainees

## 8.6

### STUDENTS INTERACTION AND COGNITIVE ENGAGEMENT IN ONLINE DISCUSSIONS IN PROFESSIONAL DEVELOPMENT COURSE AT A PRIVATE NURSING INSTITUTION IN KARACHI, PAKISTAN

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In the post RN BScN curriculum, first time the course of “professional development and leadership (PDLM)” was offered as Blended mode. The team conducted a study for the first time in Pakistan at private nursing institution; to explore students’ interactions and cognitive engagement (CE) in Online Discussion Forums (ODFs), by utilizing the retrospective qualitative paradigm of discourse analysis to understand student’s CE in ODFs. All the course enrollees were invited to participate in the study; 24 of 81 students provided written consent to participate. The data was collected after the university’s ethical review committee’s clearance. Demographic data was collected with the researcher designed survey-monkey form online. The scripts of ODFs from two online modules (named as Module A & B) were used for this study, which were triangulated through Focus Group Discussions (FGDs). It is observed from the results that majority of the participants used statements type I which is responding to the direct questions, whereas, seeking clarifications (either question type I or II) was not much observed. Mentoring and Scaffolding are higher levels of CE, however, only less number of responses observed in both module A and B. Moreover, study participants reported high level of engagement with the positive role of faculty facilitation and felt more comfortable in participating through a virtual learning environment. It was recommended to set netiquettes, have sound training to those learners whose ICT skills need improvement and consider in-depth key informant interviews with each research participant soon after they have posted a comment on ODF, will bring more insight in understanding CE.

*Keywords:* cognitive engagement, online discussion forum, higher order thinking

## 8.7

### CORRELATION OF SELECTION SCORES WITH SUBSEQUENT PERFORMANCE IN ANAESTHESIOLOGY RESIDENTS AT A UNIVERSITY TEACHING HOSPITAL

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*Background:* The aim of specialty training programs is to select residents who perform well and develop into future experts. Selection criteria should thus be capable of predicting future performance. Several authors from North America have correlated selection criteria with performance getting varying results. Data from other parts of the world is scarce.

*Objective:* The objective of this study was to determine the correlation of resident selection scores (RSS) with subsequent performance in anaesthesiology residents at a university hospital.

*Methods:* Data were collected on 24 residents inducted between 2004 and 2007. RSS consisted of entrance test scores, medical school scores and interview scores. Assessment scores included written tests, viva voce and clinical assessment. Success in exit-level examination was also noted. Nonparametric spearman rank correlation coefficient was computed to assess the relationship between scores.

*Results:* No correlation was found between the overall RSS and assessment scores. Positive correlation was observed between cognitive component of selection score and cognitive assessment [ $p = 0.05$ ]. Positive correlation was also seen between interview scores and average clinical rotation scores ( $p = 0.037$ ). Success in exit level examination showed no correlation with RSS.

*Conclusions:* These results show that cognitive components of selection criteria predict performance in cognitive assessment but do not predict clinical performance while interview scores



have a positive correlation with clinical performance. The authors recommend that anaesthesiology training programs should develop structured, objective tools to strengthen selection criteria. Future research should focus upon identifying traits that are most useful in predicting subsequent performance of anaesthesiology trainees.

*Keywords:* Residents' selection, in-training performance, anesthesia training

### 8.8 ASSOCIATION OF VITAMIN D BINDING PROTEIN POLYMORPHISMS AND SERUM VITAMIN D IN MEDICAL STUDENTS: A PILOT STUDY

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*Objective:* The study objective was to estimate frequency of rs4588 and rs7041 polymorphisms and their association with levels of 25OHD.

*Materials and Methods:* Medical students of Aga Khan University Hospital participated in a study (7th June-4th July 2014). A phlebotomy camp was organized and for each participant, blood was drawn, serum assayed for 25OHD and analyzed. Genomic DNA was extracted and genotyped for GC rs4588 and rs7041 polymorphisms using polymerase chain reaction-based restriction fragment length polymorphism assay.

*Results:* Mean age of group (n=101) was 20.03±0.99 years. 86% had Vitamin D deficiency (VDD) (mean 25OHD 15.02±8.63 ng/ml). To date 86 students have been genotyped for rs7041 and 62 for rs4588; frequency of rs7041 (GG, GT, TT) was 25.6%, 47.7% and 26.7%; whereas frequency of rs4588 was 12.8%, 26.7% and 32.6% (AA, AC, CC). Mean 25OHD (16.9±12.7ng/ml) was higher in individuals with AC genotype followed by CC (13±6.4ng/ml) and AA (12.9±5.477ng/ml) amongst rs4588 genotypes (p-value 0.26). As for rs7041, the

mean 25OHD (15.7±10.4ng/ml) was raised in individuals with GT compared with GG (15.1±7.7ng/ml) and TT (13.6±5.1ng/ml) (p-value 0.66). Population was observed to be in Hardy Weinberg Equilibrium (p-value>0.05).

*Conclusion:* Vitamin D deficiency is prevalent in AKU medical students. Most frequently occurring genotypes for rs7041 and rs4588 are GT and CC respectively. Highest mean 25OHD levels were noted in heterozygotes while lowest in homozygotes. With prevalent VDD, it is vital to correct this deficiency and conduct further studies in larger cohorts, to identify relationship between SNPs of genes involved in Vitamin D metabolism.

*Keywords:* vitamin D, bone, polymorphism

### 8.9 PATIENT CONTROLLED INTRAVENOUS ANALGESIA ADMINISTRATION: COMPETENCY ASSESSMENT OF REGISTERED NURSES AT A TERTIARY CARE UNIVERSITY HOSPITAL KARACHI, PAKISTAN

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*Objective:* An important metric of quality nursing care is staff competency, especially for specialized skills. Prompted by critical incidences, senior nursing leadership initiated a needs assessment into the practices surrounding patient controlled intravenous analgesia (PCIA), a specialized pain management therapy, at a Tertiary Care University Hospital Karachi, Pakistan.

*Methods:* Daily chart audits, direct clinical observation, and interviews with nursing staff in adult critical care, medical/surgical, oncology and obstetrics/gynecology inpatient units providing PCIA to acute and chronic pain patients formed the basis of the case series data collection.

*Results:* 78 chart audits were conducted over six weeks assessing key areas of nursing competency and communication between acute/chronic pain staff and bedside nursing staff. Field notes of

observations highlighted equipment issues and inefficiencies in delivery of narcotic medications to patients in a timely manner. In analyzing the audit results, 96% (75/78) of the charts had issues of illegible or erroneous physician orders for PCIA, incomplete and inaccurate nursing documentation-correlating strongly with poor understanding of pain assessment. Feedback from staff interviews highlighted issues of accessibility to pain management staff and lack of education materials/orientation on PCIA.

*Outcome:* A direct outcome of the needs assessment has been the creation of a learning module, greater dialogue between all stakeholders, and ongoing train-the-trainer sessions to address concerns raised in the study. Competency measures such as written examinations and clinical checklist tools were developed and administered to a cross-section of nursing interns, and registered nursing staff over a three months in 2014.

*Keywords:* Nursing, Competency, PCIA

### 8.10

#### AMBULANCE USE IN PAKISTAN: AN ANALYSIS OF SURVEILLANCE DATA FROM EMERGENCY DEPARTMENTS IN PAKISTAN

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*Background:* The utilization of ambulances in low- and middle income countries is limited. The aim of this study was to ascertain frequency of ambulance use and characteristics of patients brought into emergency departments (EDs) by ambulance and compare them to those coming to EDs via alternative modes of transportation.

*Methods:* The Pakistan National Emergency Departments Surveillance (Pak-NEDS) was a pilot active surveillance conducted in seven major tertiary-care EDs in six main cities of Pakistan between November 2010 to March 2011. Univariate

and multivariate logistic regression was carried out to investigate the factors associated with ambulance use.

*Results:* Out of 274,436 patients enrolled in Pak-NEDS, mode of arrival to the ED was known for 94.9% (n=260,378) patients, of which 4.1% (n=10,546) were brought to the EDs via ambulances. The mean age of patients in ambulance group was significantly higher compared to mean age of non-ambulance group (38±18.4 years versus 32.8±14.9 years, p-value<0.001). The most common presenting complaint in ambulance group was head injury (12%) while among non-ambulance user it was fever (12%). Patients >65 years of age had 6.29 times (95%CI:5.0-7.92) the odd of being transported by ambulance compared to under-five age group (p-value<0.001) adjusted for gender, cities, hospital type, presenting complaint group and disposition. The adjusted odds ratio of utilizing ambulances for those with injuries was 3.55 times higher than those with non-injury complaints (p-value<0.001). Patients brought to the ED by ambulance were 7.03 times more likely to die in ED than non-ambulance patients after adjustment for other variables in the model.

*Conclusion:* Utilization of emergency medical services is very low in Pakistan. Ambulance use was found to be more among older patients, patients presenting to ED with injuries, and were more likely to be admitted or die in the ED.

*Keywords:* ambulance, Pak NEDs, Emergency

### 8.12

#### HEALTH SEEKING ATTITUDE AND KNOWLEDGE LEVEL OF COUPLES REGARDING ANTENATAL SCREENING

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*Introduction:* Antenatal screening is of great significance in detection of high and low risk groups for various conditions. The aim of this study

was to determine the health seeking attitude and knowledge level of couples regarding antenatal screening attending obstetrics clinics of Karachi. Study Design Cross-sectional Place and Duration Omair Sana Foundation, Al-khidmat & Mothercare Hospital 6 months

*Patients and Methods:* Hundred couples were interviewed. There were 4 questions about health seeking attitude. Each question carries 1 mark. If couple score  $>2$ (50%) out of 4(100%), then it was labelled as positive attitude,  $\leq 2$ (50%) was labelled as negative attitude. There were total 14 questions about knowledge. Each question carries 1 mark. If couple scores  $>7$ (50%) out of 14(100%), then it was labelled as adequate knowledge,  $\leq 7$ (50%) was labelled as inadequate knowledge.

*Results:* Mean wife age was  $25.49 \pm 4.14$  years while mean husband age was  $30.65 \pm 5.17$  years. Adequate knowledge was found in 5.2% couples. Health seeking attitude was found positive in 82.5% couples. Acceptance rate for screening was found in 87% of the patients. Insignificant difference was observed for acceptance rate, irrespective of knowledge and health seeking attitude ( $p > 0.05$ ). Acceptance rate was found 40% less in couples with husband only as a decision maker as compared to the couples where decision makers were both husband and wife (OR:0.60,95%CI:0.23-1.56).

*Conclusion:* Although knowledge level of majority of the couples was not up to the mark but health seeking attitude and acceptance rate towards antenatal screening was found good.

*Keywords:* knowledge level, Health seeking attitude, antenatal screening

### 8.13

TRAINING IN EMERGING ADVANCES IN THE MANAGEMENT OF CHRONIC HEPATITIS C INFECTION FOR HEALTHCARE PROFESSIONALS IN PAKISTAN: THE TEACH-PAK PROJECT.

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*Introduction:* Pakistan has 9 million infected patients with HCV. We aimed to develop a state of the art educational resource that delivers up-to-date and relevant information regarding all aspects of HCV to the health care practitioner (HCP) community in the province of Sind.

*Methods:* Educational training comprised of 3 modules, each of 2 weeks duration. These were: 1. Epidemiology and prevention of HCV, 2. Diagnosis and assessment of severity of HCV 3. Treatment of Hepatitis C. Activities were primarily web based with some face to face interactive session (blended curriculum). All study material was in the form of PDF documents available for download and viewing on the website (<http://pssld-training.com/>). Discussions, questions and comments were encouraged. An overall pre and post intervention knowledge assessment was performed, in addition to individual module assessments.

*Results:* Two group sessions were held. In the 1st group, 38 participants appeared for both pre and post-tests out of 40. The mean pretest score of the group was 25.87 (SD 5.6), and the mean post test score was 34.21(SD 5.0). This increase was statistically significant ( $t=8.51$ , P

*Keywords:* CME, Hepatitis, blended learning

#### 8.14

ATTITUDE, AWARENESS AND KNOWLEDGE OF EVIDENCE BASED MEDICINE AMONG POSTGRADUATE STUDENTS OF LIAQUAT UNIVERSITY OF MEDICAL & HEALTH SCIENCES JAMSHORO/HYDERABAD PAKISTAN.

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*Background:* To provide the better health care to the patients, and to take appropriate clinical decisions for them, experts of the medical field from all over the world, emphasize on practice of evidence based Medicine. EBM requires a health care provider, to go through the scientific literature to find out the best available option, to solve patient's health problem. EBM not only provide better health care to patients, but also prevents inappropriate clinical decision regarding the patient's health.

*Methodology:* This cross-sectional survey was carried out in the month of August 2013-september 2013 at Liaquat university hospital Hyderabad/Jamshoro. A pre-tested self-administered questionnaire, previously used for similar type of surveys, was used.

*Results:* Overall response rate was 94%.of the participants 68.1% (n=96/141) heard the word of EBM first time during postgarduation training. Teaching of EBM at both under- and postgraduate level was strongly suggested. 95.7% (n=135/141) of the participants never attended a workshop on EBM.70.2% (99/141) use both books and internet to update their knowledge. 53.2 % (n=75/141) agreed that doctors practice needs to be audited. 85.1 % (120/141) replied that they have no one around them who practice EBM. 46.8% (n=66/141) admitted that only sometimes they discuss the need of evidence based guideline during ward rounds and OPD. 51.1% (72/141) were of the opinion introducing EBM in undergraduate education will help producing better doctors. 38.2% (n=50/141) research articles/reports are not readily available, 17% (22/141) lack of postgraduate interest to change or try new ideas were the barriers faced by postgraduate. *Conclusion:* Although attitude of

postgraduate students towards EBM practice in Pakistan is welcoming nevertheless, they need more knowledge and training in this regard. Therefore, there is a strong need of incorporating the teaching of EBM at undergraduate as well postgraduate level to promote the practice of EBM.

*Keywords:* Evidence Based Medicine, LUMHS, Jamshoro

#### 8.15

THE NATURE OF THE BEAST CALLED CLINICAL SUPERVISION” NEEDS ASSESSMENT OF CLINICAL SUPERVISION IN POSTGRADUATE MEDICAL EDUCATION (PGME), AGA KHAN UNIVERSITY

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*Objective:* To identify resident needs of clinical supervision and to develop a model of clinical supervision based on residents' needs and literature.

*Introduction:* Clinical Supervision is a vital and fundamental part of clinical professional residency training. There is a dearth of literature on residents' perspectives regarding the roles of a clinical supervisor. This study was carried out at the Aga Khan University (AKU), Karachi, Pakistan, to explore the residents' perspectives regarding their needs for the different roles of clinical supervision, to help develop a model of clinical supervision for residency supervisors.

*Methods:* All residents registered with the Post Graduate Medical Education (PGME) office, AKU, Karachi, were surveyed. A mixed method approach was used; a quantitative cross-sectional survey and a qualitative focus group discussion, which were analysed descriptively and thematically coded, respectively. Exploratory factor analysis was used to identify whether clinical supervision role(s) was made up of a single or multiple factors.

*Results:* There was an overall response rate of 72.1% (n=329/456). The residents rated the clinical supervisor roles very highly (Mean=4.43-5.85, SD=1.21-1.86). Exploratory factor analysis yielded

two factors; Factor1 related to specialist skills (clinical expert) and Factor2 related to role modeling. Four themes emerged after thematic FGD coding: supervision functions; process of supervision; supervisor's attributes; and impact on residents. There was convergence of data between the first two themes and Factor1 "specialist skills", and between the last two themes and Factor2 "role modeling" factor.

*Conclusion:* Clinical Supervisory Roles identified in literature were supported by the questionnaire and FGD findings. Convergence of clinical supervisor roles was found between resident responses in the Questionnaire and thematic codes identified in the FGD. The expected supervisor roles from the residents' perspective, aligned to roles identified in the literature, led to the development of the Socio-Cognitive and Skill Based Model of clinical supervision (SCSM- CS).

*Keywords:* Clinical supervision, postgraduate medical education, resident, supervisor, supervisee

## 8.16

### PSYCHOMETRIC QUALITIES OF A PROCEDURAL ASSESSMENT TOOL FOR ASSESSING CENTRAL LINE INSERTION

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*Background & Objective:* The assessment of procedural competence in residencies throughout Pakistan primarily is via a procedural electronic log-book which records the quantity of procedures but the quality of performance along with feedback is deficient. To improve patient safety and limit operator related complications an initiative was undertaken for the development and assessment of medicine residents' procedural skills.

*Methods:* Ours was a Qasi-experimental study for which an instrument was developed based on literature and whetted by faculty, resulting in a final draft of the 38 item, detailed task specific instrument. 40 residents were trained in a simulation based workshops and assessed for knowledge and

procedural skill separately. Two rater's (from a pool of 7), were used for the skills assessment for each resident in the workshop. Reliability analysis and generalizability analysis was done using SPSS v19 and G-string v4 respectively.

*Results:* Results showed a significant difference in the residents pre (M=10.1, SD= 4.2) and post (M=12.6, SD=3.1) workshop scores,  $t(39) = -3.427$ ,  $p = 0.001$ . The skills assessment instrument was found to have a high reliability (Cronbach's = 0.83, intra-class correlation coefficient =0.79). G-study showed the absolute error coefficient was 0.8.

*Conclusions:* Combing the strengths of DOPS and OSATS as a work place based assessment instrument (a content specific rating scale with periodic assessment) lead to the development of a procedural assessment instrument with good content validity, and high inter item and inter rater reliability. In addition it helps provide residents' with detailed feedback on their performance and can be used to certify procedural competence.

Based on the experience of this pilot study, additional instruments could be developed procedures performed by medicine residents.

*Keywords:* Procedural Skill Assessment, Work place based assessment, Psychometrics, Postgraduate Medical Education

## 8.17

### DIRECT OBSERVATION OF PROCEDURAL SKILLS: IS THE RESIDENT SATISFIED?

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*Background:* With the implementation of Competency Based Residency Education in postgraduate medical education at AKU there are many challenges to overcome for successful, sustainable assessment and feedback strategies. Direct Observation of Procedural Skills (DOPS) is a variation of work placed based assessment and has high face validity. It is argued to assess competence rather than performance. There is little research on

the acceptability of DOPS; however they appear to be acceptable to both examinees and examiners. Medicine residents are required to be proficient in a number of procedures including Central Line Insertion. There are no performance standards over which to assess the resident's procedural skills.

*Objectives:* To evaluate acceptability and feasibility of assessing the performance of residents' procedural skills at the Department of Medicine using a modified version of directly observed procedural skills (DOPS)

*Methods:* Workshops were conducted to directly assess the competence of residents in Central Line Insertion on a mannequin. Forty (40) residents attended a workshop of Direct Observation of Procedural Skills (DOPS) of Central Line Insertion at the end of which, knowledge and procedural skill was assessed whilst being video-recorded for feedback and self-assessment. Residents' satisfaction and feasibility of the process was evaluated via a questionnaire.

*Results:* Participant Satisfaction:

Scoring on a scale from 1 to 10, the majority of participants were satisfied with the workshops (mean =8.83). The individual items mean scores of the participants satisfaction survey on the intervention ranged from 7.52 for demonstration of ethical behavior to 9.0 for facilitators conduction of the workshops. Additionally, participants expressed that their expectations were met (mean = 8.5), their knowledge was enhanced (mean= 8.73), enhanced their skills for self- assessment (mean= 8.8), and encouraged the development of procedural skills (mean=8.8).

*Feasibility:* The results of the feasibility survey showed participants would commit over the next three years to improving and enhancing CVP line insertion as a work place based assessment (mean= 4.52). They were also willing to participate in the implementation phase in the coming years in order to learn how to efficiently perform CVP line insertions (mean=4.55) and build a system of work place based assessment in their specialties' (mean=4.38). A large majority of residents responded that they felt confident in performing CVP line insertions and making decision regarding the management plan (mean=3.93) and believed

that this work based assessment would be time efficient (mean=4.21)

Participants were satisfied with the workshops' (mean =8.83) and would commit over the next three years to improving and enhancing their CVC skills as a work place based assessment (mean= 4.52).

*Conclusion:* Medical educators have a high responsibility to provide feedback on resident performance. The new method of resident direct observation of competence training was highly valued by the residents. However the resident satisfaction and compliance to the set standards through observation in real life setting is yet to be reported.

### 8.18

#### IMPLEMENTING A MODIFIED DIRECT OBSERVATION OF PROCEDURAL SKILLS (MDOPS) FOR CENTRAL VENOUS CATHETERIZATION

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*Introduction:* Work place based assessment (WPA) in literature has been used to increase the trainee's clinical confidence, relying on the assumption that assessment drives learning through its content, format and programming. Medicine residents are required to be proficient in central venous catheterization (CVC). There has been concern of the faculty regarding complications been reported. No performance standards are been identified for the procedure. Further there are no structured formative or summative methods to assess procedural skills of residents. Department of Medicine initiated DOPS simulation based workshops on CVC in 2013 for training and assessment of procedural skills in Medicine residents as it is critical for patient care and patient safety.

*Objectives:* To assess the performance of residents in CVC in a simulated situation in order to credential them at a higher quality standard for safe practice

To improve patient safety and limit operator related complications

**Methodology:** A quasi experimental study was conducted. A validated DOPS form available in literature for CVC was modified for use in the study by a group of experts and review of literature with an inclusion of specific task oriented steps as an OSATS (Objective structured assessment of technical skills) in order to combine the strengths of DOPS (actual work place performance and multiple observations) and OSATS (good inter-rater reliability and construct validity in operation-specific checklists and detailed global. Residents were trained in four simulation based workshops and assessed for knowledge and procedural skill with a pre and a post test, whilst being video-recorded for feedback and self-assessment. Residents' satisfaction and feasibility of the process was evaluated via a questionnaire.

**Results:** There was a significant difference in the residents pre (M=10.1, SD= 4.2) and post (M=12.6, SD=3.1) workshop scores,  $t(39) = -3.427$ ,  $p = 0.001$ ; despite being given the material to study prior to the intervention. The skills assessment instrument was found to be reliable (Cronbach's = 0.83, inter rater coefficient =0.79). Participants were satisfied with the workshops (mean =8.83, out of 10) and would commit over the next three years to improving and enhancing their CVC skills as a work place based assessment (mean= 4.52, out of 5).

**Conclusion:** After having assessed and certified residents core knowledge and procedural skill (in a simulated environment) competency on CVC; in the next phase of the study, residents will be assessed on real patients by a multi-source feedback (MSF) with multiple raters for credentialing in CVC. Further mDOPS instruments could be developed for other procedures performed by medicine residents.

## 8.19 RESIDENT'S KNOWLEDGE AND PERCEPTIONS ABOUT USEFULNESS OF COMMON MEDICAL ABBREVIATIONS

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**Introduction:** The use of abbreviations and acronyms in healthcare has become an international patient safety issue. The Joint Commission mandated the implementation of its "do not use" list in 2004 prohibiting the use of a minimum number of abbreviations. The objective of this study was to assess and compared the understanding of medical abbreviation and acronyms among trainee residents and fellows of Department of Medicine.

**Methods:** This is a cross sectional observational study conducted at Aga Khan University Hospital (AKUH), Karachi. The self-administered questionnaire in the form of abbreviations was compiled. These lists were assessed by our team of Cardiologist, Endocrinologist, gastroenterologist, neurologist, nephrologist, pulmonologist and internal medicine specialist. Study participants included post-graduate trainees (residents and fellows) from Department of Medicine

**Results:** A total of 77 responses were obtained. The overall correct response was 71%. The specialty residents scored highest with 76% correct answers followed by residents 72%. Overall mean score was  $56.8 \pm 10.4$ . The specialty residents achieved a higher mean score of  $61.5 \pm 5.3$  as compared to residents and students. The overall competency level was 53(68.8%). Specialty residents were able to scored maximum (>70%) with 19/22 (86%) response followed by residents with 30/40 (75%) and student with 4/15 (26.7%). From the list of "Do not use abbreviation" 89.6% reported to used Q.D. instead of "once daily", 93% were used IU as a substitute of full word "International Unit", 96% wrote  $\mu\text{g}$  as an alternative to "microgram"

**Conclusion:** This study confirms that use of abbreviations is widespread. There is variation in the use and meaning of abbreviations and to prevent

misunderstanding only standard abbreviations should be used. One way to help achieve this is to improve our written communication.

## 8.20 TASK-BASED LEARNING VERSUS PROBLEM-ORIENTED LECTURE IN NEUROLOGY CME - A QUASI EXPERIMENTAL STUDY

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*Objective:* To determine whether general practitioners learned better with task-based learning or problem-oriented lectures in a Continuing Medical Education set up.

*Methodology:* Fifty-nine physicians were given a choice to opt for either Task-based Learning (TBL) or Problem Oriented Lecture (PBL) in a continuing medical education set up about headaches. The TBL group had 30 participants divided into 10 small groups, and were assigned case-based tasks. The lecture group had 29 participants. Both groups were given a pre and a post-test.

*Results:* Cronbach's alpha showed the following results: = 0.672 for lecture group and 0.881 for TBL group. Item analysis for difficulty (p) and discriminatory indexes (d) was obtained for both groups. The results for the lecture group showed pre-test (p) = 42% vs. post test (p) = 43%; pre-test (d) = 0.60 vs. post-test (d) = 0.40. The TBL group showed pre-test (p) = 48% vs. post test (p) = 70%; pre-test (d) = 0.69 vs. post-test (d) = 0.73. Paired T-test statistics depicted lecture group pre/post-test mean scores as  $(8.52 \pm 2.95$  vs.  $12.41 \pm 2.65$ ;  $p < 0.001$ ), where TBL group showed  $(9.70 \pm 3.65$  vs.  $14 \pm 3.99$ ;  $p < 0.001$ ).

*Conclusion:* Both delivery methods were found to be equally effective, showing statistically insignificant differences. However, TBL groups' post-test higher mean scores and radical increase in the post-test difficulty index demonstrated improved

learning through TBL delivery and calls for further exploration of longitudinal studies in the context of CME.

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



## **Infectious Diseases**

## 9.1 CHARACTERIZATION OF GENOMIC VARIATIONS IN SNPS OF PE\_PGRS GENES REVEALS DELETIONS AND INSERTIONS IN EXTENSIVELY DRUG RESISTANT (XDR) MTB STRAINS FROM PAKISTAN

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*Background:* Mycobacterium tuberculosis (MTB) PE\_PGRS genes belong to the PE multigene family. Although the function of PE-PGRS genes is unknown, it is hypothesized that the PE\_PGRS genes may be associated with antigenic variability in MTB.

*Material and Methods:* We performed Whole Genome Sequencing analysis on (n=37) extensively drug resistant (XDR) MTB strains from Pakistan which included Lineage 1 (East African Indian, n=2); Other lineage 1 (n=3); Lineage 3 (Central Asian, n=24); Other lineage 3 (n=4); Lineage 4 (X3, n=1 and T group, n=3) MTB strains.

*Results:* We identified 107 SNPs from the analysis of 42 PE\_PGRS genes; of these which 13 were non-synonymous SNPs (nsSNPs). The nsSNPs identified in PE\_PGRS genes: 6, 9 and 10 were common in all EAI, CAS, Other lineages (1 and 3), T1 and X3. Deletions in PE\_PGRS genes: 3 and 19 were observed in 17 (80.9%) CAS1 and 6 (85.7%) in Other lineages (1 and 3) XDR MTB strains, while DELs in the PE\_PGRS49 were observed in All CAS1, CAS, CAS2 and Other lineages (1 and 3) XDR MTB strains. All CAS, EAI and Other lineages (1 and 3) strains showed insertions (INS) in PE\_PGRS6 gene, while INS in the PE\_PGRS genes 19 and 33 were observed in 20 (95.2%) CAS1, all CAS, CAS2, EAI and Other lineages (1 and 3) XDR MTB strains.

*Conclusion:* Genetic diversity in PE\_PGRS genes contributes to antigenic variability and may result in increased immunogenicity of strains. This is the first study identifying variations in nsSNPs and INDELs in the PE\_PGRS genes of XDR-TB strains

from Pakistan. It highlights common genetic variations which may contribute to persistence.

*Keywords:* Tuberculosis, Pakistan, XDR

## 9.2 FIELD EVALUATION OF THREE WIDELY USED MOSQUITO TRAPS AT LAKE ALICE UNIVERSITY OF FLORIDA.

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*Background:* Mosquito monitoring and surveillance programs use various types of mosquito traps, but in our set up only few comparisons have been conducted. In our study we have compared the performance of three commercial trapping devices, which are commonly used.

*Methods:* Three different traps, Biogents Sentinel trap (BG trap), Gravid trap, Centre for Disease Control miniature light trap (CDC trap) were compared in two different location at Lake Alice University of Florida Gainesville, in a week from June 23 to 26, 2014. In the first phase, we had placed BG Sentinel and Gravid trap in the morning and 24hour trap comparisons were conducted. While in the evening CDC light trap was placed for 9 hours. In the second phase of the study we had placed Gravid trap and CDC light trap in the evening and 9 hour trap comparison were conducted, while the BG Sentinel trap was placed in the morning for 24 hours.

*Results:* Per 24-hour trapping period of the first phase, the BG trap caught few mosquito, the highest number of individuals of the genus Culex female was found (n=5). The Gravid trap did not catch more individuals of any genus we have found only one Female Culex. While in the light trap we have found Female Culex (n=8) and Female Anopheles (n=1). In the second phase of per 9 hour trapping period, the Gravid trap caught Female Culex (n=8) and the Male Culex (n=1) while in CDC light trap we have found Female Culex (n=7), Male Anopheles (n=3) and Female Anopheles (n=2). In

BG Sentinel after 24 hour of trapping period, we have caught Female Culex (n=5).

*Conclusion:* In our pilot study, we have found that CDC light trap caught the highest number of mosquitoes per trapping period then Gravid and BG Sentinel. So the CDC light trap is perhaps the best solution for general monitoring or surveillance programs of adult mosquitoes at Lake Alice of University of Florida.

*Keywords:* mosquito monitoring, Lake Alice, traps

### 9.3 PAKISTAN: POLIOMYELITIS ERADICATION CHALLENGES

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*Background:* In recent years, researchers have been increasingly interested in finding the challenges to poliomyelitis eradication. The etiology and pathology of poliomyelitis is well known in all over world therefore, millennium development goals (MDG's) have been developed to ensure children rights by reducing children mortality rate.

*Objective:* The authors reviewed that in Pakistan, poliomyelitis eradication is challenged by numerous impediments but the major obstacles are unsecured environment, government unaccountability, natural disasters, migration and refusal rates which will be discussed in this paper. Here, authors also report that the role of government, parents and religious leaders is essential in advocating the importance of poliomyelitis vaccination.

*Method:* This paper has been extracted from the literature review of five articles taken from the database of CINAHL, Cochrane, Mosby's Nursing Consult and Science Direct. It has been identified that a considerable amount of literature reviews have been done to acknowledge the challenges to poliomyelitis in Pakistan but little research has been found in regards to the solution of those challenges.

*Result and Conclusion:* The text also highlights some of the strategies which can be done at the individual and national level. Authors emphasized

that now it's time for government and societies of Pakistan to tie their shoes and fight with the help of mind and knowledge to regain national pride because poliovirus may be is at its last stand but success is far from our certainty. This can also be achieved by directing the future researches on strategies to solve these challenges particularly in the context of Pakistan.

*Keywords:* Polio, Government, Obstacles

### 9.4 BURDEN AND GENETIC DIVERSITY OF NOROVIRUS IN CHILDREN FROM COMMUNITIES OF KARACHI, PAKISTAN

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*Background and objective:* Norovirus is well recognizing as second most common causes of acute diarrhea in children worldwide. Little is known about the occurrence of norovirus in community settings. No norovirus prevalence and genetic variability data are available for Pakistan, where early childhood mortality due to acute gastroenteritis is common. The objective of this study was frequency determination of norovirus in children under 5 years, with severe gastroenteritis

*Material and Methods:* In this study, 557 fecal specimens collected during June 2005 - Jul 2007 from two communities of Karachi, Pakistan. Norovirus RNA was detected by real-time RT-PCR and then genotyped by sequencing of region-C of the VP1 gene

*Results:* Overall, 205 (36.8%) samples tested positive for norovirus, from which 22 (10.7%) belonged to genogroup GI and 170 (82.9%) to GII and remaining 13 (6.3%) contained mixed infection of GI and GII. Phylogenetic analyses demonstrated the co-circulation of 20 genotypes including ; GI.3, GI.4, GI.6, GI.7, GII.1, GII.2, GII.3, GII.4, GII.5, GII.6, GII.7, GII.9, GII.10, GII.12, GII.13, GII.14, GII.15, GII.16, GII.20, GII.21.

GI.3 in GI and GII.4 in GII were most prevalent genotypes respectively.

*Conclusion:* This report demonstrates epidemiological and molecular information on the co-circulation of different genotypes in infants and children with acute gastroenteritis in community setting of Karachi, Pakistan. This information on norovirus genotypes may be applicable as tailor-designing treatment and/or vaccine against norovirus strains circulating in Pakistan. An effective vaccine targeted multiple genotypes would have a significant impact on reducing noroviral morbidity.

*Keywords:* Acute gastroenteritis, diarrheal disease, genogroup I and II

### 9.5 MOLECULAR EPIDEMIOLOGY AND GENETIC DIVERSITY OF NOROVIRUS AMONG HOSPITALIZED DIARRHEAL CHILDREN IN PAKISTAN

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Norovirus infections are one of the most common causes of acute gastroenteritis among children in developing countries. No Norovirus prevalence and genetic variability data are available for Pakistan, where early childhood mortality due to acute gastroenteritis is common. In this study, 255 fecal specimens were collected from hospitalized children with acute gastroenteritis, from the four largest cities in Pakistan, during April 2006– March 2008. Norovirus RNA was detected by real-time RT-PCR and then genotyped by sequencing of region-C of the VP1 gene. Overall, 41(16.1%) samples tested positive for Norovirus, from which 9 (22%) belonged to genogroup GI, 30 (73%) to GII, and 2 (5%) contained a mixture of GI and GII viruses. Sequence analyses demonstrated the co-circulation

of 14 NoV genotypes including GI.3, GI.5, GI.8, GII.2, GII.3, GII.3, GII.5, GII.6, GII.6, GII.7, GII.9, GII.13, GII.16, and GII.21. Most prevalent genotypes were GI.7 and GII.4. This report demonstrates the presence of a large number of different Norovirus genotypes circulating in Pakistan. This information on Norovirus genotypes may be applicable in managing patients with Norovirus -associate acute gastroenteritis, as well as tailor-designing treatment and/or vaccine against Norovirus strains circulating in Pakistan

*Keywords:* Norovirus, GI and GII, acute gastroenteritis

### 9.6 EFFECT OF CLIMATE ON TRANSMISSION AND SEVERITY OF MALARIA: A TERTIARY CARE CENTER STUDY

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*Objective:* To investigate the impact of climate on the transmission of malaria. To examine seasonal severity of Plasmodium vivax and falciparum.

*Method:* Retrospective study was performed between Jan to Dec 2014, conducted at the Section of Haematology, Department of Pathology & Microbiology Aga Khan University Karachi. During 2014 all malaria investigation in the clinical laboratory screened by thick and thin smears. Positive malaria cases were selected for the study regardless of age and gender. Severity in malaria positive cases was reported by calculating parasitemia for P. falciparum and by + to ++++ grading system for P. vivax.

*Results:* Total 1126 malaria positive cases were analyzed during 2014. Among them 710 were male and 416 were female with age range from 20 days to 75 year. Spearman's rank correlation analysis was performed and results for monthly malaria positive cases showed moderate correlation with average temperature°C (0.536), rain fall(mm) (0.238), relative % humidity (0.078) but with average day light hours is significant correlation

(0.58\*). Regression analysis showed  $\beta$  coefficient value for average temperature°C, rain fall(mm), humidity(%) and day light(h) was 0.487, -0.038, -0.092 and -1.455 respectively which were significant means there is positive relationship between variables. Plasmodium falciparum was found in 6.6% (n=75) cases with maximum parasitemia of 23% while Plasmodium vivax found in 93.3% (n=1051) cases up to ++++ severity.

*Conclusion:* increasing temperature with relative humidity and spatially in winter may increase the risk of malaria infection with unduality of high parasitemia for P. falciparum infection. Findings suggest that the micro ecology of environment need to be investigate.

*Keywords:* malaria, climate, P.falciperum

## 9.9

INTERVENTIONS TO REDUCE THE BLOOD CULTURE CONTAMINATION RATE TO THE ACCEPTED BENCHMARK OF 2 TO 3% IN A RURAL AND PERI URBAN COMMUNITY OF YOUNG INFANTS (0-59) DAYS BY USING IMPROVED ASEPTIC BLOOD CULTURE COLLECTION TECHNIQUE WITH SUBSEQUENT COST SAVINGS.

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*Background:* Blood culture contamination in the paediatric population remains a significant quality and safety issue. False-positive blood cultures not only increase laboratory work but also prolong the stay of patients in hospitals and the use of broad-spectrum antibiotics, which are likely to increase antibiotic resistance and morbidity. To our knowledge, there have been no quality improvement efforts published for community-based blood culture collection of young infants (0-59 days) with focus on implementing interventions to reduce contamination to the accepted benchmark of 2 to 3%.

*Methods:* Community-based studies were conducted in peri-urban and rural areas in Karachi and Matiari districts of lower Sindh, Pakistan, from January 2012 to December 2013 in young infants (0-59 days) to identify cases with sepsis. Blood culture was collected to determine aetiology of community-acquired newborn infections with high mortality rate in developing countries of South Asia. An Aseptic Blood Culture Collection process was designed by analyzing current practice and identifying areas in which improved sterile techniques could be introduced. A variety of strategies were implemented to decrease contamination rates to an accepted benchmark of 2-3%. These included: Intensive Training of Phlebotomists for Aseptic Blood Culture Collection Technique using Pictorials, and Videos as training aids, Blood Culture Collection Check list, on-spot Audits by Lab Coordinator, and introduction of an additional disinfectant such as Chlorhexidine spray.

*Result:* At Karachi Field site Laboratory 1193 Blood Culture were collected from young infants during the study period (January 2012 to December 2013). The blood culture contamination rate pre intervention was 23% and decreased to 2-3% post interventions. At Matiari Field Site 1693 blood cultures were collected from young infants during the study period (March 2012 to December 2013). The blood culture contamination rate pre interventions were 11% and decreased to 0-1% post interventions.

*Conclusion:* The introduction of improved Standardized Aseptic Blood Culture Collection Technique with added interventions combined with continuous refresher trainings of phlebotomists, reduced the contamination rate a desirable benchmark of 2 to 3%. Thus, with educational interventions with continuous refresher trainings of phlebotomy teams to perform aseptic peripheral blood culture collection, the Blood culture contamination was greatly reduced making it cost effective in community-based surveillance in young infants.

*Keywords:* Blood culture contamination, Aseptic Technique, Interventions

### 9.10

#### ANIMALS LIVING IN POLLUTED ENVIRONMENTS ARE A POTENTIAL SOURCE OF ANTICANCER AND ANTIMICROBIAL ACTIVITY

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Many animals/pests live in unhygienic environments like crocodiles, snakes, cockroaches and/ or feed on germ-infested organisms and yet thrive in these conditions, yet we have to protect ourselves by cooking things to death or using killer soaps. So our question is how they fight microbial infections and carcinogens even though they encounter them routinely. We hypothesized that these germ-laden creatures must possess an inherent well-developed defense mechanism which protects them against diseases caused by superbugs and carcinogens. To test this hypothesis, our group in collaboration with wild life team members obtained tissues of adult cockroaches and a 35 years old, 10 feet long adult male crocodile from the Kirthar National Park. Both cockroaches and crocodile were dissected and all biological materials were collected. Our team is currently testing the biological samples for potential antimicrobial and anticancer activity. Preliminary studies suggest that crocodile organ lysates and microbiota isolated from its gut exhibit anti-tumor activity against human hepatocellular and prostate cancer cells. It is hoped that the proposed research will lead to the identification of novel antitumor compounds from the crocodile lysates as well as potential antibiotics against deadly infections caused by superbugs.

**Keywords:** Crocodile, Cockroaches, Antimicrobial and anticancer activity

### 9.11

#### ANTIACANTHAMOEBIC, ANTIBACTERIAL AND ANTIOXIDANT PROPERTIES OF NATURAL AND MARKETED HONEY

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**Objective:** Acanthamoeba is known to cause granulomatous amoebic encephalitis (GAE) and amoebic keratitis (contact lens users). The diagnosis and treatment of disseminated disease and GAE is not well defined as a result death occurs in 99% of the cases that have been reported in Pakistan. Honey, is well known for its nutritive and medicinal values. Honey has established efficacy against variety of both gram positive and gram negative bacteria and is also effective in reducing the risk of heart disease, cancer, inflammatory processes, asthma, infected wounds, chronic wounds, skin ulcers, and cataracts. The overall aim of the present study was to assess the in-vitro Antiacanthamoebic; antimicrobial activity of natural honey against clinically important Acanthamoeba castellanii, methicillin-resistant Staphylococcus aureus (MRSA) and Pseudomonas aeruginosa.

**Method:** Amoebistatic and amoebicidal properties of natural honey collected directly from the bee hive as well as marketed honey were tested against clinically important Acanthamoeba castellanii of the T4 genotype. Antibacterial effects of honey samples were determined against methicillin-resistant Staphylococcus aureus (MRSA) and Pseudomonas aeruginosa. The phenolic and flavonoid contents and antioxidant activities of natural honey versus marketed honey were also tested.

**Results:** Natural honey exhibited potent amoebistatic and amoebicidal effects, as well as antibacterial properties against MRSA and P. aeruginosa in a concentration-dependent manner. Honey-treated A. castellanii showed loss of acanthopodia, following which amoebae detached, rounded up, reduced in size, decreased in cytoplasmic mass and they were observed floating in the culture medium. Importantly, honey-treated

amoebae did not revive when inoculated in fresh growth medium. No viable amoebae emerged within 24h of incubation with the growth medium, however glycerol-treated amoebae exhibited viable trophozoite and active growth. In contrast, marketed honey samples varied in their efficacy against *A. castellanii*, MRSA and *P. aeruginosa*. Given potent effects of natural honey, next we determined phenolic and flavonoid contents and antioxidant activities of natural honey versus marketed honey. The proportion of flavonoid, as determined by quercetin measurements and the proportion of phenolic, as determined by gallic acid measurements was higher in natural honey compared with marketed honey. Similarly, the antioxidant activity, as determined by 2,2-diphenyl-1-picrylhydrazyl (DPPH) scavenging activity was higher in natural honey versus marketed honey.

**Conclusion:** These findings suggest that the observed differences in antimicrobial activities (antiamoebic and antibacterial) may be attributed to variations in constituents of flavonoids and phenolic, or possibly a combination of other factors.

**Keywords:** Acanthamoeb, honey, flavonoids

### 9.12 PREVALENCE OF PROTEASE RESISTANCE MUTATIONS IN HIV-1 SUBTYPE A SEQUENCES FROM GLOBAL EPIDEMIC

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**Background:** First case of HIV-1 subtype A was reported in mid-80s. In subsequent years, HIV subtype A disseminated globally, establishing itself in certain regions of the world including Kenya, Uganda, Japan, Azerbaijan, Belgium, Botswana, Belarus, Congo, and recently, Afghanistan and Pakistan. Analysis of the evolutionary patterns of a virus in the context of antiretroviral treatment (ART) given in different parts of the world, sheds

light on the selection pressures on viruses that are associated with emergence of drugs resistance.

**Objective:** The objective of this study was to analyze patterns of antiretroviral drug resistance mutations in HIV-1 subtype A global epidemic.

**Methods:** A total 4258 HIV-1 subtype A Protease sequences from 54 countries were retrieved from HIV database Los Alamos. Subsequently, Stanford HIV Drug Resistance Database and International Antiviral Society-USA (IAS-USA) report of ART mutations were used to analyze the presence of major and minor mutations in our sequences, associated with resistance to protease inhibitors (PIs).

**Results:** Our analysis revealed that 6 minor ART resistance mutations, namely M36I, H69K L89M, K20I, K20R and G16E were predominantly present in HIV sequences from different countries. These mutations were weakly associated with resistance to PIs, especially Atazanavir and Tipranavir. Frequencies of major mutations were very low in all the countries analyzed. Among major mutations, M46I, associated with resistance to PI Indinavir, was found in most of the countries.

**Conclusion:** This study showed that HIV subtype A protease sequences from most countries contain minor PI resistance mutations. It is possible that any major PI-resistance mutation that might occur in the genetic background of the minor mutations discussed above will augment the effect of the major PI-resistance mutation. This calls for dedicated efforts to improve compliance to antiretroviral therapy in Kenya, which will go long way in ensuring therapeutic efficacy of ARVs.

**Keywords:** HIV-1 subtype A, Protease inhibitors, Drug resistance mutations

### 9.13

#### PREVALENCE OF ROTAVIRUS AND FREE-LIVING AMOEBAE IN DRINKING WATER SUPPLIES OF KARACHI, PAKISTAN

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**Objective:** Viral gastroenteritis and infections caused by free living amoebas are a major concern for public health in Pakistan. In this study, the presence of rotavirus and free living amoeba (*Acanthamoeba* spp., *Naegleria fowleri*, *Balamuthia mandrillaris*) was determined in water filtration plants as well as domestic water supplies to Karachi city, Pakistan.

**Methods:** Twenty water samples from six water filtration plants that supply water to the Karachi city, and twenty water samples from households across Karachi were collected. Water samples were analyzed for the presence of rotavirus and free living amoebae (*Acanthamoeba* spp., *Naegleria fowleri*, *Balamuthia mandrillaris*) using enzyme-linked immunosorbent assays (ELISA) and polymerase chain reactions respectively.

**Results:** Rotavirus were present in 35% of the water samples collected from water filtration plants; however domestic water supplies had a prevalence of 5 percent. For free-living amoebae, 55% samples were positive for free living amoebae i.e., *Acanthamoeba* spp., and 5% was positive for *Balamuthia mandrillaris*. Out of twenty water samples collected from households, 35% were *Acanthamoeba* spp. positive.

**Conclusion:** These findings suggest the presence of free-living amoeba and rotavirus in drinking water supplies posing a threat to Karachi residents. Future studies are needed to determine the role of amoeba in the spread of rotavirus.

**Keywords:** rotavirus, water, acanthamoeba

### 9.14

#### ANALYSIS OF REVERSE TRANSCRIPTASE INHIBITOR RESISTANCE MUTATIONS IN HIV-1 SUBTYPE A SEQUENCES FROM GLOBAL EPIDEMIC

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**Background:** HIV was first described in Kenya during 1984-85 and has since disseminated to other countries around the globe. With the introduction of antiretroviral drugs, the survival of most HIV patients has been prolonged markedly. However, this is greatly threatened by increasing rates of anti-retroviral drug resistance, which may eventually lead to suboptimal treatment outcomes. Increased point mutations and genomic variability of this subtype in the past two decades introduces the possibility of newly developed resistance to current antiretroviral drug regimens.

**Objective:** The objective of this study was to analyze patterns of antiretroviral drug resistance mutations in HIV-1 subtype A global epidemic.

**Methods:** A total of 61 HIV-1 subtype A Reverse Transcriptase (RT) sequences from seven countries, spanning the years 1994 to 2011, were obtained from the Los Alamos National Laboratory (LANL) HIV Sequence Database. The sequences were analyzed through the Stanford HIV Drug Resistance Database and compared with the 2014 International Antiviral Society – USA Update of the Drug Resistance Mutations in HIV-1. The sequences were used to determine the presence/prevalence of mutations associated with resistance to reverse transcriptase inhibitors.

**Results:** Analysis of drug-resistance mutations revealed the presence of 5 minor and 8 major drug resistance mutations associated with resistance to reverse transcriptase inhibitors. Among these mutations, A62V was the most prevalent mutation.

**Conclusion:** This study showed that HIV subtype A sequences from most countries contain both minor and major RT resistance mutations. It is possible



that any major RT-resistance mutation that might occur in the genetic background of the minor mutations discussed above will augment the effect of the major RT-resistance mutation. This calls for dedicated efforts to improve compliance to anti-retroviral therapy in Kenya, which will go long way in ensuring therapeutic efficacy of ARVs.

**Keywords:** HIV-1 Subtype A, Reverse Transcriptase Inhibitor, Drug Resistance Mutations

### 9.15

#### TO DETERMINE OFLOXACIN SUSCEPTIBILITY RATES FOR PEDIATRIC NASOPHARYNGEAL CARRIAGE ISOLATES OF STREPTOCOCCUS PNEUMONIAE IN PERI-URBAN AREAS OF KARACHI BY DISK DIFFUSION METHOD

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**Background:** Streptococcus pneumoniae is the most common cause of meningitis, otitis media and community acquired pneumonia among children in Pakistan. The emergence of antibiotic resistance is of great concern particularly in community acquired pneumonia. It is vital to determine the antibiotic susceptibility of pneumococci against the quinolones which are recommended drugs for empirical therapy of pneumonia. Antimicrobial testing of carriage streptococcal isolates helps to determine the effectiveness of empiric treatment in pneumococcal disease in order to reduce the chances of invasive pneumococcal infections.

**Objective:** To determine the antibiotic susceptibility rate, by Kirby-Bauer disk diffusion method, towards carriage pneumococcal isolates from the nasopharynx of children living in Peri-urban areas of Karachi. **Method:** Nasopharyngeal swabs were collected from children of lower income town of Karachi aged 3 months to 5 years in December 2012. Swabs were cultured at the Infectious Disease

Research Laboratory (IDRL) at Aga Khan University on sheep blood agar to look for presence of alpha-hemolytic streptococci. Isolates with indicative colony morphology and Optochin sensitive zones (zone of inhibition  $\geq 14$  mm) were identified as pneumococci. Antibiotic susceptibility for the pneumococcal isolates was performed against ofloxacin (5 $\mu$ g-OXOID) using Kirby-Bauer Disk Diffusion method for 371 isolates. Clinical Laboratory Standards Institute (CLSI) guidance document 2013 susceptibility breakpoints were used to determine sensitivity.

**Result:** 471 swabs were collected from the population. 78.8% (n=371) swabs yielded pneumococci. Of 371 isolates 367 (99%) were found susceptible to Ofloxacin (5mcg) while only 04 were intermediately resistant.

**Conclusion:** Nasopharyngeal carriage pneumococci among children are susceptible to Ofloxacin. This data contributes in determining epidemiological trends in pneumococcal resistance. However, we would advise caution in empiric use of fluoroquinolones in pneumonia unless pneumococcal etiology is established and tuberculosis is ruled out. This precaution is necessary to avoid increasing fluoroquinolone resistance in Mycobacterium tuberculosis. S.pneumoniae fluoroquinolone-resistance trends can also be monitored as indicators of antibiotic misuse in the community.

**Keywords:** Invasive, disk diffusion method, Nasopharyngeal carriage

### 9.16

#### TACKLING INFECTION OWING TO BRAIN-EATING AMOEBAS

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**Introduction:** N. fowleri is a free-living protozoan parasite and causative agent of a fulminating brain infection, primary amoebic meningoencephalitis (PAM), which typically results in death. N. fowleri cases have been reported in healthy individuals,

who had a history of swimming in fresh water, lakes or pools, bathing in a hot spring spa, nasal irrigation, or ritual ablution. *N. fowleri* invades the nervous system when contaminated water is deeply inhaled into the nose, and ascends up into the brain tissue where it causes severe hemorrhage and inflammation.

**Objective:** Here we introduce a noninvasive diagnostic method using the 'reverse transcribrial route device', a novel therapeutic strategy in the management of this life-threatening infection with a *N. Fowleri*. The proposed route and device introduced would stimulate interest in novel treatment modes in this emerging infection.

**Methods:** Nasal sliders made up of flexible silicon would serve as a conduit that would lead a fiber optic catheter to reach the lower aspect of the olfactory bulb that would be flushed with saline to collect the secretion for collection of trophozoites of *Fowleri*. Results: The trophozoites collected in the collection pump would be diagnosed for *N. Fowleri* by using RT-PCR and/or culturing and visualization of *N. Fowleri* under the microscope

**Conclusion:** This mode of sample collection of *N. Fowleri* for diagnostic purpose, is expected to shorten the time lapsed in obtaining a sample of CSF for diagnosis, which at most of the time can not be obtained due to the contraindication of lumbar puncture in a state of raised intracranial pressure

**Keywords:** PAM, Brain eating amoeba, *Naegleria Fowleri*

### 9.17

#### GRANULOMATOUS AMOEBIC ENCEPHALITIS: GHOST RESPONSE OF AN IMMUNOCOMPROMISED HOST?

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*Acanthamoeba* and *Balamuthia mandrillaris* spp. are known to cause fatal amoebic encephalitis. Here, the author draws the attention to these cases, which are reported as 'granulomatous amoebic

encephalitis' (GAE), and their occurrence in immunocompromised individuals and patients with AIDS. GAE, like any other granulomatous inflammation, can occur only in the presence of ample numbers of CD4+ T-lymphocytes. Extensive reviews of manuscripts published over a period of 50 years on this topic and cytokine studies and/or morphological evidence provided in peer-reviewed published studies were analysed in detail by independent resources to analyse the granulomatous inflammatory evidence provided to justify the title of GAE in this group of patients. The evidence given in support of GAE did not appear to be convincing enough in the majority of published studies, and in particular its occurrence in patients with AIDS and other immunocompromised states was not justified. The distinction between the early development of type IV hypersensitivity reactions and granuloma/granulomatous inflammation was found to be vague. It is therefore recommended that this terminology is used only when all the diagnostic criteria have been met, and use of a term such as 'granulomatoid' is suggested in cases where there remains an ambiguity in the morphological appearance of the lesions, especially in AIDS and related diseases.

**Keywords:** GAE, *Balamuthia*, *Acanthamoeba*

### 9.18

#### INTERACTIONS OF PROCYCLIDINE AT A HUMAN CHRM1 RECEPTOR HOMOLOG GPCR ON PATHOGENIC EUKARYOTES.

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Procyclidine is an FDA approved agent for its use in Parkinsonism. This drug belongs to anti-muscarinic class of anticholinergic drugs that exerts its beneficial effects by reducing the stimulatory effects of acetylcholine in the basal nuclei (ganglia) by blocking its action on muscarinic M1 (CHRM1) receptors. Recently this drug has been reported to exert substantial antibiotic action against strains of pathogenic eukaryotes, like *Naegleria fowleri*,

Balamuthia mandrillaris and Acanthamoeba spp. The exact mode of action of Procyclidine on these unicellular pathogenic eukaryotes is unknown. The present study explains the mechanism of action of Procyclidine, in an in-vitro drug assay done against these eukaryotic pathogens. Growth curve evaluations reveal that Procyclidine inhibits trophozoite growth in dose- and time-dependent manner. The effects seen in clinical isolates of these pathogens show amoebistatic effects at minimum inhibitory concentrations (MIC), but at slightly higher doses they were microbicidal as well as cysticidal. Given the limited availability of newer antibiotics to treat microbial infections, discovery of novel targets on model microorganisms and covert antibiotic potentials of procyclidine tested in this study offers potential to develop similar structure drug molecules to target these pathogens in managing keratitis and granulomatous amoebic encephalitis caused by Acanthamoeba spp., and meningoencephalitis caused by Balamuthia mandrillaris, and Naegleria fowleri. Additionally, knowledge gained from these studies could be extended to explore similar targets on prokaryotes to develop a signalotropic class of novel antibacterial agents to limit the morbidity and mortality associated with these, at times lethal infections in human beings.

*Keywords:* CHRM1, Muscarinic Receptors, Anticholinergics

### 9.19 GENOTYPE-SPECIFIC HCV NS3 MUTATIONS AFFECT ANTI-HCV ACTIVITY OF FLUROQUINOLONES

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*Introduction:* Hepatitis C is a leading public health problem worldwide. It causes debilitating conditions, such as liver cirrhosis and hepatocellular carcinoma – adding to the yearly deaths from the

infection. Treatment modalities have been restricted to a select few drugs with extensive side effect profiles. Recent studies have proven the activity of fluoroquinolones against HCV by targeting NS3 helicase, a protein essential for viral replication and transmission. However, it is not known whether fluoroquinolones are equally effective against all HCV genotypes.

*Objective:* The objective of this study was to analyze differences amongst different HCV genotypes as well as to study genotype specific responses to fluoroquinolones.

*Methods:* All available NS3 sequences for genotypes 1a, 1b, 2b and 3a were downloaded from the Los Alamos HCV repository. These sequences were then aligned and translated to amino acid residues and analyzed for intergenotype differences by looking at mutations within the active site window. The translated sequences were also folded into 3D protein structures and docked with a panel of 8 fluoroquinolones, previously found to be effective against HCV. The top 10 poses for docking were selected and fluoroquinolones-NS3 interactions were analyzed.

*Results:* Intergenotype analysis revealed mutations at a total of 33 positions within the active site window. 3D structures showed a great degree of similarity with homology greater than 98%. Docking analysis showed that all variable sites did not interact with fluoroquinolones perhaps highlighting the fact that mutations at these sites lead to failure of hydrogen bond formation.

*Conclusion:* Intergenotype mutation analysis shows all genotypes are not genetically similar. These variations lead to differences in how different genotypes respond to fluoroquinolones. Further studies using in vitro models are required to document the exact nature of drug-protein interactions and their effects.

*Keywords:* HCV genotypes, NS3 Helicase, Fluoroquinolones

## 9.20

### DEPARTMENTAL REVIEW OF ULTRASOUND GUIDED OMENTAL BIOPSY - CORRELATION WITH HISTOPATHOLOGY

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*Study Purpose:* To evaluate the sensitivity of Ultrasound guided omental biopsies performed in radiology department and analysis of differential diagnosis under the guidance of ultrasound.

*Material and Method:* A cross sectional data of 102 patients retrospectively reviewed, duration of study was from January 2008 to March 2014 .The study was conducted in Aga Khan University Hospital Karachi.

*Results:* The sensitivity of omental biopsy procedures were found to be 83 % ( 81/102). Causes of omental thickening as per histopathology includes granulomatous inflammation with possibility of TB (n=16), metastasis adenocarcinoma (n=54), pseudomyxoma peritoneal (n = 1),T cell lymph poliferative disorder (n=1), malignant mesothelioma (n =1),benign tumors (n=8). 17% of biopsy was inconclusive.

*Conclusion:* Ultrasound guided core needle biopsy of omentum is highly effective and accurate procedure for omental pathology, especially in patients who have the history of ascites.

*Keywords:* omental Biopsy, ultrasound guided omental Biopsy, Omentum

## 9.21

### NANOPARTICLES-CONJUGATED DRUG EXHIBITED ENHANCED ANTIAMOEBCIC EFFECTS

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Acanthamoeba 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 the successful treatment but even then, prognosis remains poor. Several drugs have shown promise in vitro, however their toxicity at physiologically relevant concentration remains a challenge. Nanoparticles, sub-colloidal structures ranging in size from 10-100nm, are effective drug carriers to enhance drug potency. The overall aim of the present study was to determine anti-Acanthamoebic potential of gold-conjugated chlorhexidine nanoparticles. For comparison, *A. castellanii* were treated with chlorhexidine alone. The findings showed that gold-conjugated chlorhexidine nanoparticles exhibited amoebicidal and amoebistatic effects at 7.5µM. Amoebicidal effects were determined by parasite viability testing using Trypan blue exclusion assay, and flow cytometric analysis using propidium iodide, while amoebistatic effects were examined using growth assays. In contrast, chlorhexidine alone exhibited anti-Acanthamoebic effects at significantly higher concentration of 20µM. Pre-treatment of *A. castellanii* with gold-conjugated chlorhexidine nanoparticles prevented amoebae binding to host cells, as well as amoebae-mediated host cell cytotoxicity. Overall, these results showed that gold-conjugated chlorhexidine nanoparticles hold promise in the improved treatment of *A. castellanii* infections.

*Keywords:* Acanthamoeba, Nanoparticles, chlorhexidine

## 9.22 PHOTOCHEMOTHERAPEUTIC STRATEGY AGAINST ACANTHAMOEBA INFECTIONS

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Acanthamoeba is a protist pathogen that can cause serious human infections including granulomatous amoebic encephalitis that almost always results in death and a blinding keratitis. Current treatment includes a mixture of drugs and even then infection recurrence can occur. Photochemotherapy has shown promise in the treatment of Acanthamoeba infections, however selective targeting of pathogenic Acanthamoeba has remained a major concern. The mannose binding protein is an important adhesin expressed on the surface membranes of pathogenic Acanthamoeba. To specifically target Acanthamoeba, the overall aim of this study was to synthesize photosensitizing compound (porphyrin)-conjugated with mannose and test its efficacy in vitro. The synthesis of mannose-conjugated porphyrin was achieved by mixing benzaldehyde and pyrrole yielding tetra-phenyl porphyrin. Tetra-phenyl porphyrin was then converted into mono-nitro phenyl porphyrin by selectively nitrating the para position of phenyl rings as confirmed by NMR spectroscopy. The mono-nitro phenyl porphyrin was reduced to mono-amino phenyl porphyrin in the presence of tin dichloride and confirmed by peak at 629 m/z. Finally, mono-amino porphyrin was conjugated with mannose resulting in the formation of imine bond. Mannose-conjugated porphyrin was confirmed through spectroscopic analysis and showed that it absorbed light of wavelength ranging from 425-475nm. To determine antiacanthamoebic effects of the derived product, amoebae were incubated with mannose-conjugated porphyrin for 1 h, and washed 3X to remove extracellular compound. Next, amoebae were exposed to light of the appropriate wavelength for 1 h. The results revealed that mannose-conjugated porphyrin produced potent trophicidal effects and blocked

excystation. In contrast, *A. castellanii* incubated with mannose alone and porphyrin alone did not exhibit anti-amoebic effect. Also, solvent controls such as RPMI, DMSO and 50% chloroform: methanol had no effect on the viability of *A. castellanii*. Consistently, pre-treatment with mannose-conjugated porphyrin reduced *A. castellanii*-mediated host cell cytotoxicity from 97% to 4.9%. In contrast, treatment with porphyrin, mannose or solvent alone had no protective effects on host cells. These data suggest that mannose-conjugated porphyrin has application for the targeted photodynamic therapy of Acanthamoeba infections and may serve as a model in the rationale development of therapeutic interventions against other eukaryotic infections.

*Keywords:* Acanthamoeba, mannose-conjugated porphyrin, photochemotherapy

## 9.23 CHARMS OF THE CHRM1 RECEPTORS IN PATHOGENIC EUKARYOTES

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The expression of an immunoreactive cholinergic G-protein coupled receptor (GPCR) of subtype M1 (CHRM1) and effects of agonist and antagonist drugs that bind to this receptor were tested against a clinical isolate of *Acanthamoeba castellanii* belonging to T4 genotype. An Anti-CHRM1 receptor antibody that binds to the human cholinergic CHRM1 receptors was used to perform immunocytochemistry and Western blotting to confirm the presence of an immunoreactive CHRM1 receptor subtype on *Acanthamoeba castellanii*. In vitro growth assays were performed by incubating *A. castellanii* (1 x 10<sup>5</sup> cells/mL/well) with various concentrations of agonist and antagonists of CHRM1 receptors in the growth medium in 24-well plates and incubated for 48 h at 30°C. Viability was determined using flow cytometry and Trypan blue exclusion staining. For controls assays, *A. castellanii* were incubated with

the solvent containing no drugs. Immunocytochemistry and relevant band in western blot performed showed expression of the CHRM1 receptor subtype like ligand binding site in *Acanthamoeba castellanii*. Of the drugs tested on the M1 receptor subtype, acetylcholine showed maximum proliferative effects and among the antagonists dicyclomine, a highly CHRM1 cholinergic receptor antagonist showed maximum amoebicidal effects (>80%) at mM concentrations. Other non-specific CHRM1 receptor antagonists like atropine and procyclidine inhibited *A. castellanii* growth, but they did not affect viability. Given the limited availability of efficacious drugs to treat amoebal infections, exploring and targeting GPCRs like CHRM1 cholinergic receptor subtype that are of survival significance for *Acanthamoeba* spp., could prove to be potential targets of therapeutic significance in managing *Acanthamoeba* keratitis (AK) and often fatal granulomatous amoebic encephalitis (GAE) caused by this pathogen.

**Keywords:** M1 muscarinic receptors, GPCRs in Amoeba, *Naegleria*, *Acanthamoeba* and *Balamuthia* spp.

## 9.24 PATHOGENESIS OF AMOEBIC ENCEPHALITIS

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Pathogenic free living amoeba like *Naegleria fowleri*, *Acanthamoeba* and *Balamuthia mandrillaris* spp., are known to cause fatal “amoebic meningoencephalitis” (AME) by acquiring different route of entries to the brain. The host immune response to these protist pathogens differs with from each other as evidenced by the postmortem gross and microscopic findings from the brains of the patients being affected. Coined with the expression, as the “brain eating amoebas”, which is making its way into journals and books, it gives the impression that the destructive cytotoxic enzymes

and the phagocytic competence of these amoebas are the prime cause of the cerebral damage. A detailed review of the literature, analysis of archived specimens and with experimental assays, here we show that the host immune response does a more extensive damage that incurs to the brain in infections caused by these free-living amoebas. Owing to the comparative sizes of these pathogens to our defensives leukocytes and antigen pre-sensitization, the human host immune system launches an amplified response that does more harm than a favor to the delicate neurons, resulting in the moth eaten appearance of the brain commonly referred in context with these pathogens as “Brain Eating Amoebas”. It is our understanding that in case of *Naegleria fowleri* the host immune response is dominated by acute inflammatory cytokines and that, in cases of *Acanthamoeba* and *Balamuthia* spp., it is the type IV hypersensitivity reaction of the prompt phase that fundamentally contributes to the neuronal damage. The further intensification of brain damage as expected could come from amoeba secreted enzymes that causes the irreversible brain damage, a phenomena which very well could continue even after the death of the patient.

**Keywords:** Granulomatous Amoebic Encephalitis., Protists, *Acanthamoeba*, *Balamuthia*, *Naegleria*,

## 9.25 IMPROVING DIAGNOSIS OF PULMONARY TB IN CHILDREN USING STOOL SPECIMENS AS ALTERNATE TO GASTRIC ASPIRATE USING XPRT MTB/RIF ASSAY IN A HIGH BURDEN SETTING

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**Introduction:** Tuberculosis (TB) is one of the major causes of death among children. TB has the highest morbidity and mortality in children aged < 5 years and especially, in those aged < 2 year. Due to the

paucibacillary nature of the disease it is difficult to obtain appropriate specimens for testing - young children do not produce sputum and often swallow rather than expectorate making it difficult to sample. Methods for testing for pediatric pulmonary TB in non-invasive specimens such as, stool as compared with invasive specimen such as, gastric lavage aspirates (GA) has been shown to be effective. Most often Mycobacterium tuberculosis (MTB) is tested in GA by culture. Culture is however expensive, not readily available and takes 4-6 weeks for a result. The Gene Xpert MTB/RIF assay (Cepheid, USA) is a rapid nucleic acid amplification method which simultaneously detects M. tuberculosis and resistance to rifampicin, a first-line anti-tuberculous agent. Therefore, Xpert TB is a good alternative to mycobacterial culture. Stool is an easily obtained non-invasive specimen for testing of pulmonary TB in children. *Objective:* We have evaluated the utility of testing for MTB in gastric aspirates and stool samples using both Xpert MTB/RIF test and MTB culture in pediatric patients suspected of having pulmonary TB *Methods:* During the period Oct 2014 – February 2015, twenty one children aged (1 – 10 years) were recruited from the Department of Pediatrics, Civil Hospital, DUHS, and the AKUH. Patients were recruited if they had a TB score  $\geq 5$ , based on the Pakistan Pediatric Association Scoring System. Gastric lavage specimens were tested by MTB Culture assay and the Xpert MTB/RIF test.

*Results:* Of the 21 GA samples tested, 5 (24%) were positive by Xpert/MTB testing and 4 (19%) by MTB culture. In addition, 19% of the stool samples tested by Xpert/MTB assay were positive. Of the five GA Xpert positive samples, 4 were positive by stool testing. GA Xpert positive patients were n=3, aged (0-3 years) and n=2, 10-12 years. Of the MTB positive patients, 4/12 had a TB score of 6-10 whilst one had a score 11-15.

*Conclusion:* Testing of gastric aspirates by Xpert MTB/RIF assay in children may be a rapid method of diagnosis for pulmonary TB. Our preliminary data on testing of stool specimens indicates that these are more likely to be positive by the Xpert MTB/RIF assay in children with a high TB score. Rapid detection of TB in children will aid in treatment and management of this disease.

*Keywords:* M. tuberculosis, Xpert MTB/RIF test, Pediatric pulmonary TB

## 9.26

### UTILITY OF PANEL TESTING FOR DIAGNOSIS OF H1N1, INFLUENZA A AND B VIRUSES

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*Introduction:* Influenza (flu) is a contagious respiratory illness caused by RNA viruses belonging to family Orthomixoviridae which may include seasonal Influenzae A and B and pandemic H1N1 strains. Clinical symptoms of Influenza infection may include fever, headache, dry cough, sore throat, and runny nose which can be similar to those caused by other infectious agents including Mycoplasma pneumoniae, adenovirus, respiratory syncytial virus, rhinovirus, parainfluenza viruses, and Legionella spp. Hence, accurate and timely diagnosis is important for better treatment of patients with respiratory illness. As part of the Clinical Lab, we are now using the RealStar® Influenza S&T Real-time PCR in vitro diagnostic test, for the detection of human Influenza A and B and the current pandemic H1N1 strains.

*Methods:* Nasopharyngeal swabs from fifteen patients suspected with influenza were tested at the Section of Molecular Pathology, AKUH. RNA was extracted from nasopharyngeal swabs and tested for the presence of Influenzae A, B and H1N1 RNA using the RealStar Influenza S&T RT-PCR Kit 2.0. This assay utilizes reverse transcriptase to convert RNA into complementary DNA, polymerase chain reaction for the amplification of specific target sequences and fluorescent labeled target specific probes for the detection of amplified DNA. Internal Control is included to identify possible RT-PCR inhibition. Negative and positive controls were also run with the samples.

*Results:* Of the 15 samples tested, two were found to be positive for H1N1 Influenza A virus RNA and seven were positive for other Influenza A virus

RNA. The remaining 6 samples were negative for H1N1, other Influenza A and B viruses. The nine patient's positive for influenza viruses had a clinical history coincident with acute respiratory distress.

*Conclusion:* We highlight the utility of testing for Influenza viruses using a panel assay which targets both epidemic (H1N1) and Influenza A and B viruses. Parallel testing of these targets increases the efficiency of influenza diagnosis with a rapid turnaround time. This would allow early intervention and improve patient management and outcome.

*Keywords:* H1N1, Influenza A, Influenza B

### 9.27

#### SOCS1 AND CXCR3 EXPRESSION IS ASSOCIATED WITH CASEOUS NECROSIS IN GRANULOMAS FROM PATIENTS WITH TUBERCULOUS LYMPHADENITIS

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*Background:* T cells and macrophages mediate Mycobacterium tuberculosis containment within a granuloma. Such control involves cytokines such as IFN- $\gamma$ , TNF- $\alpha$  and IL-12, chemokines such as CXCL9, CXCL10 and their receptor CXCR3. Cytokine responses via JAK/ STAT pathway are regulated by Suppressor of Cytokine Signaling (SOCS) proteins. SOCS1 and SOCS3 have been shown to be up-regulated in peripheral blood cells of patients with tuberculosis (TB) and associated with a reduced IFN- $\gamma$  response. Here we investigated the expression of SOCS molecules in lymph node granulomas from patients with TB as compared with healthy controls.

*Methods:* The expression of CD3, CD68, SOCS1, SOCS3 and CXCR3 markers in lymph nodes from patients with tuberculous lymphadenitis (LNTB n=25) and those with benign reactive lymph nodes (r-LN, n=10) was evaluated by immunostaining.

*Results:* CD3+ T cell density was reduced in LNTB as compared with r-LN (p=0.02). However, the

expression of SOCS1, CXCR3 and CD68 in LNTB and r-LN was similar. In LNTB, we observed positive correlations between SOCS1 and CXCR3 (p=0.718, p=0.016) and CD3 and CD68 (p=0.720, p=0.006). SOCS1 expression was increased in LNTB, associated with granulomas which had caseous centers. *Conclusion:* Tuberculous lymph nodes overall had fewer T cells but with a relatively high frequency of CXCR3, a marker for Th1 differentiation than reactive lymph nodes. SOCS1 and CXCR3 expression were also correlated, suggesting that presence of Th1 cells coincides with a down-regulation of the IFN- $\gamma$  responses. SOCS1 expression was more conspicuous in those LNTB with extensive caseous lesions. We speculate SOCS1 can be involved in the dissemination of M. tuberculosis from cavitating granulomas.

*Keywords:* Tuberculosis, SOCS1, Granuloma

### 9.28

#### RAPID DETECTION OF NAEGLERIA FOWLERI CASES BY PCR IN KARACHI DURING 2014

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*Background:* Naegleria fowleri is a thermophilic free-living amoeba found in freshwater worldwide. It is the cause of a rare, but potentially fatal disease in humans known as primary amoebic meningoencephalitis (PAM) acquired through aquatic activities. N.fowleri enters nasal canal during bathing/ritual ablution and penetrate through damaged olfactory mucosa and olfactory neuron receptors and migrate through cribriform plate to brain. The disease progresses rapidly, causing death within an average of 10 days from exposure. This study presents N.fowleri detection data of 2014 at Aga Khan University Hospital and to underscore the utility of PCR based diagnosis.

*Material and Method:* A total of 48 CSF specimens from patients with meningitis symptoms were received for testing of N. fowleri by real-time PCR



at Section of Molecular Pathology, The Aga Khan University Hospital Clinical Laboratory, Karachi, during May-December 2014. DNA was extracted and amplified using primers targeting 18S rRNA gene of the Naegleria together with a fluorescent labeled probe specific to the N. fowleri sequence. In parallel, a wet preparation of CSF from the same specimen was examined under the microscope. Pseudopodia forming, actively motile cellular structures were presumptively identified as N. fowleri by microscopy.

**Result:** All CSF specimen received were from Karachi. The mean age of patients was 39 years with a range 15-80 years. Of the 48 CSF samples tested, 10 (21%) were found to be positive by PCR. Of ten positive cases 9 (90%) were male with median age of 30 years. 10 PCR positive cases, A positive CSF wet prep result was found in 4 (40%) out of 10 PCR positive cases.

**Conclusion:** PAM is a fatal disease therefore prompt and accurate diagnosis is critical in order to initiate appropriate antimicrobial therapy. PCR is therefore the method of choice for detection of N. fowleri in CSF specimens, and is more sensitive and specimen then microscopic wet prep analysis

**Keywords:** CSF, PAM, PCR

## 9.29

### MONITORING POLYMORPHISM IN PLASMODIUM FALCIPARUM CHLOROQUINE RESISTANCE TRANSPORTER (PFCRT) AND MULTIDRUG RESISTANT (PFMDR) GENE FOLLOWING INTRODUCTION OF ARTEMISININ BASED COMBINATION THERAPY

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**Background:** Resistance to mainstay antimalarial has become wide spread, WHO has recommended artemisinin-based combination therapy (ACT) for the treatment of uncomplicated P.falciparum

malaria. Pakistan adopted Artesunate + SP as ACT for the treatment of uncomplicated P.falciparum malaria in 2008. It is therefore important to conduct studies to monitor changes in the sensitivity of the parasites in response to introduction of ACTs.

**Objective:** The aim of this study is to monitor polymorphisms in the pfcr1 and pfmdr genes after the withdrawal of chloroquine and introduction of Artemisinin based Combination Therapy (ACT).

**Materials And Methods:** Blood samples from 40 patients with blood slide confirmed P.falciparum mono-infections were collected post ACT introduction 2009-2010. DNA was extracted using commercially available extraction kit. Single nucleotide polymorphisms in the P.falciparum chloroquine resistance transporter (pfcr1 K76T), multidrug resistance (pfmdr1 N86Y), were determined using a multiplex PCR-RFLP based methods.

**Results:** All isolates (n=40) showed the wild type allele of the pfcr1 76 K (100%). The prevalence of 86Y, the resistant type of pfmdr, had risen from 27.5% in 2005 to 60% in 2010 (p= 0.006). These were compared with patient samples collected in 2005 having confirmed Plasmodium falciparum mono-infection in which majority were 76T resistant type (97.5%). Significant increase in wild type alleles of Pfcrt was observed after withdrawal of Chloroquine (p= 0.0001).

**Conclusion:** Artemisinin derived combination therapy has resulted in a sharp decrease in chloroquine resistance. This may suggests the possibility of reintroduction of chloroquine. However, it is suggested that clinical treatment failures need to be assessed using these tools to monitor extent and impact of drug pressure.

**Keywords:** drug resistance, P.falciparum, artemisinin

### 9.30 VIVAX MALARIA AND CHLOROQUINE RESISTANCE: A NEGLECTED DISEASE AS AN EMERGING THREAT

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**Introduction:** Emerging resistance to chloroquine (CQ) in *Plasmodium vivax* poses huge burden on health of millions of people exposed to the risk of vivax malaria. CQ is the recommended anti-malarial drug for treatment of *P.vivax* infection. However, reports of CQ resistance are consistently being documented worldwide. In recent year number of sever malaria cases are increasingly reported from Pakistan.

**Study Settings & Methods:** In this study, two in vivo CQ resistant cases of *P.vivax* presented at Aga Khan University Hospital, Karachi were analyzed for molecular markers of drug resistance. Blood samples from patients were microscopically confirmed for *P.vivax* mono-infection. DNA was extracted from patient blood samples and amplified using PCR/RFLP for genotyping and drug resistance associated markers *pvm*sp-1, *pv*csp, *pvd*hfr, *pvd*hps and *pv*crt-0.

**Result:** Genotyping analysis revealed that the samples carried *pvm*sp-1 Type 1 and *pv*csp VK 210 repeat types. Furthermore, analysis of sulphadoxine-pyrimethamine (SP) resistance associated mutations detected presence of 117N, 50I and 119K mutations ;both 117N and 50I mutation have been associated with emerging resistance against SP implying that both patients were infected with SP resistant strain of *P.vivax*. Interestingly, no mutation was observed in the *pv*crt-0 gene.

**Conclusion:** This is the first report of *P.vivax* Chloroquine resistance malaria in Pakistan. Molecular markers along with In vitro susceptibility testing of *P. vivax* may provide a useful tool to highlight areas of emerging chloroquine resistance. In conclusion, it is suggested that clinically treatment failure cases need to be analyzed with

these tools so the extent and impact of drug pressure can be monitored effectively.

**Keywords:** chloroquine, drug resistance, *P.vivax*

### 9.31 TREND OF DENGUE POSITIVE CASES AT AKUH FROM NOVEMBER 2012 TO OCTOBER 2014

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**Background:** Dengue Virus belongs to Family Flaviviridae including 4 serotypes transmitted by *Aedes aegypti* and *Aedes albopictus*. Reinfection with a second serotype results in a more severe complication such as dengue shock syndrome and hemorrhagic fever. The diagnosis of DV requires the use of direct tests (DV RNA by PCR or DV NS antigen detection) in the early phase of infection, with 1 – 5 days of fever and clinical symptoms. After this period the Dengue IgM assay is used to detect dengue infection based on host antibody responses

**Method:** Between Nov 2012 and Oct 2014 (n=11516) samples were received for Dengue virus testing in the AKUH clinical Laboratory In this 24 month period samples received for testing were;(n=137) by Dengue Virus PCR; (n=4580) by Dengue NS1 Antigen and (n=13918) sample by Dengue IgM.DV RNA PCR is a real-time based flourogenic assay which detects DEN genotypes 1-4. DV NS antigen assay is an immunochromatographic strop (PanBio, USA) and DV IgM is an ELISA assay, Pan Bio, USA

**Results:** Amongst the samples tested 6946; n=137 samples were positive by Dengue Virus PCR, n=1514 samples were Positive by Dengue NS1 Antigen and n=5372 were positive by Dengue IgM Antibody based testing. The highest number of positive Trend of Dengue Positivity was increased in November 2012 (n=280) with a reduction from

February to April (n=91)2013 with increase in August to October 2013 in which (n=3490) samples were positive. And again trend of positivity increased in the month of August 2014 to October 2014 in which (342) sample were positive.

**Conclusion:** Multiple Diagnostics modalities are essential for detecting Dengue Virus at different stages of disease. The Laboratory data showed increase rate of Dengue diagnosis in the post monsoon period i.e. in September to November. Improved sanitation and management of mosquito control is required to reduce the incidence of Dengue virus in Pakistan.

**Keywords:** dengue, Dengue IgM, ns1 antigen

### 9.32

#### ANALYSIS OF HUMAN CYTOMEGALOVIRUS SPECIFIC T CELL RESPONSES IN HEALTHY INDIVIDUALS

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**Introduction & Objective:** Human Cytomegalovirus (HCMV), the largest herpes virus is known to be distributed throughout the world. Chronic reactivation of HCMV in a seropositive adult is associated with T-cell memory inflation and immune risk profile. This can give rise to immunosenescence in elderly HCMV-seropositive individuals ultimately leading to increased susceptibility to infections. Our objective was to determine the frequencies and phenotypic characteristics of HCMV-specific T cell responses in healthy seropositive individuals.

**Materials & Methods:** Peripheral blood mononuclear cells (PBMCs) from 12 healthy volunteers were stimulated with HCMV antigens and examined for the phenotypic markers (CCR7, CD45RA, CD28 and CD57) and the effector molecule (IFN- $\gamma$ ) by multicolour intracellular

cytokine staining. Cells were acquired using FACS Aria III and data was analyzed using FlowJo.

**Results:** All 11 HCMV seropositive volunteers elicited T cell responses to at least one of the antigens. Collectively, T cell responses were directed more towards pp65 protein especially for CD4+ T cells (CD4: 72.27% vs CD8: 54.54%). The CD8+ T cell responses ranged from 0.08% - 44%, 0.09% - 3.2%, 0.15% - 4% for IE-1, pp65 and pp50 proteins respectively. The average CD4+ T cell response to HCMV lysate was 0.68% of total CD4+ cells. Little CD4+ responses to gB and H were also observed (range 0.07% - 0.135%). HCMV-specific T cells predominantly had effector and highly differentiated phenotype.

**Conclusion:** Our preliminary data present variable HCMV-specific T cell responses in healthy seropositive individuals. The high frequency of differentiated HCMV-specific T cell subsets suggests a significant influence of HCMV on the immune system of healthy individuals.

**Keywords:** Cytomegalovirus, T cell, Intracellular Cytokine Staining

### 9.33

#### ASSESSING THE UTILITY OF INTERFERON GAMMA RELEASE ASSAY FOR SCREENING OF MYCOBACTERIUM TUBERCULOSIS INFECTION IN AN ENDEMIC AREA

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**Introduction:** Pakistan ranks 5th in the high tuberculosis burden countries worldwide. Although pulmonary tuberculosis is the major cause of disease transmission, extra pulmonary disease remains a major cause of mortality. Extra pulmonary disease can occur in virtually any organ or tissue without the involvement of lung and therefore remains a major diagnostic and management dilemma in resource poor countries. We hope to understand Interferon gamma release

assay (IGRA) utility for the screening of *M. tuberculosis* infection. IGRAs are shown to be a useful screening tool for *M. tuberculosis* infection in low endemic settings. IGRAs are not affected by BCG vaccination. Studies describing the utility of IGRAs in the screening of *M. tuberculosis* infection in endemic settings, children and immune-compromised individuals are scarce. Hence in this study we aim to explore the utility of IGRAs by correlating positive or negative IGRA result with other clinical parameter of tuberculosis in high TB endemic settings *Methods:* IGRAs performed in a molecular pathology section clinical lab on 151 samples from July 2013 to July 2014 were evaluated and correlated with the clinical parameters available in the medical records of same patients.

*Results:* Of the 151 samples tested, 46 were found to be IGRA positive. Among these 28 were proven by positive culture, smear, histopathology or chest X-ray findings while 18 had no clinical evidence of active disease and might have latent infection. The remaining 105 samples were IGRA negative as well as culture negative.

*Conclusion:* Due to high endemicity of TB, MTB infection cannot be ruled out in chronic conditions. However, this study gives important baseline information about the utility of test in evaluating *M. tuberculosis* infection in endemic population.

*Keywords:* *M. tuberculosis*, IGRA, TB

### 9.34

#### CLINICAL FEATURES AND NASOPHARYNGEAL CARRIAGE OF VIRAL PATHOGENS AMONG CHILDREN UNDER-FIVE WITH PNEUMONIA IN RURAL NORTHERN PAKISTAN

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*Objective:* To describe clinical features and nasopharyngeal (NP) carriage of viral pathogens among children with pneumonia in a cohort study (2012-2014) in Oshikhandass, Gilgit-Baltistan.

*Introduction:* Pneumonia is a major cause of morbidity and mortality among children in low-resource settings. Carriage of viral pathogens may provide evidence of viral etiology, though mixed bacterial/viral etiology cannot be excluded. Few studies of viral carriage have been done in community settings.

*Methods:* Lady Health Workers used WHO IMCI criteria to identify pneumonia cases during weekly surveillance of children from April 2012-March 2014. NP swabs taken from consenting participants were processed using PCR from April 2012-November 2013 with the Luminex® platform (20 viruses) and Taqman® from December 2013-March 2014 (RSV, influenza).

*Results:* During surveillance, 238 children presented with pneumonia; 7/238 (2.9%) had severe pneumonia. Average presenting duration of illness was 2.2 days. Wheezing was reported by history in 30.3% and detected by exam in 29.4%; 28.8% had axillary temperature >100.4 F°. NP data were available for 197/238 (82.8%) pneumonia cases. Of these, 73.6% had at least one detectable virus, including RSV (19.3%) and influenza (4.1%). Luminex testing on 172 pneumonia cases showed positive results for enterovirus/rhinovirus in 87 (50.6%), coronaviruses 15 (8.7%), parainfluenza viruses 13 (7.6%), adenoviruses 11 (6.4%), metapneumovirus 10 (5.8%), and bocavirus 2 (1.2%).

*Conclusion:* Enterovirus/rhinovirus and RSV were the predominant viruses detected in this cohort; detection of influenza during this two-year period was minimal. Carriage of other viruses known to cause pneumonia was detected. Clinical correlation with virus carriage is underway.

*Keywords:* Pneumonia, Child Health, Nasopharynx/microbiology

### 9.35 POST-OPERATIVE STENOTROPHOMONAS MALTOPHILIA VENTRICULITIS. CASE SERIES

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**Introduction:** *Stenotrophomonas maltophilia* is widely known to cause opportunistic infections in immunocompromised hosts and a variety of nosocomial infections particularly associated with central catheters and lower respiratory tract. Meningitis due to *Stenotrophomonas maltophilia*, is rare but an emerging problem due to global increase in the incidence of *Stenotrophomonas* infections. Since then at least 18 such cases (including pediatrics) from 16 case reports have been described in literature till yet, ours would be 19<sup>th</sup> and 20<sup>th</sup> cases in the series

**Case 1:** 60 year old lady with basal ganglia bleed on day 20 of EVD placement (due to obstructive hydrocephalus) developed fever. Her initial CSF analysis was suggestive of meningo-ventriculitis and culture grew *Stenotrophomonas maltophilia*. She was treated with intrathecal polymyxin B for 4 days, intravenous polymyxin B and oral co-trimoxazole (TMP-SMX) for 21 days. All her subsequent CSF cultures remained negative and she successfully underwent VPS placement on day ten of therapy.

**Case No 2:** Young male with history of craniotomy secondary to aneurysmal bleed and replacement of VP shunt multiple times in past secondary to shunt blockage. He was admitted with fever and headache for 1 week. Ventriculo peritoneal shunt removed again because of blockage and extraventricular drain (EVD) placed. His CSF c/s grew *Stenotrophomonas maltophilia*. He was started on intravenous co-trimoxazole and ceftazidime for 21 days with clinical and laboratory improvement at 72 hours. Serial CSF culture were negative subsequently.

**Conclusion:** High risk features for *Stenotrophomonas* meningitis include neurosurgical intervention and exposure to broad spectrum antibiotics. TMP-SXM with ceftazidime alone or in

combination for 2 to 3 weeks is the treatment of choice.

### 9.36 PREDICTIVE VALUE OF QUANTIFERON- BASED INTERFERON- $\gamma$ RELEASE ASSAY (IGRA) FOR ACTIVE TUBERCULOSIS IN PATIENTS AT AKUH

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**Background:** The QuantiFERON-TB Gold In-Tube assay (QFT-GIT) (Cellestis Ltd., Australia) is FDA approved blood-based test that essentially measure the presence of specific *M. tuberculosis* reactive T-cells sensitized by infection with *M. tuberculosis*. Pooled evidence suggests that QFT-GIT is 84% sensitive and 99% specific in identifying infection with MTB. Primary indication for IGRA remains screening for latent TB. Although not directly diagnostic for active TB, IGRAs are often used by clinicians as an additional tool in the diagnosis of active TB.

The predictive value of IGRA/QFT as supportive evidence or exclusion of active TB remains to be studied in our population

**Objective:** To determine the sensitivity and specificity and positive and negative predictive value of IGRA in patients with suspected pulmonary or extrapulmonary tuberculosis.

**Methods:** Patients presenting to AKUH with prolonged fever, CNS lesions, vertebral osteomyelitis, unexplained effusions or pulmonary infiltrates or inaccessible pathology at other body sites, over a period of one year (2013-2014) were studied. QFT was done as a part of work-up. In addition to clinical information, radiological investigations, histopathology, microscopy and culture results were noted.

**Conclusions:** QFT responses may be used as a supportive evidence of active TB when cultures cannot be obtained and in patients with other comorbid conditions where coexistence of TB is strongly suspected clinically.

Both positive and negative QFT responses are useful in facilitating appropriate management decisions in our patients.

*Keywords:* IGRA, TB, diagnosis

### 9.37

#### ONYCHOMYCOSIS DUE TO DRECHSLERA SPECIES- AN UNUSUAL PRESENTATION

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*Introduction:* Onychomycosis is a common infection of the nails. Drechslera is a genus of fungi. It can cause sinusitis, hay fever, exacerbation of bronchial asthma, eye infection. Only 10 cases of human infection with this organism have been reported in the literature. To the best of our knowledge no case of Onychomycosis caused by Drechslera species has ever been reported so far.

*Case Report:* The case comprised a young patient presented with nail alteration in all the toe and foot nails for about 4 months. On examination the nails were found to be dystrophic, discolored and brittle. Primary culture on Sabourauds glucose agar showed rapid growth with brownish filaments. The fungus was identified as Bipolaris Drechslera. The itraconazole 400mg/day pulse therapy was started and the patient was advised to regularly visit for further follow up.

*Discussion:* Organisms belonging to Drechslera species are rare. Many species of Drechslera are a plant pyrogen, of grasses in particular. It has been reported to cause corneal infection of the eye as well as keratitis, sinusitis, osteomyelitis and brain abscess. Clinically Onychomycosis is presented in different ways. Mc.Ginnis et al (1986) have reviewed the isolates from human and animal disease purported to be Drechslera and concluded that all pathogenic isolates examined actually belong to the genera Bipolaris. Drechslera bisepta has recently been reported from a brain abscess. A review of the literature suggests that infections caused by Drechslera species can infect a healthy

host. No case of Onychomycosis caused by Drechslera species has ever been reported so far.

*Conclusion:* This being a rare case of Onychomycosis more studies should be done regarding the role of Drechslera species causing Onychomycosis.

*Keywords:* Onychomycosis, Drechslera, Fungus

### 9.38

#### FACTORS ASSOCIATED WITH ONYCHOMYCOSIS IN PSORIATIC NAILS – A MATCHED CASE CONTROL STUDY AT TERTIARY CARE CENTERS OF KARACHI.

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*Background:* Prevalence of psoriasis varies from 0.1 -11.8% across the world. Psoriatic nail changes resemble onychomycosis, therefore, it is clinically difficult to decide whether these changes are due to psoriasis or onychomycosis or both conditions existing together.

This study is to identify the factors associated with the presence of fungus in psoriatic nails and to ascertain species by fungal culture. No such study from our population has been published before.

*Methodology:* It was a matched case control study with a ratio of 1:2, conducted in the dermatology clinics of 3 tertiary care centers of Karachi. A sample of 471 was collected, 157 cases and 314 controls, during one year period. Cases enrolled had psoriasis with nail involvement; controls were matched with gender and age, from dermatology clinics with problems other than psoriasis and diseases involving nails.

After informed consent a detailed questionnaire was filled, NPSI (psoriatic nail area severity index) scoring was done for all cases and for controls having nail dystrophy. Nail clippings were taken from dystrophic nails and sent for microscopy and culture. HbA1c was done for all cases and controls.

**Results and Conclusion:** Among cases, nail clippings showed positive culture in 33.7%, whereas in controls, it was 4.45%. There is a significant risk of having onychomycosis in patients with psoriatic nail changes as compared to controls. The most commonly isolated fungi were candida in the psoriasis group and in controls. An overall multivariable analysis showed, history of psoriasis among first degree relative ( mOR 7.1, 95% CI: 1.9-26), current smokeless tobacco users (2.9 95% CI 1.2-7.4) and current smokers ( mOR 3.2 95% CI 1.2-8.8) independently related to psoriasis.

**Keywords:** psoriasis, onychomycosis, nails

### 9.39

#### A CASE OF DENGUE FEVER COMPLICATED BY INTERCOSTAL ARTERY HEMORRHAGE: A UNIQUE COMPLICATION

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**Introduction:** During last few decades there have been increasing reports of dengue infection with unusual manifestations. We present a case of dengue fever complicated by rupture of an intercostal artery leading to a large hematoma which was treated successfully with radiological angio-embolization. To our knowledge this is a first case of dengue fever complicated by spontaneous intercostal artery hemorrhage.

**Case presentation:** A 67 years old male came with fever for last four days. There was no history of trauma or fall. Investigations revealed hemoglobin 12.3 g/dl, white cell count 8000/mm<sup>3</sup> with neutrophils of 75.5 % and platelets 98,000/ mm<sup>3</sup>. PT was 9.6 seconds (INR 0.91) and APTT was 29.5 seconds. ALT 91 IU/L and AST 189 IU/L. Dengue serology was positive for IgM. On the third day of admission patient complained of pain at his right upper abdomen. Examination revealed a large bruise with an ill defined mass at right upper abdomen. Patient was hypotensive as well. Repeat investigations revealed hemoglobin of 7.0 g/dl and platelets 173,000/ mm<sup>3</sup>. Repeat PT and APTT were

10.7 (INR 1.02) and 30.4 seconds respectively. Patient undergone packed cell transfusions. CT scan abdomen revealed a large haematoma in between the right abdominal wall measuring 23 x 6.3 x 16 cm. Patient underwent angiography which revealed pseudo-aneurysm with extravasation of contrast from right 11th intercostal artery (Fig. 1A). Successful embolization of the artery performed under radiological guidance (Fig. 1B). Hematoma was not drained in view of its tamponade effect for hemostasis. Repeat ultrasound showed regression in the size of hematoma. He was discharged after a stay of few days in hospital.

**Conclusion:** Atypical hemorrhagic manifestations of dengue fever may lead to significant morbidity and mortality unless they are picked up and managed early. They can occur even with normal coagulation profile and need high suspicion of diagnosis.

**Keywords:** Dengue, intercostal artery, hemorrhage, angio-embolization

### 9.40

#### GENOTYPE LINE PROBE ASSAY AS A RAPID TOOL FOR THE DIAGNOSIS OF SMEAR-NEGATIVE TUBERCULOSIS IN BRONCHOALVEOLAR LAVAGE FLUID IN PAKISTAN

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**Background:** The Genotype Line probe assay (MTB DR Plus) has been validated in sputum for rapid diagnosis of tuberculosis (TB) and isoniazid and rifampicin resistance. Its utility in bronchoalveolar lavage (BAL) especially in smear negative cases is unclear.

**Objective:** To evaluate the accuracy of the MTB DR Plus in BAL in sputum scarce/smear negative patients.

**Methods:** Cross sectional study (Jan-Dec 2013) at Aga Khan University, Karachi Pakistan. Suspected pulmonary TB patients who underwent

bronchoscopy were selected. Specimens on which both culture and MTB DR Plus was performed were analyzed. Sensitivity and specificity of MTB DR Plus with culture as reference method was determined.

**Results:** Of the 200 patients, 34 had culture-confirmed TB. MTB DR Plus was positive in 23/34 patients (Sensitivity 68% & Specificity 96%). A significantly lower proportion was detected by smear compared with MTB DR Plus (32% versus 68%;  $p < 0.001$ ). All smear positive (Sm+) /culture positive (CS+) cases were MTB DR Plus positive. The sensitivity and specificity of MTB DR Plus in Sm+/CS+ cases was 100% and 96% and in Sm-/CS+ cases was 52% and 96% respectively. 160 of 166 culture negative patients were also MTB DR Plus negative. 2 cases of MDR TB was identified by MTB DR Plus.

**Conclusion:** MTB DR Plus detected TB cases more accurately and rapidly in BAL than smear with early detection of MDR TB. The use of MTB DR Plus in BAL for TB diagnosis will lead to early and appropriate treatment of such cases in our setting.

#### 9.41 ENDOBONCHIAL TUBERCULOSIS PRESENTING AS NON-RESOLVING PNEUMONIA- A CASE REPORT

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Karachi*

**Introduction:** Endobronchial tuberculosis, defined as tuberculous infection of the tracheobronchial tree, usually presents in young adults, a tumor-like presentation of tuberculosis is very rare, often mistaken as carcinoma, carcinoid or adenoma, about 10–40% of patients with active pulmonary tuberculosis have EBTB. Tracheobronchial stenosis is a complication, with incidence up to 68% incidence in the initial 4–6 months, with further rise with disease progression. Goal of treatment is to eradicate tubercle bacilli with prevention of bronchial stenosis. ATT is the main course of treatment.

**Case:** 65 year old gentleman, current smoker, presented with fever, dry cough, and weight loss for 3 months, already treated for community acquired pneumonia, father was diagnosed and treated for TB. His CBC, creatinine, lytes were normal, chest X-ray showed persistent right sided alveolar infiltrates and diagnosed as right sided non resolving pneumonia. Sputum induction was done but failed, bronchoscopy was done, showed three vascular endobronchial nodular lesion, with smooth margins and shiny surface easily removable, at the carina at the opening of the right main bronchus anteriorly, bronchus intermedius and right middle lobe, biopsy and lavage taken, smears of AFB, fungal, gramstain came out to be negative, fungal and bacterial culture came out to be negative. Biopsy showed acute and chronic inflammation with ill-defined granulomas. He was started on first line ATT only, later the culture showed growth of pansensitive mycobacterial tuberculosis. The patient responded well.

**Conclusion:** Pulmonary TB is endemic in Pakistan. Early diagnosis and treatment are pivotal. This case reminds that in a country where TB is endemic, endobronchial tuberculosis must be considered in differential diagnosis of endobronchial lesions as with timely diagnosis and commencement of early treatment complications can be prevented.

**Keywords:** Endobronchial Tuberculosis, Non resolving pneumonia

#### 9.42 ALTERNATE EFFLUX PUMP MECHANISM CONTRIBUTE TO DRUG RESISTANCE IN EXTENSIVELY DRUG RESISTANT ISOLATES OF MYCOBACTERIUM TUBERCULOSIS

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**Background:** The extensively drug-resistant tuberculosis (XDR-TB) has emerged worldwide as one of the biggest threats to public health and TB control programs. The XDR-TB is defined as



tuberculosis (TB) caused by *Mycobacterium tuberculosis* (MTB) strains that are resistant to at least rifampin (RIF) and isoniazid (INH) among the first-line anti-TB drugs and resistant to a fluoroquinolones and to at least one of the three injectable second line drugs. The resistance to first and second line anti-tuberculous drugs has been associated with single nucleotide polymorphisms (SNPs) in particular genes. It has been shown that efflux pumps play an important role in mechanism of resistance in bacteria including MTB. Upregulation of these efflux pumps can decrease the intracellular concentration of drugs and reduce their efficacy.

**Material and Methods:** Whole Genome Sequencing (WGS) was performed on (n=37) XDR MTB strains using Illumina paired end HiSeq2000 technology, the WGS raw sequence data was mapped distinctively to H37Rv reference genome to identify SNPs using the SAMtools/BCFtools. We also analysed the SNPs in the efflux pump genes of (n=32) XDR MTB using the KVarq software and compared with H37Rv reference genome.

**Results:** Overall, we observed that 9(28.13%) XDR MTB strains had nsSNPs (aspartic acid to histidine) in the *drmA* efflux pump gene at position 3273138. Of these, 5 (15.6%) XDR MTB strains showed no mutations in *rpsL*, *rrs*, *gidB* and *gyrB* genes. All 5 XDR MTB strains were fluoroquinolone (ofloxacin) resistant, 3 were streptomycin sensitive and 2 streptomycin resistant. One XDR MTB strain was ethambutol, streptomycin and fluoroquinolone (ofloxacin) resistant with no mutation in *rpsL*, *rrs*, *embB* and *gyrB* genes.

**Conclusion:** Our data shows nsSNP in the *drmA* efflux pump gene which may result in the upregulation of drug efflux mechanism in the MTB strains. It is therefore imperative to understand the mechanism of efflux and their role in drug resistance, which will enable the identification of new drug targets and development of new drug regimens to counteract the drug efflux mechanism of MTB

## **Neurosciences/Mental Health**

### 10.3 REMISSION OF PSYCHOSIS IN TREATMENT RESISTANT SCHIZOPHRENIA FROM A SEIZURE – A CASE REPORT

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*Background:* Schizophrenia is a psychiatric disorder which carries significant burden of care and disability for patients and their families. The diagnosis of treatment resistant schizophrenia is made after failure of multiple optimum medication trials. Side-effects of clozapine pose major hindrance to management.

*Objectives:* To examine role of seizures in remitting positive symptoms present in treatment resistant schizophrenia.

*Method:* Ms U was diagnosed with schizophrenia when she was 21 years old, with early symptoms of fearfulness and auditory hallucinations. Despite multiple trials of medications, she did not respond. Her symptoms and functionality deteriorated and so clozapine was started. In the in-patient unit she had a seizure which was followed by tapering of clozapine dose and addition of Epival. Her symptoms remitted and functionality turned to baseline.

*Results:* Ms U had chronic mental illness that did not respond well to multiple antipsychotics. Thus she had to be managed on Clozapine but its side effects were quite disabling but one of its side-effects improved psychotic symptoms and she continued her routine activities as before.

*Conclusions:* The case illustrates the significance of electroconvulsive therapy (ECT) in patients suffering from treatment resistant schizophrenia (TRS). Seizure is a form of natural ECT. Extensive literature review demonstrates beneficial effect of ECT on TRS and also concomitant use of ECT with clozapine.

*Keywords:* Treatment resistant schizophrenia, electroconvulsive therapy, clozapine

### 10.4 PRESENTATION OF DELIRIOUS MANIA IN PAKISTAN

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*Background:* Delirious mania is an acute syndrome of excitement, delirium, and psychosis with high mortality rates if untreated. Frequently, catatonic signs are also present. Modern literature on clinical characteristics and treatment of this condition is scarce, consisting mainly of case reports and review articles. There is no published literature on delirious mania in Pakistan. It is frequently misdiagnosed and unrecognized by the clinicians resulting in extensive medical and neurological work up and increased morbidity and mortality. We hypothesize that presentation of delirious mania has strong association with Jinn or demonic possession in Pakistan.

*Methods:* We reviewed medical records of all patients both inpatient and outpatient seen by the author (QK) at the Aga Khan University hospital from Nov 2013 until May 2014 and diagnosed with bipolar I, manic or mixed episode, with or without psychosis according to DSM IV-TR. Besides demographic information we also recorded information about the presence or absence of delirium, catatonic features, phenomenon of Jinn or demonic possession and any religious or spiritual treatment received. Hospital ethics committee exempted the study from full review as it did not involve human subjects directly or any intervention.

*Results:* Out of the total 73 people diagnosed with Bipolar I disorder, 17 had Delirious mania and 5 Out of these 17 were associated with Jinn possession. Most of the cases with Jinn possession phenomenon were young, single females with low to average socioeconomic status.

*Conclusion:* Presentation of Delirious mania may be associated with the phenomenon of Jinn or demonic possession in Pakistan. The condition is often misdiagnosed by the clinicians which increases morbidity and mortality associated with this potentially life threatening condition.

**Keywords:** Delirious Mania, Jinn possession, Bipolar, Delirium

### 10.5 PREVALENCE OF DEPRESSION AMONG caregivers of patients AT LIAQUAT UNIVERSITY HOSPITAL, JAMSHORO

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**Background:** Depression affects most people in some way. and may contribute to physical and psychological problems. Chronic (long-term) depression can have real health consequences and should be addressed like any other health concern. lifestyle changes and reaction modification techniques can help people manage depression.

**Objective:** We hypothesized that while attending to a sick patient, the caregivers are prone to developing depression. This study aims to test this hypothesis by evaluating depression in caregivers of patients at Liaquat University Hospital, Jamshoro.

**Methodology:** This observational cross-sectional study was conducted from May to July 2014 at Liaquat University Hospital, Jamshoro. Data sample of 150 caregivers was chosen via purposive sampling. The data was collected by using self administered structured questionnaires (including Hamilton Depression Scale), in local language, and was analyzed in SPSS v.16.0.

**Results:** 66 percent of the caregivers were males while 34 percent were females. The mean depression score of the caregivers was 22.93 (Males: 22.75, Females: 23.29). This score indicates moderate severity and shows that females were more depressed than males. The caregivers were aware of their depressed mood and anxiety

**Conclusion:** Attendants play an important role in our local health setup, often serving as adjuncts to the healthcare personnel and nurses. Compromised mental health of caregivers would limit their ability to attend to the patients, slowing down the recovery of the patients. steps need to be taken to reduce stress among the caregivers..

**Keywords:** Acute, Chronic depression, attendants

### 10.6 ANOREXIA NERVOSA IN A PAKISTANI ADOLESCENT FEMALE IN THE CONTEXT OF BULLYING AND FAMILY PROBLEMS: A Case report and LITERATURE REVIEW.

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**Background:** Anorexia Nervosa is a rare disorder with a lifetime prevalence rate of 0.5 % in the adolescent population in the United States. It has been defined in DSM-V with three core features that include restriction of energy intake relative to requirement leading to significantly low body weight, an intense fear of gaining weight or becoming fat, and a disturbance in the way in which one's body weight or image is experienced. We came across a case of Anorexia Nervosa in a 13 year old Pakistani female in the context of bullying and family problems, who manifested the entire criteria as per DSM-v?. **Objective:** To report a case of a Pakistani adolescent female who presented with Anorexia Nervosa, in the context of bullying and family problems.

**Methods:** review of the American Academy of Child and Adolescent Psychiatry practice parameters, along with literature review from Journal of American Academy of Child and Adolescent Psychiatry and other sources via PubMed.

**Conclusions:** Anorexia Nervosa is a rare disorder found across all cultures. It is a chronic, potentially life-threatening condition characterized by remission and relapses that can make management challenging. Bullying and family problems are known risk factors for Anorexia Nervosa. As child psychiatrists we should work towards actively promoting awareness of this disorder in the context of bullying and social pressures and institute early interventions to minimize the risk

**Keywords:** Anorexia Nervosa, Bullying, Family problems

### **10.7 MALADAPTIVE COPING AND MENTAL HEALTH**

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*Purpose of study:* This paper will discuss about definition of maladaptive coping and its causes including lack of adaptive coping knowledge, low self-esteem, poor psychological functioning and others. Additionally, it also talks about beneficial and realistic interventions which encompasses individual and community approach, positive thinking, adopting dispositional optimism, psychological resilience and mindfulness meditation.

*Introduction:* Knowing about maladaptive coping and its relationship with mental health is essential. Health care provider's role is significant in this regard and they can make a positive change in patient's life, by encouraging and motivating towards adaptive coping to be called as mentally healthy. *Methodology:* 25 Research journals from 2006-2012 were studied then reliable and authentic information were gathered. Coping mechanisms including adaptive and maladaptive coping, mental health and illness and psycho therapies were the topics that were considered.

*Result:* Maladaptive coping is the most common problem observed in psychiatric patients which deteriorates health or is a cause for being Psychiatric patient. This chief issue in health settings influences individual's way of living due to the advancement of their diseases. Both eastern and western literature has showed evidence for presence of this issue. In Pakistani culture, maladaptive coping is becoming a trend in every individuals either young or old due to wide range of reasons including poor interpersonal relationship, poor psychological functioning, and traumatic life events etc.

*Conclusion:* Use of coping strategy i.e. adaptive or maladaptive is a personal choice. Maladaptive

coping can place an individual at unhealthy behavior having many physical, psychological and mental health problems. It also affirm individual in the approaches which lead them towards negative way of coping

**Keywords:** mental health, maladaptive coping, adaptive coping

### **10.8 ANGER, ANXIETY AND DEPRESSION: HANDLING DIFFICULT EMOTIONS IN NURSING PRACTICE.**

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*Purpose of study:* This paper highlights the difficult emotions in nursing practice and its management. Additionally, this will also discuss factors such as personal and environmental stressors, uncertain situations, interpersonal conflicts etc. which cause such emotions. and realistic interventions. *Methodology:* 20 Research journals from 2005-2012 were studied then relevant and authentic information was gathered. Different emotion in nursing practice, in patient that shows these emotions, approaches to handle this and role of health professionals were the topics studied.

*Results:* Anger, anxiety and depression are the most common and difficult emotions that nurses and other health professionals has to cater. And if these emotions are not handled properly, it will have a mark influence on individual's way of adopting his/her disease process and their prognosis as well. After eastern and western literature. it is clear that it has great impact on health of an individuals. In Pakistani culture, anger, anxiety and depression are common because of other aggravating factors as well. *Conclusion:* Concluding that, anxiety, anger and depression are emotions that nurses encounter in different situations. It can lead an individual to suffer from variety of physiological and psychological. As nurses are accountable to identify anxiety, anger and depression among people and aid them accordingly so I suggest that, nurses should be

trained or taught how to deal with difficult patients as important component along with other studies.

*Keywords:* difficult emotions, nurse's role, handling

### 10.9 FRONTOTEMPORAL DEMENTIA WITH MOTOR NEURON DISEASE: A CASE STUDY

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*Background:* Frontotemporal Dementia is a Neurodegenerative 1 disorder, associated with characteristic atrophic changes in frontal and/or temporal regions, with insidious deterioration in personality, behavioral and social skills. The rarity of the disorder invokes confusion, and overlapping behavioral and neurological symptoms can mask real psycho-pathology.

*Objectives:* Case study of early onset frontotemporal dementia and its subtypes in a patient with psychotic symptoms.

*Method:* Ms E was diagnosed with depression when she was 35 years old with early symptoms of isolation and poor interest. She left medicines after a while and presented to emergency room with psychotic symptoms. During admission she developed disorientation and motor immobility with spasticity. MRI changes were indicative of frontal and temporal atrophy.

*Results:* Ms E was diagnosed as having frontotemporal dementia with motor neuron disease (FTD-MND). Imaging studies showed frontotemporal atrophy and clinical assessment of motor dysfunction concluded diagnosis. EMG was not done

*Conclusion:* FTD-MND is a rare condition with poor prognosis. Motor symptoms with cognitive disturbances provide a clue. .

*Keywords:* Frontotemporal, Dementia, Motor Neuron

### 10.10 RELATIONSHIP OF DEPRESSION AND GLYCEMIC CONTROL

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*Background:* Depression is a common mental illness found in all regions of the world. In Pakistan, depression is on top of the list among all psychiatric conditions. However, a link between diabetes and depression severity is not yet identified. Therefore, we aimed to find an association of depression with diabetes.

*Material and Methods:* In a cross-sectional study, 508 age matched pregnant females were recruited, and categorized as normal glyceimic (controls n= 300) and diabetic (cases n= 208). Women with hypertension, known thyroid dysfunction, twin pregnancy were excluded from the study. Aga Khan University Anxiety and Depression Scale was administered to analyze depression score, and blood glucose levels were measured. Data was presented as Mean  $\pm$  S.D and frequencies where applicable. Chi-square test, Spearman rank correlation and simple linear regression analysis were performed. P value of  $<0.05$  was considered significant.

*Results:* The mean age of the study subjects was  $26.6 \pm 5$  (year). Random blood glucose levels were 148.3

$\pm 51.9$ (mg/dl) for diabetic females and  $123.6 \pm 30.5$ (mg/dl) for non-diabetic females ( $p<0.001$ ).

52% (n= 267) of the study subjects were found to be suffering from minimal to moderate depression. When stratified by glucose levels 64.9% (n=135) females with diabetes and 44%

(n=132) without diabetes reported to be depressed ( $p<0.01$ ). Simple linear regression model predicted that females with raised blood glucose levels were more prone to be depressed by  $1.53 \pm 0.59$  units when compared to females with normal blood glucose levels ( $p= 0.01$ ). An 11.5%

positive correlation was found between glycemic status and depression scores.

**Conclusion:** Depression is a common finding in pregnancy, which can be aggravated by poor glycemic

control. Among other factors to relieve depression, health care physicians should also focus on a stricter glycemic control to improve maternal mental health status.

**Keywords:** Depression, Pregnancy, Diabetes

### 10.11

#### MIGRAINE AND PREGNANCY: IS THERE A LINK?

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**Background:** Migraine ranks as the 8th most disabling condition. Migraine is one of the most common causes of headache in Pakistan. Studies have shown that the frequency and duration of all headaches

decrease during pregnancy; however we found the opposite to be true in our population. In this study, we aimed to determine the frequency of migraine in pregnant women.

**Material and Methods:** A cross-sectional study recruited 497 pregnant females; grouped as case (having history of headache during pregnancy) and control (no history of headache during pregnancy). Women

with hypertension, known thyroid dysfunction, twin pregnancy were excluded from the study. After confirming that the study subjects had headache at least once a month, a comprehensive form based on The International Classification of Headache Disorders version-II was filled. Migraine disability score was used to calculate the severity. Data was presented as Mean  $\pm$  S.D and frequencies where ever applicable. Chi-square test, Spearman rank

correlation were performed. P value of  $<0.05$  was considered significant.

**Results:** The mean age of the study subjects was  $28.6 \pm 7.2$  (years) and BMI was  $26.5 \pm 6.8$ (kg/m<sup>2</sup>). 66%

(n= 329) pregnant females complained of experiencing headaches during pregnancy, with positive unilateral distribution in 42% (n=210), and nausea/vomiting in 21% (n=110) study subjects. However 94.7% (n=471) subjects reported to experience no aura. Around 26.1% (n=130) pregnant females fell within the mild to moderate disability score as compare to the 53.3% (n=40) known migraine cases (p<0.01).

**Conclusion:** The study reports that headaches, particularly migraine without aura is a common occurrence in pregnancy in our population contrary to other studies. Further longitudinal studies should be conducted to identify the causal relationship of this condition.

**Keywords:** Migraine, Pregnancy, Headache

### 10.12

#### OPTIC NERVE SHEATH DIAMETER ON CT SCAN AS A PREDICTOR OF OUTCOMES AFTER DECOMPRESSIVE CRANIECTOMY PATIENTS.

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**Introduction:** Optic nerve sheath diameter (ONSD) measured on CT scan has been shown to predict outcomes of patients with severe traumatic brain injury. No such relation has been studied in patients undergoing decompressive craniectomy (DC). We evaluated ONSD on admission CT scan to predict outcomes of patients undergoing DC along with Rotterdam CT score (RCTS).

**Materials and Methods:** This retrospective cohort study was approved by institutional ethics committee. All the consecutive patients undergoing DC with available images and records were included. We measured ONSD 3 mm behind the eye

ball and calculated RCTS. Glasgow Outcome Scale (GOS) was measured at last follow up. We analyzed the data on SPSS v 19. Receiver operator curve analysis (ROC) was done to measure the predictive values of ONSD and RCTS for mortality and unfavorable outcomes. *Results:* 117 patients were included. 20 patients had bilateral DC. Mean GCS at presentation was  $8.5 \pm 3.5$ . Mean follow up was  $7.5 \pm 1.2$  months. Thirty day mortality was 19%. Mean ONSD of both eyes was  $6.73 \pm 0.89$  mm. Area under the Curve for bilateral mean ONSD as predictor of mortality was 0.49 with a 95% CI of 0.36 to 0.62. AUC for RCTS as a predictor of 30 day mortality was significant i.e., 0.67 with a 95% CI of 0.572 to 0.820. The difference of mean ONSD was also not significantly different among survivor and non survivors.

*Conclusion:* Admission ONSD in DC patients is high but does not predict mortality and unfavorable outcomes. RCTS has a better prognostic value for predicting mortality and unfavorable outcomes in DC patients.

*Keywords:* Decompressive craniectomy, optic nerve sheath diameter, traumatic brain injury

### 10.13 DIAGNOSIS AND EVOLUTION OF PTSD

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*Introduction/ Background:* Post traumatic stress disorder (PTSD) develops after a person is exposed to a traumatic event, like sexual assault, terminal illness, warfare, injury(1) etc. About 13 % of elderly patients in US suffer from Post-Traumatic Stress Disorder (2). In general population the lifetime prevalence in adults is 7.8% with women twice likely to develop the symptoms, however in war veterans the prevalence rates of lifetime PTSD is 30.9% and 26 % and partial PTSD is 22.5% and 21.2% in males and females respectively (3,4). PTSD has cognitive and physiological aspects to it (5, 6) The war veterans with PTSD have a higher propensity for binge drinking patterns (7).

*Objective:* To assess the development of symptomology of PTSD in a patient with alcohol dependence and its residual affects over the course of treatment.

*Methods:* Pharmacotherapy, Psychotherapy and Cognitive Behavioral Therapy (CBT) were used during the treatment of the patient. Exercise program (MOVE) and Smoking Cessation Program along with Nicotine Patch treatment were offered and used in the management of weight and health issues.

*Results:* Case focuses on revealing the primary cause of alcohol dependence being post war PTSD. Identification of etiology is paramount in effective treatment of patients.

*Conclusion:* Complex cases of PTSD with nightmares, auditory and visual hallucinations can initially present with substance abuse/dependence. These cases need to be addressed via a multidisciplinary/ psychosocial approach.

*Keywords:* PTSD, War Veteran, Alcohol Dependence

### 10.14 DEMYSTIFYING MYTHS OF MENTAL HEALTH: A CHALLENGE TO HEALTH CARE PROVIDERS

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*Purpose:* To demystify the myths of mental health via facts contextually related to Pakistan and aware health care providers with current challenges.

*Method:* A media report is generalized with current literature of mental health to demystify some commonly found myths contextually related to Pakistan. every third individual defines or limits mental health as health of mad (pagaloon ki sehat) while according to World Health Organization (2013) "mental health is defined as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his



community”[A]. It is culturally considered that mental illnesses are due to supernatural causes e.g. sorcerer, witchcraft and evil eye which is a myth and becomes a barrier in availing the mental health services. The role of government in health especially mental health sector is very important in terms of human resource and material resource management. Human resource management is a very complex term which implies recruitment and training of staff [B]. According to Schomerus, Schwahn, Holzinger, Corrigan, Grabe Carta, and Angermeyer,(2012) increasing public understanding of the biological correlates of mental illness seems not to result in better social acceptance of persons with mental illness” [d]

*Conclusion:* For the awareness both community and health care professionals can play their role through active participation and mutual goal setting. It is clinically significant to all health care systems of Pakistan to invest well trained human resource with collaboration of NGOs and health care providers take challenge as opportunity to provide cultural and contextual care

*Keywords:* Myths, facts, challenges

#### **10.15** VALIDATION OF URDU VERSION OF WAGNILD AND YOUNG'S RESILIENCE SCALE AMONG MARRIED WOMEN 20-40 YEARS OF AGE LIVING IN URBAN SQUATTER SETTLEMENTS OF KARACHI, PAKISTAN

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*Background:* No valid instrument exists in South Asia to assess resilience. , the objective of the study was to assess the validity and reliability of Urdu version of Wagnild and Young's long and short Resilience Scale (RS).

*Methods:* The study was carried out in two urban squatter settlements of Karachi, Pakistan. Resilience

Scales were validated against the scales of depression, anxiety and life satisfaction among married women of age 20 to 40 years. The original English version of RS was translated in Urdu and back-translated. Six community health workers received four day training sessions for questionnaire administration. 636 community women were selected through systematic sampling for validity and half of the selected participants were randomly selected for reliability.

*Results:* Mean age of the participants was 30.08 years. Both long and short RS were found to have moderate negative correlation with depression and anxiety, and moderate positive significant correlation with life satisfaction. The test-retest correlation coefficients for long and short were found 0.54 and 0.49 respectively. The Cronbach's alpha for both were also in an acceptable range. Furthermore, concurrent validity showed high positive correlation between both the scales.

*Conclusion:* This study demonstrates that Urdu version of RS has reasonable psychometric properties. Short scale was equivalent to the long one in all. Thus, this tool can serve as a feasible option for measuring resilience in the community and the two versions can be used interchangeably.

*Keywords:* validation, resilience scale, urdu language

#### **10.16** RISK FACTORS OF INTRACTABLE EPILEPSY IN CHILDREN

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*Background:* A number of factors have been attributed to the development of intractable epilepsy in children. Intractable seizures are defined as lack of seizure control on more than 2 first line antiepileptic drugs with an average of >1 seizure per month for 18 months and no more than 3 consecutive months seizure free during the interval.

*Objective:* The purpose of our study was to determine risk factors for intractable epilepsy in

patients presenting in neurology clinic at a tertiary care hospital.

*Method:* A retrospective study was conducted with all the patients diagnosed as epilepsy, by reviewing the files from January 2013-July 2013. Data was recorded on a proforma and analyzed. Univariate analysis was done to assess the risk factors of intractable epilepsy. All potential covariates were examined independently using p-value of 0.25.

*Results:* are reported as the odds ratios (OR) with respective 95% CI. Results: There were a total of 119 patients, with a breakup of 69 (58%) males and 50 (42%) females; the age range of patients was from 1 month to 16 years with a mean age of 5.6 years and mode of 6 years. EEG was done on all these patients, 48 (40.3%) had normal EEG and 71 (59.6%) had abnormal EEG. Generalized epileptiform discharges constituted 45 (37.8%), focal 11 (9.2%), multifocal spike and wave 7 (5.9%), Hypsarrythmia 4 (3.4%) benign rolandic 1, juvenile myoclonic epilepsy 1 and ESSW 1. Out of the total 71 abnormal EEG, 31 patients were receiving a single drug and 35 were receiving more than 3 drugs. Developmental delay had a higher OR of 3.759 (95% CI 1.69-8.34). Onset of seizures in children before 2 years had an OR of 4.64 (95% CI 1.639-13.17). Polymorphic seizures had the highest OR of 2.78(CI 95%2.187-3.549) followed by generalized tonic clonic with an OR of 1.941 (CI 95% 0.912-4.13). Abnormal EEG had an OR of 3.99 (CI 95% 1.68-9.44). MRI abnormality did not increase the risk of having intractable epilepsy. Females showed an OR of 1.250 (95% CI 0.58-2.6) of having intractable seizure. Consanguinity, myoclonic epilepsy and microcephaly did not show any increased risk.

*Conclusion:* Early onset of seizures, developmental delay, seizure type and abnormal EEG increases the risk of intractable epilepsy in children. MRI and consanguinity has no effect in increasing the risk.

*Keywords:* intractable, epilepsy, children

## **10.17** BUILDING RAPPORT THROUGH THERAPEUTIC COMMUNICATION IN MENTAL HEALTH CARE

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*Objective:* To explore the relationship between therapeutic communications and rapport building, between a nurse and psychiatric patients for better health outcomes.

*Method:* In a psychiatric care hospital, a patient was diagnosed with schizophrenia,. In a group interaction with other patients that patient was quiet and within a few minutes left the activity place. A curious student nurse identified the reason of such behavior as lack of therapeutic communication with the patient. The other day one on one interaction was built with the patient and effective communication techniques were implemented and the results showed immense changes in the patient's social behavior. *Result:* Building rapport is associated with therapeutic communication and is essential to build effective nurse-client relationship. Rapport building is a continuous process and aims to deal with patient holistically including physical, mental, social and emotional aspects of life. As a psychiatric patient experiences alteration in thought process, so a good rapport with them might lead to self-disclosure of sensitive information about their opinion, thoughts and emotions.

*Conclusion/recommendations:* It has been concluded that rapport building is considered as crucial component in interviewing process as well as in patient care especially in psychiatric setting. Health professionals should follow the rapport building techniques to accomplish particular goals and objectives. Furthermore, silence, active listening, support, reassurance, counseling are the few skills to achieve therapeutic relationship with mentally ill patients.

*Keywords:* Rapport building, Therapeutic Communication, Nurse-client

**10.18**  
EFFECTIVENESS OF BOTULINUM TOXIN  
TYPE A WITH INTENSIVE PHYSIOTHERAPY  
IN THE TREATMENT FOR SPASTICITY IN  
CHILDREN WITH CEREBRAL PALSY: A  
RETROSPECTIVE STUDY

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*Objectives:* The aim of this retrospective study is to describe the effect of multilevel BTX-A injections with regular physiotherapy in lower extremities, focusing mainly on gross motor function and functional status in cerebral palsy patients.

*Methods:* Data was collected from 26 patients' with age ranging from 4-11years, with spastic CP including diplegic, paraplegic and quadriplegic children. The exclusion criteria included fixed contractures, history of tendon lengthening surgeries and intrathecal baclofen. Detailed counseling was done and Informed consent was obtained from the parents preceding procedure. Gross Motor Function Measure (GMFM-88) was used to assess the motor functions of the children. GMFCS I-V was used to assess functional status of the patients. Ashworth and Tardieu scales were used to measure the spasticity. These measures were used on the 3 and 6 monthly follow ups as well. Botulinum toxin injections were given at multiple levels in each muscle, in one sitting. Data was analyzed using SPSS. GMFCS and GMFM were assessed using paired t tests. P-value less than 0.05 were considered statistically significant. *Results:*

There were 20 males and 6 female patients with mean pre-botox GMFM 49.14 and post botox GMFM 55.53; the pre botox GMFCS was 3.69 and post botox GMFCS was 2.65. Both these parameters showed a p value of 0.000 which is significant

*Conclusion:* we conclude that botox injection with intense physiotherapy is the effective treatment of spasticity in patients with cerebral palsy

*Keywords:* botox, cerebral palsy, spasticity

**10.19**  
CLONED MICROGLIAS WITH NOVEL  
DELIVERY SYSTEM IN MULTIPLE  
SCLEROSIS

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*Background:* Multiple sclerosis (MS) is a chronic inflammatory neurological disease of the central nervous system (CNS), characterized by demyelination and activation of microglia. Mitochondrial mutations and dysfunctions in microglial cells are thought to contribute to the detrimental effects of neuroinflammation seen in MS.

*Objective:* The somatic nuclear transfer (SCNT) technology offers a more practical mode of therapy in MS, This method would attempt to dilute and/or progressively replace the mutated and activated microglia with cloned olfactory ensheathing cells (OEC) with remyelinating and scavenging properties which would attempt to limit the progression of MS. Proposed

*Methods:* Applying SCNT-derived embryonic stem (ES) cells based therapy by cloning olfactory ensheathing cells (OEC), engineered with an autologous nuclear component of the recipient OEC with a healthy donor oocyte. The inner cell mass of the blastocyst would be the source to generate stem cell derived microglia.

*Results:* This mode of generating cloned glia and its transplantation to the brain is expected to replace the mutated and activated microglia of the patients with MS and use the regenerative and remyelinating and scavenging properties of the OEC's, as has been seen in clinical trials in patients with spinal cord injuries. *Conclusion:* The use of SCNT to develop isogenic ES cell-based therapies for the prevention and treatment of MS associated with mtDNA mutations may open a new avenue of designer's targeted cell therapy unique for the patients with MS. The proposed "transcriberial device" to access the brain can be an advantageous route of delivery

*Keywords:* Stem cell therapy, Multiple Sclerosis, Neuro-regeneration

## 10.20 TREATMENT STRATEGIES IN OPIOID DEPENDENT PATIENT WITH LONG QTC INTERVAL ON EKG: CASE REPORT

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Health Sciences Center*

*Introduction/ background:* Opioid dependence is characterized by both psychological and physical dependence. Fosb is a protein encoded by fosb gene and its overexpression is critical to behavior and drug addictions and pathological responses to drugs (1, 2, 3). both pharmacotherapy and psychosocial therapy are essential for effective treatment (4) methadone can lead to prolonged qt interval and torsade de pointes in high risk patients (5, 6) treatment options like buprenorphine, naltrexone, combination of buprenorphine/naloxone and clonidine have been found to be suitable alternatives (7) objective: to evaluate a high risk patient (chf/age/alcohol/opioid abuse) on methadone for opioid dependence for potential development of torsade de pointes and alternatives to methadone treatment.

*Methods:* clinical evaluation, monitoring and management of the patient in er/cicu with blood work including serum electrolyte, calcium and magnesium levels along with serial ekg for assessment of possible/imminent development of torsade de pointes. *Results:* the patient chose to be on high dose/low dose methadone maintenance program against medical advice for detoxification for opioid dependence despite past history of cardiac disease and diabetes mellitus .prolonged qt/qtc intervals (596/674ms) lead to the development of palpitations, diaphoresis, fainting spells and loss of consciousness.

*Conclusion:* the patient with multiple high risk parameters should not be put on either high or low dose methadone due to increased risk of torsade de pointes. Aicd/tpm placement with alternate pharmacotherapy options like partial opioid agonist (buprenorphine), an opioid antagonist (naltrexone), combination of buprenorphine/naloxone, alpha 2 antagonists (clonidine), or opioid agonist (diamorphine) along with psychosocial therapy

should be considered according to the patient profile.

*Keywords:* opioid dependence, qtc interval, methadone

## 10.22 NEUROPSYCHOLOGICAL ASSESSMENT OF PATIENT WITH TRAUMATIC BRAIN INJURY: CASE REPORT

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Health Sciences Center*

*Introduction/ background:* traumatic brain injury of the prefrontal cortex leads to cognitive deficits and working memory deficits probably due to alterations in catecholamine synthesis(1,2) prefrontal cortex is related to personality, expression, cognition, decision making and streamline thoughts and actions with goals(3,4,5)oligodendrogliomas originate from oligodendrocytes or glial cells of brain. They are tumors of unknown etiology occurring mostly in frontal lobes (50%)(6) there has been observed abnormal oligodendroglial cell changes in individuals with traumatic brain injury(7)unilateral frontal lobectomy involving the prefrontal cortex can lead to strategy application disorder and deficits of social cognition(8,9) objective: neuropsychological assessment of caucasian male with traumatic brain injury with incidental finding of oligodendroglioma of left frontal lobe.

*Methods:* interviews and behavioral observations were done. The sensorimotor and perceptual function was checked using hand dynamometer (grip) test. Perceptual functioning was tested with rbans line orientation for visuospatial discrimination and wais -ii testing for perceptual reasoning. Language function evaluated with rbans language index while learning and memory was evaluated with rbans list learning. Emotional function was evaluated with mmpi-ii and executive function with wisconsin card sorting test.

*Results:* the patient showed below average grip strength bilaterally (16th percentile ), deficient perceptual functioning (wais-ii 5th percentile),

below average learning and memory (rbans list learning 19th percentile), however the patient showed average language function on rbans language index (52nd percentile).mmpi-ii showed high level of psychological distress with low coping resources.

*Conclusion:* Poor cognition, motor function, retrieval of unstructured verbal information and executive dysfunction are consistent with the traumatic brain injury, however lower than expected grip strength, variable performance across perceptual function with patient's performance on embedded indices of psychiatric symptoms and high level of psychological distress needs to be evaluated in every patient for the presence of overlapping pathologies.

*Keywords:* Traumatic Brain Injury, Prefrontal Cortex, Neuropsychological Assessment

### **10.23** SOCIAL ISOLATION \_ A CURRENT REALITY IN THE CORRIDORS OF OUR SOCIETY

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*University, Karachi*

*Introduction:* Social isolation is a state of loneliness experienced by non-participative individuals in the society. It is characterized by lack of social belongingness, weakened engagement with others, minimal public contacts and unsatisfying relationships.

*Method:* A comprehensive literature search was conducted through electronic medium to explore the relevant literature. Various databases i.e. Pub med, Google search engines, Science Direct, JPMA and SAGA were used. In addition manual search was also done by accessing available articles in periodic library from 2004 till 2014.

*Results:* Absence of meaningful relations is common in mental health settings that significantly impacts recovery and wellbeing of the patients. It also develops triviality and low self-worth that may lead to depression or may be suicide in severe cases. According to Roy's Adaptation Model, the client is

a bio-psychosocial individual who mingles and adjusts with the varying surroundings. The outcome is the adaptive or maladaptive behavior of the individual. The adaptive performance is exhibited in four ways that are physiological, self-concept, role-function, and interdependence .However failure to adaptation can result in weak self- concept, weak interdependence, and ineffective interpersonal relationships ultimately resulting in social isolation. In addition, mental illnesses like depression, schizophrenia, bipolar-affective-disorder, personality disorders can also lead to social isolation.

*Conclusion:* Social isolation is one of the significant issues but it has always been thriving in the corridors of our society requiring comprehensive efforts for its resolution. For this reason, suitable steps at individual, group and institutional levels could be effective in preventing isolation.

*Keywords:* Social Isolation, mental illness, society

### **10.24** ENHANCING MOTIVATION IN NURSING PRACTICE

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*Introduction:* Motivation is an inner force that energizes individual to fulfill set goals. Motivation is an integral part for improving nurses' performance.

*Objective:*The objective is to discuss the role of motivation in nursing practice, factors affecting nurses' motivation and its impacts on health outcomes of the patients.

*Method:* A comprehensive literature search was conducted through electronic medium to explore the relevant literature. Various databases i.e. Pub med, Google search engines, Science Direct, JPMA and SAGA were used. In addition manual search was also done by accessing available articles in periodic library from 2004 till 2014.

*Results:* Maslow's Hierarchy of needs significantly contributes towards the understanding of human behavior. It includes the fulfillment of basic survival needs, safety and security at work place, social belongingness followed by self-esteem and ultimately proceeding to the highest level of self-actualization. This paper includes researches to suggest that nurses have their own intrinsic and extrinsic motivational factors to attain best possible outcomes. Intrinsic factors i.e. knowledge and skill, dedication towards the profession, remuneration and self-esteem, play an important role in motivating a nurse. Whereas, self-validation, work environment, past experiences, family and peer support are the extrinsic motivational factors. Thus, motivation is proved as the dynamics of behavior.

*Conclusion:* Motivation can be achieved through improvement in management activities, encouraging leadership responsibilities and opportunities to grow and learn, positive reinforcement, Sessions for refreshing the knowledge of staff, patient's cooperation and incentives. Overall, nurses' efforts should be considered worthwhile for continuation of quality care practices.

*Keywords:* Motivation, intrinsic factors, extrinsic factors.

## 10.25

### EFFECTIVENESS OF ILLNESS MANAGEMENT AND RECOVERY (IMR) IN PSYCHIATRIC PATIENTS; A CASE STUDY.

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*Introduction:* The world health organization defines mental health as a state of well-being in which every individual realizes his or her own potentials, can cope with the normal stressors of life, can work productively and fruitfully, and is able to make a contribution to her or his community. Although it is a significant aspect of one's life to be mentally healthy but research shows that it has been ignored for patient with diagnoses of serious mental health issues. They were not getting the desired outcomes of treatment rather the focus of treatment was

management of symptoms. In recent years, interest in identifying and implementing evidence-based practices for mental health services has been growing enormously.

*Case study:* A case study of a young female patient with the diagnosis of schizophrenia highlights that the patient had been suffering from this disease since 11 years and she was managing well with the symptoms. Moreover, the educational status of patient revealed that she graduated as medical student and then had done seven courses in MBA with other computer skills. It was assessed that she had insight present and was having a lot of awareness about her disease process and thus she was able to identify what are the sign and symptoms that she was facing. On further discussion it was verbalized by the patient that she knew it all from the illness management and recovery sessions. Moreover, during the counseling and teaching on stress management patient was able to share the coping strategies for her stressors; patient mentioned that she had learned them through those sessions. This interaction with the patient encouraged me to look back into more details of IMR and reflect on it that how it can help a mentally ill patient in achieving self worth and respectable position in the society.

*Conclusion:* Mueser, et.al (2006) states that in 1997 it has been suggested that the various psychosocial interventions for helping people manage their symptoms and prevent relapses needed to be consolidated into a single standardized program for study and dissemination. To meet this need, the Illness management and recovery (IMR) program was developed as part of the National Implementing Evidence-Based Practices (EBPs) Project. It is a widespread set of strategies designed to help individual with mental illnesses to grow beyond their mental illness. It highlights the basic components of IMR program and how it can help a mentally ill patient in achieving self worth and respectable position in the society. Moreover, it evidences the positive relation of IMR with mental health and illness and recommends it as effective and holistic care in the community. More than this, IMR offers a peer based approach and it is less hierarchical than of professional approach where peers learn from each other's personal experiences

that provides an opportunity to patient in sharing their self management skills to the other patients which promote sense of self confidence and socialization( Mueser et al. ,2002). This creates support group and help to identify other existing groups in community for patient that help the patient not to feel demotivated and isolated in relation to their mental illnesses.

*Keywords:* Mental Health, Illness Management and Recovery, Evidenced based practice

### **10.26** EXPLICATING PALLIATIVE CARE; ADDRESSING PHYSICAL AND PSYCHOLOGICAL NEEDS

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*Introduction:* This paper is highlighting the two main domains of palliative care that are physical and psychological domain. Moreover it also talks about how we can help the patients who are terminally ill in order to ease or elevate their sufferings. Physical domain includes intense pain, nutrition imbalance, and infection. To improve physical aspect of health during palliative care, we should do massaging, mind diversion exercise and assessment of pain frequently to decrease pain, to prevent from further infection we should take standard precaution and provide nutrition support. Another domain is psychology that includes hopelessness, fear fullness, anxiety and depression. Moreover, providing support, listening carefully to the patient, give him time and space to spend time with family and asking him about his feeling are helpful for the patient to improve psychological domain.

*Materials and Methods:* Journal articles from year 2008-2013 were thoroughly studied about the physical and psychological aspects of palliative care and how a nurse and organization can help the patient and family during end of life period.

*Result:* After literature review, it revealed that when a patient is at his end stage of life with terminal illnesses family also went through the grieving

process before and after patients death. It is very important to give support not to the patient only but also to the family. as a nurse and health care professional we have to educate the communities and healthcare settings to enhance the quality of care provided to the terminally ill patients. Management has to offer courses in order to train the palliative staff so that they can provide optimal care. Government representators should allocate adequate facilities and equipment to the hospital and should work on making centers for terminal ill patient.

*Conclusion:* In conclusion, we have to assess all the four domains of a terminally ill patient in order to provide holistic care. And it very important to educate the family about the disease process of the patient and inform them timely about the condition of the patient so that they can prepare themselves mentally.

*Keywords:* terminal illness, domains of palliative care, role of nurses

### **10.27** INCREASING TREND OF TEENAGE SUICIDE IN PAKISTAN

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*Introduction:* Teenage Depression is a serious public health concern . It results in substantial impairment in social functioning, cognitive development and scholastic achievement. It is also associated with suicide attempts which is the third leading cause of death among teenagers.

*Objective:* The aim of this case study is to highlight effective treatment modalities and preventive measures for teenage depression and suicide respectively.

*Methods:* A case was encountered during a community visit in which 18 years old male client presented with complain of drowsiness who had taken ten tablets of Lorazepam few hours ago. He had history of suicidal attempt. Initially, he was referred to the hospital for initial management. Later, he was counselled and referred to psychiatrist

for further treatment. Comprehensive literature review of 10 research articles from 2009 to 2014 was conducted by using Science Direct, SAGE and American Psychiatric nurses Association.

*Results:* Due to thought distortion, a person focuses on negative thoughts rather than positive which lead to maladaptive behavior. Cognitive Behavioral Therapy is an appropriate option for adolescent with suicidal attempt. It focuses on behavioral modification, involving adolescent in scheduling enjoyable activities, psychoeducation, and learning self-relaxation techniques. In addition, encouraging client to overcome the feelings of helplessness and hopelessness, develop self-awareness and construct positive self-identity will assist client to recover.

*Conclusion:* In order to reduce the incidences of teenage suicidal rates, school-based interventions is recommended by WHO's Suicide Prevention Strategies should be initiated. These include crisis management, self-esteem enhancement, development of social skills and healthy decision making. Thus, it will help to reduce the incidences of teenage suicidal rates.

*Keywords:* Teenage suicide, Cognitive Behavioral Therapy, psychoeducation

## 10.28

### PSYCHOSOCIAL OCCUPATIONAL THERAPY FOR PSYCHIATRIC PATIENTS: A CLIENT-CENTERED PRACTICE TO PROMOTE INDEPENDENCY

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*Introduction/ Objective:* Occupation therapy is a process of getting involved into a purposeful activity that contributes towards an individual's health, wellbeing, social inclusion, improved functioning and self-respect. A literature review aims to establish the significance of occupational therapy for Psychiatric patients.

*Methodology:* A comprehensive literature review was done including 13 studies from 2005 to date, using various scientific database and search engines.

*Findings:* Creative ability as a model for psychosocial occupational therapy is the theory generated by Vona Du Toit in 1972. Creative ability model assists therapists in evaluating client's occupational performances depending upon the skills they have attained. This allows a patient to present oneself, without inhibition, limitation or anxiety. This model works on the basis of three aspects namely creative response- an anticipation of pleasure despite anxieties about capability or outcome, creative participation- taking part in activities that challenges person's abilities and creative act- end product of the creative response and creative participation.

*Recommendations:* Occupational therapy promotes immense qualities including social interaction, independency, self-esteem and skill building opportunities in a client. The model of creative ability by Du Toit enables client to work productively and present himself without anxieties through creative response, participation and action. Occupational therapy includes diversional activities enabling them to convert their faulty thoughts and channel it towards meaningful and productive purposes such as games, discussions, goal oriented interactions and skill building opportunities by enhancing psychomotor, interpersonal, and cognitive skills in a client.

*Keywords:* Occupational Therapy, Mental Health, Psychiatric Patients



**10.29**  
PROGNOSTIC IMPLICATIONS OF  
HISTOLOGICAL CLEAR CELLS IN HIGH  
GRADE INTRACRANIAL EPENDYMAL  
TUMORS: A RETROSPECTIVE ANALYSIS  
FROM A TERTIARY CARE HOSPITAL IN  
PAKISTAN.

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*Aims:* Clear Cell variant in Ependymal tumors is rare. We aim to compare the features, clinical outcomes of Clear Cell variant with the Classic pathology of grade 3 intracranial Ependymal tumors in Pakistan. *Methods:* A retrospective cohort study conducted at the Department of Neurosurgery, Aga Khan University. The medical record files from 2003 – 2013 were reviewed, MRI/C.T scans and Histopathological slides of WHO grade III Ependymal tumors were reviewed. Analysis was done on SPSS 20.

*Results:* There were 09 cases of clear cell variant and 23 cases of classic Anaplastic Ependymoma. The median age of Clear Cell variant was 52 years (range 24years-72 years), whereas of Anaplastic Ependymoma was 37 years (range 3 months to 65 years). Symptoms included Headache 66% in CCE and 63% in AE, Seizures 30% in CCE and 22% in AE, and raised ICP in 30% in CCE and 54% of AE. CCE was Supratentorial in 70% cases, intracranial Anaplastic Ependymoma was supratentorial in 58% of cases. Gross Total Resection was achieved in 55% cases in CCE and 26% cases in AE. Sub-total resection was done in 45% cases in CCE and 65% in AE. Radiotherapy was given in 55% patients in CCE and in 52% in AE. Recurrence was there in 77% cases of CCE and 70% in AE. Repeat Surgery was done in 30% cases of CCE and 34% cases of AE. Median Progression free survival was 9 months (range 3-28 months), and Overall survival was 13 months (range 3-41 months) in CCE. Median Progression free survival was 14 months (range 0.5-53 months), and Overall survival was 18 months (range 1.5- 36 months) in AE.

*Conclusion:* Clear Cells in Grade 3 Ependymal tumors are found mainly in adult population and are supra-tentorial . Show worse progression-free and overall survival than Anaplastic Ependymoma. Metastasis and spinal drop mets are less frequently seen in Clear Cell Ependymal tumors. Overall survival is significantly worse in our part of the world for Grade 3 Ependymal tumors.

*Keywords:* ependymoma, overall survival, progression free survival

**10.30**  
INTRACRANIAL EXTRAOSSEOUS EWING'S  
SARCOMA

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Hadi  
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*Introduction:* Small round cell neoplasms, including Ewing's sarcoma, Primitive neuroectodermal tumor (PNET), Askin's tumor, PNET of the bone and extraosseous Ewing's sarcoma together constitute the peripheral primitive neuroectodermal (pPNET)/Ewing's sarcoma family of tumors. Extraosseous Ewing sarcoma's common sites of occurrence include soft tissues and bones of the lower extremity and paravertebral and retroperitoneal regions. It rarely presents as a primary intracranial lesion.

*Case:* We report the case of a 20 year old male who presented with the complaints of headache and drowsiness. On head computed tomography (CT) scan, an extradural space-occupying lesion was noted on the right temporoparietal side. The patient underwent craniotomy and complete tumor excision. He was diagnosed to have intracranial extradural extraosseous Ewing's sarcoma based on the histopathology findings.

*Conclusion:* Although extremely rare, extraosseous Ewing's sarcoma can occur intracranially. This is the twenty-second such case and is the first one being reported from Pakistan.

*Keywords:* extraosseous, epidural, Ewing's sarcoma

### 10.31 NEUROFIBROMATOSIS TYPE 2 PATIENT PRESENTING WITH MEDULLOBLASTOMA

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*Background:* Neurofibromatosis type 2 is an autosomal dominant syndrome with a frequency of one in 25000 live births and a penetrance of almost 100% by the 6th decade of life. The tumors occurring in Neurofibromatosis type 2 patients are bilateral vestibular schwannomas, other peripheral, cranial and spinal nerve schwannomas, intracranial and intraspinal meningiomas, ependymomas and gliomas.

*Case description:* We report the case of a 6 year old boy who presented with a 1 month history of nausea and recurrent vomiting. Physical examination was positive for ataxic gait and left-sided facial nerve palsy. Family history was positive for Neurofibromatosis type 2 in the patient's father and paternal uncle. MRI brain revealed a solid enhancing lesion arising from the right cerebellar cortex, which was effacing the 4th ventricles and causing hydrocephalus. Craniotomy and excision of the lesion was performed. Histopathology report confirmed the diagnosis to be desmoplastic medulloblastoma. Based on the patients subsequent history and family history, he was diagnosed to be a case of neurofibromatosis type 2. *Conclusion:* This is the first case of medulloblastoma occurring in a patient with Neurofibromatosis type 2 and raises the possibility of an association between medulloblastoma and Neurofibromatosis type 2.

*Keywords:* Neurofibromatosis, Type 2, medulloblastoma

### 10.32 APPLICATION OF POSITIVE PSYCHOLOGY IN MENTAL HEALTH SETTINGS

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*Introduction:* Positive psychology is a science that involves positive subjective experiences, positive individual traits, and institutions that promise to improve quality of life and prevent pathologies that arise when life is barren and meaningless. In a society, negative stereotypes are held about mental health issues, it is important to apply positive psychology.

*Method:* A comprehensive literature search was conducted through electronic medium to explore relevant literature. Various databases i.e. Pub med, Google search engines, Science Direct, JPMA and SAGA were used. In addition manual search was also done by accessing available articles in periodic library AKUH from 2004 till 2014.

*Results:* The model of scientific theory of happiness that is "PERMA" proposed by Martin Seligman states that the component of holistic care can be achieved by understanding client's emotions, strengths, relationships towards achievement of goals. Positive emotions help person to perform better at work and boost physical and psychological health. The engagement in household work, group activities, and religious ceremonies can result in client's contentment. Relationship with family and colleagues based on mutual respect and trust can be helpful in moving ahead in life. It allows an individual to identify his own strengths for leading an effective life.

*Conclusion:* Mental health nursing practice requires integration of positive psychology to elevate standards health outcomes. The awareness of positive psychology can assist nurses in enhancing the wellbeing of the patients. This goal can be achieved by focusing on combination of positive feelings about oneself, living a meaningful life, establishing supportive relationships.

*Keywords:* Positive psychology, Mental health, nursing

### 10.33

#### ANTIBODY MEDIATED ENCEPHALITIS: NOT AS RARE IN CHILDREN AS THOUGHT OF (A CASE SERIES)

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*Objective:* The purpose of these case reports is to create awareness about a potentially reversible cause of a common medical emergency.

*Methods:* A total of 5 patients, admitted from April 2013 to August 2014 with the diagnosis of encephalitis; out of which 4 were without any evidence of infective pathology while 1 had Herpes PCR positive and after recovery had a relapse with NMDAR antibodies positive in CSF. All of these patients showed remarkable recovery on administration of immunomodulatory therapy. Their radiological investigations suggested auto immune pathology. Parental consent was taken and confidentiality maintained.

*Results:* All 5 were female with age ranging from 8 months to 14 years. 2 patients had leukemia and were on treatment. 1 had history of measles leading to encephalitis; presenting complaints were low GCS, seizures, in coordinated movements' with mutism and oculogyric crises. IVIG was administered in all patients with improvement in 4 and 1 patient expired due to the complications of primary disease. *Conclusion:* This case series gives an insight to a potentially treatable condition which if left untreated has poor prognosis.

*Keywords:* NMDAR antibodies, autoimmune, encephalitis

### 10.34

#### DEPRESSION: GLOBAL ETIC? FINDINGS ABOUT GENDER, INCOME GROUPS AND LOCALITIES; A COMPARATIVE STUDY

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*Introduction:* Mental illnesses have become a major concern around the globe. Depression is the most common among all mental disorders which ultimately ends up in deterioration of mental health of wellbeing. Few prior studies on Depression have shown increasing rate of Depression in Pakistan. The aim of this study is to identify commonness of etic results about depression in relation with socioeconomic class, gender and income.

*Method and Procedure:* Faisalabad city in Pakistan selected for this study to be done. Total number of 120 volunteer adults and adolescent (< 13 years) participant were selected. Four slums and four high class areas were selected, 15 participants regardless of gender from each locality represents Faisalabad in this study. Participants were tested on 21 verbal questions of Beck Depression Inventory (BDI-11) by Aaron, Robert and Gregory in (Aaron et al 1996) in order to evaluate the prevalence of minimal and mild depression.

*Results:* Remarkably, study results shown higher percentages of minimal and mild depression among women living in slums in contrast to those belong to higher class. However, higher class women scored higher percentages of prevalence of depression when it comes in terms of gender based comparison as compared to women of slum areas.

*Conclusion:* This study supports the existence of etic findings in this regard by using mental health classification

*Keywords:* Depression, Gender, Prevalence

### 10.35

#### GUILLAIN-BARRÉ SYNDROME IN CHILDREN: CLINICAL PRESENTATION AND PROGNOSIS

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**Objective:** To study the clinical presentation and prognosis of pediatric patients according to Hughes Classification.

**Methods:** This is a descriptive and retrospective analysis. The records of all pediatric patients admitted with GBS were retrieved from the Medical record database of the Aga Khan University Hospital. Pediatric population was defined in our study from 2 years to 16 years of age. Total duration of study was 3 years, from Jan 2011 to Dec 2013. Medical records were reviewed with respect to patient demographics, predisposing factors of GBS, and clinical features at presentation, investigations, managements, and long term outcome. All children who fulfilled the sample selection criteria were registered via a structured proforma. Confidentiality of patients was maintained.

**Results:** A total of 31 patients were included in the study comprising of 21 males and 10 female children ranging from 2 years to 16 years. The mean age was 6.7 years, with a median of 6 and mode of 8. The maximum number of cases 13 were seen in summer (Jun-Oct) followed by 11 in spring (march-may) and 7 in winter (Nov-Feb). Preceding illnesses were URTI in 15 and diarrhea in 4. The Nerve conduction velocity/electromyography showed AIDP in 18, AMAN in 8, AMSAN in 3 and MFS in 2 patients. 21 of the patients received IVIG, 4 had Plasmapheresis, 4 had both and 2 patients received none of these. Ventilatory support was required by 7 patients. Tracheostomy was performed in 2 patients. Hughes functional grading was applied at presentation, discharge and at 3 months. 48% of the children at presentation were at grade 4 and 22% at grade 5; at discharge 61% were at grade 3 and 25% at grade 2; on 3 months follow up 45% were at grade 0, 16% at grade 1 and 19% at grade 2.

**Conclusion:** Hughes functional grading scale for GBS can be applied in the pediatric population.

**Keywords:** Guillian Barre syndrome, childhood, IVIG

### 10.36

#### MENTAL ILLNESS AND SOCIAL ISOLATION

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**Introduction:** Social isolation refers to have no contact or lack of contact with the people of the society. Many times mental illnesses lead to social isolation either as a result of self-inflicted stigma or as community tabooed and shunning of people with mental ailments. Moreover, mental health is thought to be the most tabooed sector in Pakistan because of the shame appended to it.

**Methods:** Relevant electronic databases (MEDLINE, Science Direct, PsycINFO, PubMed, Google search engines, and CINAHL) were systematically searched using an extensive search strategy. Additional articles were identified through citation tracking. One case study method was used to summarize and interpret study data. Manual search was also done by accessing articles from 2000 till 2012 in AKU periodic library.

**Result:** Mentally ill people possess the same position in society as others. If this trend continues, these people will end up in isolation. It has been reported that negative societal behaviors towards mentally ill patients aggravate them to be socially isolated. Almost 100 percent increase in the incident of mental disorder is known. However, 58% of these mentally ill people were found to be socially isolated. **Conclusion:** Severe mental illness has been irretrievably tied to social isolation. In Pakistan, being rationally sick is still seen as a sign of shame for the family. Interventions for such clients could be implemented on all levels. Social inclusion is a fundamental part of healing from psychiatric issues. It needs to be addressed in promoting healthy campaigns to alleviate stigmatization.

**Keywords:** Mental Illness, Social Isolation, Stigma

### 10.37

#### 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.

**Methods:** We reviewed 404 patients with diagnosis of TB meningitis at The Aga Khan University, Karachi. Patients were identified through medical records system at AKU by using ICD-9 codes. We reviewed 467 charts and included 404 patients in study. Incomplete information and non-availability of charts was main reason for non-inclusion of 63 subjects. Poor outcome was defined as death at discharge. All patients underwent lumbar puncture and brain imaging (MRI; 313 and CT scan; 91).

**Results:** Out of 404 patients 209 were male. Mean age was 43 years. A history of positive TB contact was present in 64(16%). Conventional stroke risk factors were present in 162 (39%) patients. Motor weakness was present in 166 patients (40%). Military 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.

### 10.38

#### ISCHEMIC STROKES IN PAKISTAN: OBSERVATIONS FROM THE NATIONAL ACUTE ISCHEMIC STROKE DATABASE

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**Background:** The objective of this study was to establish a multicentre ischemic stroke registry, first of its kind in Pakistan, in order to provide insight into the epidemiology, subtypes and risk factors of ischemic strokes in this country.

**Methods:** Four academic centers (three urban and one rural) participated in this project. The inclusion criteria for subjects included adults (>14years), with acute neurological deficit consistent with clinical diagnosis of ischemic stroke and supported by neuroimaging.

**Results:** Data was available for 874 subjects. Mean age of the subjects was 59.7 years, 60.5% were males and 18% were young. Large vessel strokes were the commonest subtype found in 31.7% followed by small vessel disease (25.7%) and

cardioembolic strokes (10.4%). Almost 32% subjects had ill-defined etiology for their ischemic stroke. Dyslipidemia was most common risk factor present in 83% patients. Data related to in-hospital complications was available for 808 subjects out of which 233 complications were recorded. Pneumonia was the commonest of these, seen in 105 (13%) subjects, followed by urinary tract infection (7.2%). Outcome at discharge was recorded for 697 subjects. 92 had died during hospital stay (13.2%). Only 36% subjects had a favorable outcome at discharge defined as a mRS of 2 or less. A total of 446 subjects out of 697 had poor outcome at discharge (defined as mRS>3).

**Conclusion:** Hypertension and dyslipidemia were the commonest risk factors and large vessel atherosclerosis was the commonest stroke etiology. Elderly patients were significantly more likely to have in-hospital complications, to die during hospital stay and to have a higher modified Rankin score at discharge.

**Keywords:** Stroke, Pakistan, ischemic, south Asia, outcome,

### 10.39

#### VALIDATION STUDY OF THE MINI-MENTAL STATE EXAMINATION IN URDU LANGUAGE FOR PAKISTANI POPULATION

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**Objective:** This study aims to validate and determine the optimal cutoff score in the diagnosis of dementia in Pakistan and study the effects of

gender and education on the MMSE performance in the population.

**Methods:** Four hundred participants took part in the study, 100 were dementia patients and 300 were non-dementia participants. Patients with dementia were from five major hospitals of Pakistan. The MMSE was translated into Urdu. In order to determine the optimal cutoff score, the sensitivity and specificity were calculated.

**Results:** There were 61 men and 39 women in the dementia group and 225 men and 75 women in the control group. The mean score on Urdu MMSE was lower in patients with dementia  $18.5 \pm 5.6$  (range 0-30) as compared to the controls  $26.8 \pm 2.6$  (range 7-30). This difference between the groups was statistically significant ( $p < 0.001$ ). The optimal cutoff points of 24 yielded a sensitivity of 69% and specificity of 93%. The optimal cutoff points of 22 for literate and 19 for illiterate group.

**Conclusion:** These findings confirm the influence of education on the MMSE scores. Therefore, education stratified cutoff scores should be used when screening the population for cognitive impairment.

**Keywords:** Mini Mental Status Examination (MMSE), cognitive function, dementia, mental disorders, validation tool

### 10.40

#### PREGNANCY AND PUERPERIUM-RELATED STROKES IN ASIAN WOMEN

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**Background:** Despite an increased risk of stroke in pregnancy and puerperium, the overall incidence of the condition in this population is low. Therefore, there is limited data pertaining to these patients particularly from Asian countries. Our objective was to describe the risk factors and outcomes of pregnancy-related ischemic strokes among Asian women.

**Methods:** Twelve tertiary care centers from eight Asian countries participated. Data was collected by retrospective chart review in most cases, and prospectively in the remainder. Inclusion criteria were women aged 15-45 years, pregnant or within one month postpartum, presenting to the study center with acute ischemic stroke (arterial or venous) supported by neuro-imaging. Intracranial hemorrhage other than those associated with cerebral venous thrombosis (CVT) or hemorrhagic infarct was excluded. Risk factors were diagnosed based on already published criteria. Outcomes were measured using modified Rankin score at 3 months. Statistical analysis was performed using SPSS version 19.0.

**Results:** 110 women with mean age of 27.94 years presented with pregnancy-related ischemic strokes. 58.2% of the strokes occurred post-partum and 49.1% were secondary to CVT. Venous strokes were significantly more likely to occur post-partum compared to arterial strokes ( $p=0.01$ ), to have an underlying hypercoagulable state ( $p<0.001$ ), less likely to have traditional stroke risk factors ( $p<0.001$ ), to have hemorrhagic conversion of stroke ( $p<0.001$ ), and to have lesser stroke severity and better functional outcome at 3 months ( $p<0.001$  for each).

**Discussion:** Most pregnancy-related strokes among Asian women occurred post-partum. Cerebral venous thrombosis is a significant contributor, and had a better outcome than arterial strokes. Further studies are needed to address the issue of pregnancy-related ischaemic strokes among Asian women.

**Keywords:** stroke, cerebrovascular disease, Asian, women, female, pregnancy, post-partum, puerperium

#### 10.41

#### VIDEO EEG UTILIZATION - THE AKU EXPERIENCE

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**Introduction:** The Electroencephalogram (EEG) remains the main diagnostic tool for Epilepsy; EEGs showing a specific epileptogenic pattern is diagnostic of the disorder, however a single routine EEG misses over 60% of epileptic features. The need for video EEG (VEEG) monitoring is increasing both for diagnostic purpose as well as to lateralize and localize seizure focus as part of phase I evaluation for surgical candidates. Aga Khan University (AKU) has had the facility of VEEG since 2004 but has been highlighted since the launch of the Comprehensive Epilepsy Program.

**Objective:** To analyze VEEG data and its utility at AKU.

**Methods:** We reviewed the data of VEEGs monitored over three years and reviewed the type and reason for referral, age of patients, their EEG findings and categorization of type of seizures.

**Results:** A total of 133 VEEGs were monitored during these three years. Two were intracranial monitoring and are excluded. Ages ranged from 6 months to 68 years, 41 were less than 16 years that is 31.3% were pediatric patients. 40 of 131 (30%) had non-epileptic events; 23 of these 40 (57.5%) were on AEDs; 28 of 131 had temporal seizures. 59(45.8%) had no seizures during the recording, but 27 (45.8%) of these had abnormal interictal EEGs.

**Conclusion:** VEEG is an important tool for epilepsy; it has diagnostic value in differentiation of epileptic seizures and non-epileptic seizures, the classification, localization of onset, and obtaining a definitive diagnosis. The VEEG directly influences the clinical management like the large number (17.7%) of our patients referred as uncontrolled

epilepsy turned out to be non-epileptic. VEEG is thus helpful for improved outcomes.

**Keywords:** EEG, VideoEEG, non-epileptic seizures, seizures, epilepsy

#### **10.42** DISTRIBUTION, SEVERITY AND RADIOLOGIC FEATURES OF INTRACRANIAL STENOSIS IN ASYMPTOMATIC PAKISTANIS

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**Background:** Intracranial atherosclerotic disease (ICAD) is the most common ischemic stroke subtype globally. It is thought to be responsible for 30-50% of all ischemic strokes in Asians.

**Aims:** The aim of the study is to report the frequency of asymptomatic ICAD and its associated Magnetic Resonance Imaging (MRI) findings.

**Methods:** 200 adult participants were recruited from the Radiology Departments of two major diagnostic centers of Karachi from March 2013 till June 2013. Eligible participants were confirmed for the absence of stroke symptoms via the Questionnaire for Verifying Stroke Free Status (QVSFS). QVSFS negative subjects underwent MRI on a 1.5 Tesla scanner. Images were centrally reviewed on Dicom Viewer 3.0 with electronic calipers to calculate the degree of ICAD.

**Results:** Mean age of subjects was 37.1 (S.D 15.1) years. Asymptomatic ICAD was found in 34.5% (n=69) subjects. Of 3800 intracranial arteries that were studied, 2.2% (n=88) vessels had biological disease. 20.5% of these vessels had atherosclerotic irregularity, 43.2% vessels had mild stenosis, 11.4%

had moderate stenosis, 5.7% had severe stenosis while 19.3% arteries were completely occluded. The commonest artery affected was the posterior cerebral artery. 23.5% subjects with asymptomatic ICAD had peri-ventricular lucencies, 10.5% had brain atrophy while 3.5% had silent brain infarcts.

**Conclusion:** Asymptomatic ICAD is common in young Pakistanis, with no gender predilection; it preferentially affects the posterior circulation. Silent infarcts are rare, but periventricular lucencies and atrophy may be observed.

#### **10.43** CLINICAL, LIFESTYLE, SOCIOECONOMIC DETERMINANTS AND RATE OF ASYMPTOMATIC INTRACRANIAL ATHEROSCLEROSIS IN STROKE FREE PAKISTANIS

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**Background:** Intracranial Atherosclerotic Disease (ICAD) is the proximate etiology of every fifth stroke in Pakistanis, yet the early determinants of ICAD are not described.

**Methods:** Analytical cross-sectional study. 200 adults from Radiology Departments of two diagnostic centers of Karachi from March 15th to June 15th, 2013 were studied. Eligible participants confirmed the absence of stroke symptoms via the Questionnaire for Verifying Stroke Free Status (QVSFS). QVSFS probes hemiplegia, hemianesthesia, hemianopia, visual loss, inability to speak and/or understand. QVSFS –ve participants underwent interview covering medical, socio



demographic, lifestyle and anthropometric evaluation using locally validated and standardized definitions. MRI /MRA Images were centrally reviewed to calculate the degree of ICAD using WASID criteria. The significance of risk factors associated with asymptomatic ICAD are reported along with prevalence ratios and 95% confidence intervals.

*Results:* Of the 283 eligible participants approached, 200 participated. Of these, ICAD was found in 34.5% (69) of the participants. Significant stenosis ( $\geq 50\%$ ) was found in 37.6% (32) of the arteries with 20% (17) being completely occluded. Mean age was 37.13 (15.1) years with 62% (124) younger than 45 years and no gender bias. Self-reported hypertension was 26.5 %, (53) diabetes 9% (18) and dyslipidemia 5% (10). After adjusting for other independent variables, Cox Proportional Hazard Algorithm reported higher SES, smokeless tobacco and increasing quintiles of western dietary patterns significantly associated with asymptomatic ICAD.

*Conclusion:* ICAD was found on MR in one in four middle aged asymptomatic Pakistanis (<45years), regardless of gender and associated with modifiable lifestyle risks. NCT02072876

#### 10.44

CAN TRAINED FIELD COMMUNITY WORKERS IDENTIFY STROKE SYMPTOMS IN PAKISTAN USING A STROKE SYMPTOM QUESTIONNAIRE AS WELL AS TERTIARY CARE STROKE NEUROLOGISTS?

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*Background:* Validated tools administered by community workers (CHWs) are needed to create the means to report stroke from resource poor countries.

*Methods:* The study location was a transitional slum of Karachi, Pakistan. QVSFS was adapted and translated into Urdu. Two CHWs received training by a neurologist. Using purposive sampling, CHWs selected 322 community dwelling subjects. Each worker independently collected data. Two vascular neurologists validated CHW findings by directly examining each participant. Sensitivity, specificity, positive and negative predictive values and Cohen's kappa was determined for the CHW administered questionnaire against neurovascular assessment. Data analysis was performed using SPSS version 19.0.

*Findings:* Mean age of the participants was 56.5 years and 71% were women. The overall sensitivity of the questionnaire for picking up stroke was 77% (95% CI: 64.1%-86.9%) and the specificity was 85.8% (95% CI: 83.5%-87.5%). The chance corrected agreement using the Cohen's Kappa statistic was 0.51 (95% CI: 0.38-0.60). Kappa ranged from 0.37 to 0.58 for each of the seven symptom questions. Hemi anesthesia (72.9%) followed by hemiplegia (64.6%) was the most sensitive symptom. To assess the effect of audit and feedback, following a second training session, data was collected on 10% subjects (n=34) again by each CHW while they were still blinded to the final assessment. There was an improvement seen in performance and agreement improved from moderate to substantial.

*Interpretation:* We found reasonable sensitivity and specificity and moderate agreement between CHW administered QVSFS and assessment by vascular neurologist.

*Funding:* This study was funded by Award Number D43TW008660 from the Fogarty International Center and National Institute of Neurologic Disorders and Stroke.

## 10.45

### SERUM ZINC LEVEL IN PATIENTS WITH CEREBRAL INFARCTION

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*Keywords:* Stroke, Cerebral Infarction, Zinc level

*Background:* Stroke is the main cause of adult disability and the third most common cause of mortality in the world. About 87% of strokes worldwide are caused by infarction. This figure poses a great challenge to the health care systems in the world. Therefore control of risk factors of cerebral infarction remains an important target for intervention. From a former marginal status as a “trace element”, Zinc has risen to assume a position as a key modulator of neuronal excitability. Zinc is present in presynaptic vesicles and it is released into synaptic cleft upon the excitation of nerves, mediating various vital physiological functions. Dietary zinc deprivation may affect zinc homeostasis in the brain, resulting in brain dysfunction.

*Objectives:* The rationale of this study was to detect the serum zinc levels among stroke patients secondary to infarction and to gain better knowledge about the role of this micronutrient in the pathogenesis of cerebral infarction.

*Methods:* Total 180 patients with cerebral infarction between the ages of 50-80 years were included in this descriptive cross-sectional study from December, 2011 to June, 2012. CT scan brain was carried out in all such patients to establish infarction. Serum zinc level was analyzed in the serum samples obtained within 24 hours of admission.

*Results:* Of the 180 subjects, with mean age of  $62.74 \pm 8.55$  years, 103 (57.2%) were male while 77 (42.8%) were female. Mean serum zinc level was  $12.294 \pm 3.18 \mu\text{mol/L}$ . Out of 180 patients, 59 (32.8%) had low serum zinc level while 121 (67.2%) had normal serum zinc levels.

*Conclusions:* This study showed that zinc is found to be deficient in a significant proportion of patients with cerebral infarction. The development of new treatment and preventive strategies for the CNS insults need to take into account the role of zinc in neuronal function, damage and repair.

## **Other**

### 11.1 THE IMPACT OF PARENTAL EDUCATION PROGRAM ON CHILDREN'S DEVELOPMENT IN PRIVATE EDUCATIONAL INSTITUTIONS OF KARACHI.

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Karachi

*Background and Introduction:* Educational institutions are working to develop the skills and ability of students according to the set curriculum and program for each standard. However, students are living mostly stays as their home and interact with the parents and feel more comfortable to communicate in all manners. Especially for Early Childhood Students, who are more attached with their parents, are most targeted audience for Parental education program. The actual theme of Parental education program is to develop the mentality of parents to learn basic learning concepts which are deliver in Early Childhood teaching so that the development of children are more focus toward the understanding of basic things. *Methods and Procedures:* The targeted populations are parents of those students who studying early childhood education in private educational institution of Karachi and sample size are 187 which were calculated through cluster sampling. Closed ended questionnaire is use to collect primary data. Correlation data analysis technique is used to calculate the impact of parental education program on children's development based on P-value and R2 Correlation.

*Results and Findings:* Level of satisfaction of parents towards the parental education program was highly significant and value of  $\mu$  is 4. Through observation, there are high impact of parental education program on children's development ( $p=0.0017$ ) ( $R^2=0.891$  or 89.1%) The enhancement of parents mentality through this program is highly significant as it is directly associated with the children's development ( $p=0.0011$ ) ( $R^2=0.833$  or 83.3%).

*Conclusion:* Educational institution should have to focus on Parental education program as it would help to development of children. The way

institution treats and forward learning standard in set timings, parents would also involve in it at their home and in daily life routine and evaluate their children on each and every step.

*Keywords:* Education, Parent, Children

### 11.2 THE IMPACT OF KNOWLEDGE BASED ECONOMY SYSTEM ON DEVELOPING DOCTORS' COMPETENCIES IN PRIVATE HEALTHCARE SECTOR OF KARACHI

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*Introduction & Objective:* Hospitals have a tradition to make a learning environment to share knowledge and resolving issues regarding critical cases among the colleges and specialists in their fields. The structure which makes barrier to make the strong relationship between doctors and continuous learning is the system of sharing knowledge. Many hospitals have a general clubs or panel discussion on critical cases however, they are also much evolve in research based assignments to connect with learning and facilitation.

*Methods and Procedures:* Targeted populations are doctors from the 6 University Hospitals and sample size is 97 which are calculated from Non – probability Purposive sampling. Close ended Questionnaire is use to collect the primary data. Hypothesis made to find out association between dependent and independent variable. Chai Square data analysis technique is used to calculate associations and evaluate hypothesis on bases of P value.

*Results and Findings:* Level of satisfaction of doctors toward association is significant and value of  $\mu$  is 4. Through the observation, there is a strong association between doctors and doing researches in university hospital to enhance knowledge ( $p=0.002$ ). Furthermore, positive association in knowledge based economy system to facilitate those individual who are working under consultants in result that enhancement of knowledge and self-

grooming to face challenged in dealing patients ( $p=0.0012$ ) ( $R^2=0.923$  or 92.3%) and procedures ( $p=0.005$ ) ( $R^2=0.879$  or 87.9%) and team building which connect the system with continuously learning with peer education ( $p=0.0081$ ) ( $R^2=0.909$  or 90.9%) and supporting staff ( $p=0.096$ ) ( $R^2=0.878$  or 87.8%). This system is also play a vital role in doctors' satisfaction of learning.

*Conclusion and Recommendations:* Organization should focus on learning environment in which they used to share knowledge and made some groups which focused on peer education programs and working promote research, for making their better outcome. Opportunity to grow at individual level according to knowledge should be parallel to organizational objectives. Proper bonding with learning environment impacts to create competencies in doctors

*Keywords:* University Hospital, Knowledge, Competencies

#### **11.4** CULTURALLY COMPETENT CARE: IS CULTURE AN ESSENTIAL ASPECT OF HUMAN BEING?

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This paper intends to determine is culture an essential aspect of human being and should we embrace this in health care. There has been much literature reviewed on cultural significance in human nature and cultural competent care, however we will discuss some models and theories which will provide clear understanding of our objectives. We claim that culture is an important aspect of human being and plays an unavoidable part in human caring, thus human and culture has an inseparable bond. Culture is the unique set of rules and regulation, which inspires every aspect of human life. Today, it influences the conditions of human living, playing a vital role in the development of human behavior. Therefore health care organizations need to adopt practices to

maintain the social norms and beliefs of diverse people by delivering culturally competent care. On the contrary, we will also present the scholar's perspective of cultural competence, which deem that it is not an essential aspect of human being. To end, we will suggest that nursing theories, framework and models of culturally competent care demands further exploration for their applicability in different diverse culture context so that gaps can be identified in order to make modifications in existing frameworks of cultural competence.

*Keywords:* Culturally competent, human caring, Nursing Theories

#### **11.5** POSTOPERATIVE PAIN ASSESSMENT USING FOUR BEHAVIORAL SCALES IN PAKISTANI CHILDREN UNDERGOING ELECTIVE SURGERY

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*Background:* Several measurement tools have been used for assessment of postoperative pain in pediatric patients. Self-report methods have limitations in younger children and parent, nurse or physician assessment can be used as a surrogate measure. These tools should be tested in different cultures, as pain can be influenced by socio-cultural factors. The objective was to assess the inter rater agreement on four different behavioral pain assessment scales in our local population.

*Methods:* This prospective, descriptive, observational study was conducted in Pakistan. ASA I and II children, 3-7 years of age, undergoing elective surgery were enrolled. Four pain assessment scales were used, CHEOPS, TPPS, OPS and FLACC. After 15 and 60 minutes of arrival in the post-Anesthesia care unit (PACU), each child evaluated his/her post operative pain by self reporting and was also independently assessed by the PACU nurse, PACU Anesthetist and the parent. The sensitivity and specificity of the responses of the four pain assessment scales were compared to

the response of the child. *Results:* At 15 minutes sensitivity and specificity was more than 60% for doctors and nurses on FLACC, OPS and CHEOPS scales and for FLACC and CHEOPS scale for the parents. Parents showed poor agreement on OPS and TPPS. At 60 minutes sensitivity was poor on the OPS scale by all 3 observers. Nurses showed a lower specificity on FLACC tool. Parents had poor specificity on CHEOPS and rate of false negatives was high with TPPS.

*Conclusions:* We recommend the use of FLACC and CHEOPS scales for assessment by nurses and doctors in Pakistani children aged between 3 and 7 and FLACC scale by the parents

*Keywords:* Pain assessment, Postoperative pain, Behavioral scales

### 11.6 GERIATRIC NURSING: A PART OF NURSING DISCIPLINE

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*Background:* Geriatric nursing is a part of nursing discipline. Recent technology and advancement in medicine has shifted the population pyramid that shows an increase in lifespan and elderly population that's the reason now it is one of most demanding field in nursing.

*Objective:* The aim of the present study is to provide guidelines about communication with geriatric patients.

*Method:* There are literatures available about the health care issues related to geriatric patients in Pakistan but insufficient literature is available regarding the communication of health care provider with geriatric patients in our context. It is desirable to carry out surveys to check the perception and attitudes of Pakistani nurses towards elderly population. Systemic review from online research articles (2000-2011) is done.

*Result:* This paper hopes to show that communication provides a foundation for trusting relationship and its significance in relation to

elderly increases as because of the aging process many sensory deficit occur and it is difficult to communicate.

*Conclusion:* As a nurse we must understand patient's perspective and communicate those understanding to patient as well. The paper is structured as it provides the guideline to the health care providers about the different ways of communication, barriers to effective communication and general techniques of communicating with elderly people.

*Keywords:* elder, communication, sensory deficit

### 11.7 HEALTH RELATED ANXIETY AND HYPOCHONDRIACAL CONCERNS IN MEDICAL STUDENTS: A CROSS-SECTIONAL STUDY FROM PAKISTAN.

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*Background:* Transient hypochondriacal behavior and health related anxiety in medical students is a well-documented phenomenon. After studying a particular disease, medical students are likely to consider any symptoms, earlier regarded as normal to be signs of a disease they are studying. The aim of our study was to investigate the prevalence of this phenomenon and its cognitive and distress aspects among medicals students in Karachi, Pakistan.

*Materials and methods:* This was a descriptive, cross-sectional study. Self-administered questionnaires comprising of demographic details, the Short Health Anxiety Inventory (SHAI), MSD-Perception and MSD-Distress scales were distributed to first through fifth year medical students.

*Results:* 513 medical students, 174 males and 339 females, participated in this study. The mean age of the student population was  $21 \pm 1.6$  years. 375

students (73%) reported to have visited a doctor at least once in the past 6 months. Gender and prior visits to the doctor had no significant correlation with hypochondriacal concerns. The overall prevalence of significant hypochondriacal concerns was 13.5% (61 students). No significant variations were observed between the mean scores of SHAI or the cognitive component of the phenomenon across the five years of study. Second year medical students experienced a comparatively greater degree of worry (distress component of the phenomenon) than fifth year students. 50 students (9.9%) admitted to smoke cigarettes. Smoking correlated with a greater likelihood of developing hypochondriacal anxiety.

*Conclusion:* Although, the prevalence of substantial hypochondriacal fears in medical students in Pakistan was low, there is a need to counsel students on coping with the phenomenon, and reducing levels of stress and health related anxiety.

*Keywords:* Medical students, Hypochondriasis, Medical education

### 11.8 PROMOTING COMPLIANCE TO INFECTION CONTROL PRACTICES AT EMERGENCY CARE SETTINGS

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*Introduction:* Healthcare systems, around the globe, face a constant challenge to enable provision and promotion of quality and safe healthcare. These outcomes can be accomplished by providing healthcare that is based on the best available clinical practice evidences. Emergency care setting is an area that represents a high density environment of acutely-ill patients with life threatening conditions. Such situations imply an evident risk of spread of infections to patients or to healthcare providers. However, infection occurrence and spread is completely preventable if infection control techniques are practiced diligently.

*Objective:* To describe the factors affecting on infection control practices among health professionals working in an emergency care setting.

*Method:* Using descriptive approach factors affecting health care-associated infections were explored through evidence-based literature, observation and reflection as practitioners.

*Results:* Results showed satisfactory knowledge levels such as 86.8% regarding hand hygiene practices. In contrast, knowledge and understanding regarding standard and transmission based precautions is still considered sub-optimal i.e., 31.85%. Whereas, a highly positive attitude was exhibited by nurses with a mean score of 9.1 on a 1-10 scale pertaining to disinfection procedures. However, only 57.5% instances of clinical procedures were performed in conformity with infection control practices. There are various associated factors including unpredictable nature of emergency care; lack of healthcare personnel, time constraints, increased work load, overcrowding and level of working; as novice or experienced. Evidence suggests that a combination of strategies like interactive educational sessions, providing reading material, use of flyers as reminders, audit and feedback, external incentives, reinforcement and modeling offer potential solutions to treat the inhibiting factors resulting in poor compliance to infection control practices.

*Keywords:* Compliance, Infection Control, Health care

### 11.9 ISOFLURANE ALONE VS SMALL DOSE PROPOFOL WITH ISOFLURANE FOR REMOVAL OF LARYNGEAL MASK AIRWAY IN CHILDREN:

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University, Karachi*

*Background:* Current practice of LMA removal in pediatric patients is divergent between awake and deep LMA removal. Reported airway related complication rate is 10%-53% with awake

compared to 2.6%-27% with deep LMA removal. However, safe and correct timing of smooth LMA removal is still under debate. Our study aim was to compare smooth LMA removal under deep plane of anesthesia by two different techniques; presence of 1.2 isoflurane MAC versus less than 0.5 isoflurane MAC with low dose of propofol at the time of LMA removal in children.

*Methods:* Fifty ASA I & II children age 2-10 years scheduled to undergo short elective surgical procedures requiring general anesthesia and spontaneous breathing technique were enrolled. Anesthesia induction, maintenance and analgesia (caudal) were standardized in all patients. Patients were randomly assigned into one of the study group: alone isoflurane (group-D) and propofol with isoflurane (group-P). At the end of surgery and 5 minutes prior to LMA removal the predetermined isoflurane MAC was achieved. Inflated LMA was removed in group-D at MAC of isoflurane 1.2 and in group-P the LMA was removed at MAC of isoflurane less than 0.5 with addition of propofol 1 mg/kg. All study subjects were monitored for demographic, number of LMA insertion attempts, adverse airway events (coughing, hypersalivation, teeth clenching, oxygen desaturation).

*Results:* Significant differences were not seen in patient's demographics, ASA status, duration of surgery, duration of anesthesia and number of LMA insertion attempts in study subjects. Statistically insignificant difference was found for the cough and hypersalivation in both groups. Incidence of airway obstruction (36% in group-D versus 12% in group-P) and teeth clenching (28% in group-D versus 14% in group-P) were significant in group-D. The duration of emergence time was statistically significant in group-P (6.88min) compared to group-D (9.76min). The recovery room stay was similar in both groups. The laryngospasm and hypoxemia was seen in one patient in group-D.

*Conclusion:* Deep anesthesia technique by addition of propofol with isoflurane (less than 0.5 MAC) was found to be smooth LMA removal in children.

*Keywords:* laryngeal mask airway, pediatric, technique

## 11.10

### AUDIT OF PRE-OPERATIVE FASTING OF PEDIATRIC PATIENTS COMING FOR SURGERY IN A UNIVERSITY HOSPITAL

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*Objective:* Audit of pre-operative fasting of paediatric patients coming for surgery in a University Hospital. Place of study: Department of Anaesthesiology, Aga University Hospital, Karachi, Pakistan. Duration: One month. Study Design: A questionnaire based survey

*Background:* Fasting in children is a pre-requisite before anaesthesia. Optimum pre anaesthetic fasting in paediatric age group is challenging task. Fasting duration is decided keeping the age and demands of children. However, it is commonly observed that children are kept hungry, thirsty for periods which are often longer than recommended. We wanted to determine the current state of actual fasting duration of children and compare it to our departmental guidelines for fasting.

*Materials and methods:* There were 102 children up to age of 16 receiving any paediatric surgery included in the data. The questionnaires were filled either by anaesthesia consultant or a trainee. The information related to fasting duration and if patients were receiving any hydration through any extra oral route, was attained from patients' parents/guardians. The fasting durations was then compared with the recommended ones.

*Results:* In this study only 4% of children could be labeled as having the optimum fasting. Based on the current guidelines 96% of children did not follow the guidelines.

*Conclusion:* Paediatric patients are being subjected to prolonged durations of fasting prior to anaesthesia.

*Keywords:* duration, Fasting, hydration, paediatric



### 11.11 IMPORTANCE OF ESTIMATION OF FOLLICULAR OUTPUT RATE (FORT) IN FEMALES ASSISTED BY INTRACYTOPLASMIC SPERM INJECTION

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*Background:* We aimed to estimate pregnancy outcome after ICSI in terms of oocyte parameters, embryo quality, endometrial thickness, hormone and cytokine levels in women stratified on the basis of follicular output rate (FORT).

*Methods:* Quasi experimental design recruited one thousand and fifty females with age between 21-40 years, infertility more than 2 years, body mass index of 18–35 kg/m<sup>2</sup>, menstrual cycle of 25 ± 7 days, serum FSH levels less than 8 IU/ml. Females on short agonist or antagonist protocol with diagnosis of polycystic ovarian syndrome, fibroids or in their male partner sperms retrieved by testicular biopsy were excluded from the study. Down regulation of ovaries was followed by controlled ovarian stimulation, ovulation induction (OI), oocyte pick up, in vitro fertilization, embryo transfer (ET) and confirmation of pregnancy was done by serum beta hCG of more than 25mIU/ml and cardiac activity on trans vaginal scan. FORT (ratio of preovulatory follicle count to antral follicle count × 100 on OI day) stratified females into low under the 33rd percentile, medium between the 33rd and the 67th percentile and high above the 67th percentile. Characteristics of groups were compared by one way analysis of variance.

*Results:* Females 276(33%), 288 (34%) and 282 (33%) comprised of low, medium and high FORT groups respectively. The number of retrieved, mature and fertilized oocytes, cleaved embryos, endometrial thickness and number of gestational sacs in the high FORT group was significantly high (p<0.001).

*Conclusion:* The FORT in non PCOS patients may reflect good reproductive outcome after ICSI with maximum clinical pregnancies in high FORT group

*Keywords:* Infertility, Intracytoplasmic sperm injection, Follicular output rate

### 11.12 ROLE OF SMALL GROUP INTERACTIVE SESSIONS IN TWO DIFFERENT CURRICULUM BASED MEDICAL COLLEGES

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*Background:* SGIS are taken in the form of traditional tutorials or Clinically Oriented Problem Solving Tutorials. These sessions enable an adult approach toward learning, reinforce group activity and team based learning and help in boosting of the confidence of students

*Objective:* To compare perception of students on usefulness of SGIS studying in conventional medical colleges (CMC) & problem based medical colleges (PBL-MC).

*Material & Methods:* Cross sectional descriptive study carried from January - December 2012. Student's perception on usefulness of SGIS was evaluated through questionnaire filled by 100 1ST year MBBS students, from two medical colleges. 13 students from Group I and 8 from Group II were excluded from the study due to incomplete proformas. Analysis done on SPSS version 15.

*Result:* Responses of 179 students of Group I and II, revealed importance of SGIS in the understanding of content and facilitation in active learning. Significant difference in perception was found with respect to better interaction, confidence, clinical application and preparation for university examinations in CMC students.

*Conclusion:* The importance of SGIS in learning of medical students cannot be overlooked in conventional teaching □ however in PBL-MC a combination of educational strategies can be employed for better learning of students.

*Keywords:* Small group interactive sessions, conventional medical colleges, problem based medical colleges

### 11.13 SEXUALITY EDUCATION AMONG YOUTH, A MAJOR CHALLENGE TO IMPLEMENT IN PAKISTAN.

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Human sexuality is an integral component of human life and well-being. It is a widespread perception among local population that sexual needs are limited to reproduction and child birth, however, in reality sexual needs of a human persists from their birth till death. Unfortunately, unlike all other physiological and psychological needs, sexual and reproductive health needs are neglected especially in developing countries like Pakistan. The aim of this paper is to identify the causes and repercussions of lack of sexuality education among youth in Pakistan. A systematic literature review of 12 recent national and international articles (2009 to 2015) was conducted from reliable databases. The findings indicate that sexuality education encompasses six concepts that are human development, relationships, personal skills, sexual behavior, sexual health and society and culture. The core reasons of lack of formal sexual education identified are: lack of formal curriculum in schools, lack of knowledge and skills among parents and teachers, and misconceptions regarding early sex education among teenagers. However, a formal teaching about these components to youngsters' aid in preventing variety of sexual health issues in Pakistan for instance, prevention of child sexual abuse, early pregnancies, and sexually transmitted infections. Therefore, it is recommended that government should cooperate with NGO's to design and implement cultural and age appropriate sex education among youth and train parents and school teachers to deliver knowledge that can enhance youth well being and reduce sexual health issues in Pakistan.

*Keywords:* sexuality education, youth, sexual health issues

### 11.14 PAKISTAN COMMUNITY MIDWIVES (CMWS) DEPLOYMENT EXPERIENCE

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*Introduction:* After trying various low cost strategies for improving maternal and neonatal health at the community level in 2006, the government of Pakistan with collaboration of Nursing Council planned to train and deploy 12,000 Community Midwives as Skilled Birth Attendants within the country. On completion of the course work including clinical experience, the CMWs were deployed by using standard guidelines.

*Objective:* To explore the experiences of Community Midwives regarding their deployment in the country.

*Method:* A Qualitative Descriptive Exploratory design using Focus Group Discussions with semi-structured question guide was conducted. Using purposive sampling, the study recruited 11 qualified Community Midwives who were deployed in Matiari district, following the Pakistan Neonatal Maternal and Child Health Program Community Midwives guidelines.

*Results:* The deployment experiences of the Community Midwives were best characterized by one theme: "surviving as Community Midwives" and five related categories: (1) lack of identity and recognition; (2) state of helplessness; (3) depletion of competence and confidence; (4) community male dominance; (5) unavailability of resources and financial support.

*Recommendation and Conclusions:* The Community Midwives disclosed that they are battling to survive in their communities as Community Midwives. They appeal to policy makers at the Federal, Provincial, and District levels that firstly, there needs to be a revision of the CMWs deployment guideline policies, especially those related to the preparation of CMWs for working independently in communities, introduction of CMWs and their roles within communities, establishment of independent work

stations, and improved remuneration processes. Secondly, they advise policy makers to prepare a thorough on the ground orientation at the district level for the implementation of these new guidelines.

*Keywords:* Pakistan Community Midwives, Deployment, Survival

### 11.15

#### ASSESSMENT OF BLOOD DONATION INTENTION AMONG MEDICAL STUDENTS IN PAKISTAN -AN APPLICATION OF THEORY OF PLANNED BEHAVIOR

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*Introduction:* Theory of Planned Behavior proposes a model which can measure how human actions are guided and has been successfully utilized in the context of blood donation. It is important to search for plausible determinants of blood donation amongst non-donors in Pakistan. This study was aimed to understand the intention of blood donation among medical students who had never donated blood.

*Study design:* We employed a decision-making framework in a survey. Place and duration of study: The Aga Khan University; Jan-Dec 2014

*Participants & Methods:* Survey responses were collected from 391 medical students from four various universities on a defined questionnaire. The tool comprised of 20 questions that were formulated to explain donation intention based on theory of planned behavior. The construct included questions related to attitude, subjective norm and perceived behavior control, descriptive norm, moral norm, anticipated regret, donation anxiety and religious norm.

*Results:* All studied parameters correlated well with intention with a p-value of <0.05. Perceived Behavioral Control had the highest correlation followed by moral norm, anticipated regret, attitude, descriptive norm and religious norm. Donation

anxiety was least correlated and in fact bore a negative correlation with intention.

*Conclusions:* Medical students as novice blood donors showed a positive attitude towards blood donation. Theory of planned behavior can be successfully utilized in determining the antecedents towards blood donation behavior.

*Keywords:* Blood donors, intention, theory of planned behavior

### 11.16

#### COMPARISON OF ANXIETY SCORE IN CHILDREN WITH AND WITHOUT PARENTAL PRESENCE DURING INDUCTION OF ANAESTHESIA.

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*Introduction:* It is important to reduce the preoperative anxiety experienced by children for humanitarian reasons and to improve their cooperation with medical staff. Anxiety at induction of anaesthesia is associated with distress on awakening in the recovery area and with postoperative behaviour problems. Different technique directed at relieving children's anxiety includes parental presence at anaesthetic induction, behavioral preparation programs and premedication. In this study we compare two different techniques of parental presence and absence of parent at the time of induction on children's anxiety. *Objective:* 1. To compare the mean anxiety score in children at time of induction of anaesthesia with two different techniques of parental presence and a control group with no parent present.

*Main Outcome Measure:* mYPAS score was calculated and recorded at induction of general anaesthesia before applying face mask. A value of less than 30 on the scale indicated low anxiety.

*Method and Material:* Study Design: Randomized control trial Setting: Operating rooms of Aga Khan University Hospital Subjects And Material: One hundred and twenty three ASA I and II patients, aged between 1 to 8 years undergoing elective day

care surgery were enrolled in the study and randomly allocated to 1 of 3 groups by the sealed opaque enveloped technique. The 3 groups were: A: Control group: In which only child went to operating room alone and parents stayed out. B: Parents (either father or mother) accompanied the child in OR, where he/she had sat or stand near the operating table. The child was sitting on the operating table and induced there. C: Parents (either mother or father) came in OR with child and parent sat on a chair. The child either sat or lye on their lap. Child's head was rest on his mother/father's left arm or shoulder and he/she wrapped their right arm, around the child. Study performa including mYPAS filled by primary investigator at induction of general anaesthesia before the application of face mask.

*Results:* The mean anxiety score was significantly high in group A as compared to group B and C ( $50.38 \pm 13.90$  vs.  $43.50 \pm 10.43$ ;  $\text{diff} = 6.88 \pm 2.42$   $p=0.016$ ) and ( $50.38 \pm 13.90$  vs.  $41.17 \pm 7.64$ ;  $\text{diff} = 9.21 \pm 2.42$   $p=0.001$ ) respectively. Difference in mean anxiety score between group A and group C was highly significant ( $p=0.001$ ) whereas mean anxiety score was not significant between group B and group C ( $p=1.00$ ). Comparison among age groups regarding anxiety score showed a statistically significant difference in group aged between 5 to 8 years ( $p=0.001$ ) compared to group aged between 1 to 4 year old ( $p=0.06$ ).

*Conclusion:* Parental presence during induction of anaesthesia is an effective technique in reducing children anxiety.

*Keywords:* Parental presence, Children anxiety, mYPAS

### **11.17** FACILITATING FACTORE TO ENHANCE BLS RETENTION AMONG NURSES

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*Introduction:* Cardiac arrest is the most life threatening condition that requires immediate and effective chest compression; Chances of survival depend on early and effective cardiopulmonary

resuscitation (CPR). As most of the in hospital cardiac arrest are witnessed and dealt by nurses, therefore it is necessary that nurses basic life support (BLS) knowledge should be maintained to enable them to provide safe, competent and early cardiopulmonary resuscitation to cardiac arrest victims. Since 1980s many research articles had highlighted the importance and issues related to CPR skills (Hollis & Gillespie 2000). Similarly, at present also many researchers had explored the effectiveness of resuscitation training and put forward the fact that nurses skills and knowledge deteriorate over time. For that reason, continue professional education is recommended to improve their BLS skills and knowledge. The purpose of this literature review is to examine literature on facilitating factors in retention of skills and knowledge among nurses.

*Aim:* The aim of this literature review is to identify facilitating factors in retention of basic life support (BLS) knowledge among nurses.

*Conclusion:* BLS retention in healthcare provider especially in nurses is a multifarious question and literature has given many recommendations to improve its retention in nurses. However, it is possible that the best approach is using a combination of all these approaches discussed below. Nurses who work in less critical care area should receive AED training; also practice it frequently to prevent delays as suggested by American heart association (2010). Resuscitation training must reflect real cardiac arrest scenario so that staff can easily recognized arrest victim and perform CPR. Literature review suggests that "BLS" mock drill training must be carried out every 6 months to prevent decline in BLS knowledge but it would not be possible to carry out in real situation ; as there are many factors including staffing and budgeting which effect on its implementation. It would be appropriate if team leaders or head nurses conduct mock drills in there units to check and educate BLS knowledge. It is also learned that multiple strategies should be adopted by nursing education services for easy and better understanding and retention of BLS skills and knowledge. In this way nurses would be able to better understand and retain there BLS skills and knowledge.

**Keywords:** cardiopulmonary resuscitation, basic life support, retention

### 11.18

#### WHAT ARE THE FACTORS THAT IMPACT PERFORMANCE OF NOVICE NURSES WORKING IN CRITICAL CARE AREAS AND ROLE OF MANAGEMENT?

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**Introduction:** Novice nurses are those who have less or no experienced. They are either new to the profession or new to the area of practice (Duchscher, 2008; Goodwin-Esola, et al., 2009). As they have just left the nest of nursing schools, they tend to have enough theoretical knowledge with. According to Morrow (2009) these nurses need period of transition lasting roughly one year, during this period novice nurses grow both personally and professionally. According to Benner, “a novice nurse is a beginner who must ‘have rules with which to practice, as there is no experience from which to draw conclusions’” (as cited in Marble, 2009, p. 311). Benner further explains that for transition from a novice to an expert nurse, a newly graduated nurse must move through the stages of novice, advanced beginner, competent, proficient, and expert. “During this period of transition, a novice nurse requires the guidance of others in order to learn how to apply their theoretical knowledge to real life clinical experiences” (Morrow, 2009). **Aims / Objectives:** The aim of this literature review was to examine factors that positively and negatively affect practices of novice nurses working in critical care area. To explain strategies that could be incorporated by nurse manager to enhance novice nurses practices.

**Method:** The literature review was done using PUBMED database. Articles published between 2004 -2014 were obtained. Articles available in full text, published in the English language and that identify factors and made suggestions for role of nurse manager, were included in the review. Key

words used for literature search were ‘Novice nurse’ or ‘graduate nurse’, ‘challenges’, ‘facilitating factors’, ‘experiences’, ‘critical care’, ‘intensive care’, ‘transition’, and ‘clinical practice’. Total of 12 articles were selected for review.

**Data Analysis:** In order to analyze the data acquired from literature review, data was categorized into four main themes. Those were problems or issues highlighting need of study, challenges faced by novice nurses, facilitating factors and strategies used in studies. Each of 12 articles was reviewed and data from each article was compiled in a table according to four main themes. Based on findings, each theme was then further classified into sub themes. (refer appendix for table showing data analysis)

Literature showed wide range of problems that signify the need to work on smoothening transition of novice nurses. These findings were classified in three sub themes according to nature of problem. These were quality and safety, errors done by novice nurses and high turnover of nurses. Under the umbrella of quality and safety, highlighted issues were compromised quality of care and patient safety. Whereas; second theme that is errors done by novice contained competence gap and under preparedness of nurses as problems. Third theme, high turnover captured aging of registered nurses work force, recruitment and retention, job satisfaction of novice and nurses shortage. However, patient safety and recruitment and retention were most highlighted problems found in literature. Out of n=12, 6 articles talked about patient safety and 6 showed concern for recruitment and retention on nurses.

**Conclusion:** To conclude, newly graduate nurses when join critical care area, they lack confidence, knowledge and skills that directly affect their performance. High expectations and non supportive environment further degrade their confidence and ability to perform. However, proper orientation and awareness of environment, adequate support from co- workers and management and relevant opportunities to build on knowledge grounds enhances confidence of novice nurses to interact and perform effectively. It is however, important to understand that transition is progressive and not abrupt. It requires time, efforts and resources. Role

of management is to make efforts for proper time and resource utilization and to provide reasonable time to novice to get adjusted to critical care environment.

*Keywords:* Novice nurse, challenges, facilitating factors'

### 11.19

#### DIAGNOSIS OF SPINAL PAIN; HOW EFFECTIVE THE INTERVENTIONAL PAIN PROCEDURE IS ?

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*Introduction:* Interventional pain management (IPM) is a rapidly growing and evolving specialty of medicine devoted to the diagnosis and treatment of chronic pain. Despite of modern technology like magnetic resonance imaging (MRI), computed axial tomographic scanning (CAT scan), neurophysiological testing physician are unable to diagnose the cause of low back pain in only 15% of patients in the absence of disc herniation and neurological deficit while diagnostic IPM procedures can reveal its source in 90% of patients. The objective of this audit was to observe how effective the interventional pain procedure in the diagnosis of spinal pain.

*Methods:* After approval by Ethical Review Committee and departmental Anaesthesia Research Committee, all adult patients with a history of spinal pain  $\geq 6$  weeks and refractory to conservative treatment scheduled for diagnostic IPM procedure for spinal pain between January to December 2013 were enrolled in this audit. Patients with a history of spinal surgery were excluded from the audit. Common IPM procedures included in this audit were epidural injection (cervical, thoracic, lumbar and caudal), facet joint block and sacroiliac joint block. Pain score was monitored by numerical rating pain scale (NRS) 0 to 10 scale. Efficacy of diagnostic block was considered positive in case of  $\geq 50\%$  pain relief.

*Results:* Diagnostic intervention for spinal pain was performed in 102 patients (Average age  $54.83 \pm 16.45$ ), among them 60% (n=61) were females and 40% (n=41) were males. Duration of spinal pain was found to be more than a year in 56% patients. As for as pattern of pain distribution concerns, 87% patients had radicular pain compare to 13% patients were suffering from axial pain. Efficacy of diagnostic intervention for spinal pain i.e.  $\geq 50\%$  pain relief was found in 83.33%(n=85).

*Conclusion:* With this audit it is observed that diagnostic interventions have a proven role in diagnosis of spinal pain. By doing this audit it is also observed that these interventions not only help in diagnosis but at the same time leads to significant pain relief in terms of numerical rating pain scale.

*Keywords:* Diagnostic intervention, Spinal pain, Efficacy.

### 11.20

#### REPORTED MEDICATION ERRORS COMMITTED BY UNDERGRADUATE (FOUR YEAR BSCN) STUDENTS AT AGA KHAN SCHOOL OF NURSING AND MIDWIFERY (AKUSONAM), KARACHI

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*Introduction:* Medication administration is an important part of the baccalaureate nursing curriculum. Medication errors by undergraduate nursing students have been frequently reported at faculty meetings at the study setting. As per researchers' knowledge, no study has been conducted in the local context so as to identify the medication errors committed by nursing students.

*Methods:* A retrospective study was done to identify the reported medication errors, their types and associated factors, through a document review, for the enrolled four year BScN students at Aga Khan University between 2010 to 2013.

*Results:* Out of the total 325 students, seven errors (2.3%) were reported. Out of these seven errors,

three students (42.9%) did near miss errors and four nursing students (57.1%) did actual medication errors. Errors in the preparation phase were committed by five students (71%). Most errors i.e. 42.9% occurred in surgical units. Insulin was found to be the drug where most (42.9%) errors occurred. In response to the most medication errors, faculty had taken the action of remediation (71.4%) and preparation of a file note (28.6%) for the student. *Conclusion:* This study was the first of its kind, which explored medication errors among nursing students in South Asia. The findings will be of importance for nursing students, educators and service providers.

*Keywords:* Medication Errors, undergraduate Nursing Students, Factors associated with errors

### **11.21** SINGLE DOSE VERSUS 24 HOURS ANTIBIOTIC PROPHYLAXIS IN CAESAREAN DELIVERY-AN ATTEMPT TO REDUCE ANTIBIOTIC USE

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*Objective:* To compare single dose antibiotic prophylaxis with 24 hour regime in Cesarean Delivery. Study Design: Randomized Controlled Trial. Place and Duration of Study: The study was conducted in Aga Khan Hospital for Women, Garden, Karachi, which is a secondary care unit of Aga Khan Hospital and Medical College Foundation. Duration of the study was from April 2010 to November 2010. *Methodology:* All eligible women, after taking informed consent, were randomized into two groups. Women in group A (n – 74) were given single dose antibiotic pre incision and in group B (n – 83) were given 24 hour antibiotic regime. All women were followed upto 30 days for infectious morbidity (SSI, fever, UTI and endometritis).

*Results:* Demographic, clinical and laboratory features were comparable among both the groups.

In group A, 11 women (14.9%) and in group B, 17 women (20.5%) developed symptoms (p-value=0.35). According to CDC 1999 definition, SSI was found in three women (4%) in group A and in 7 women (8.4%) in group B (p value=0.26). In group A, three women other than SSI required antibiotics (2 for UTI and 1 for Mastitis) compared to 1 (for Mastitis) in group B. Endometritis was not observed in any group. *Conclusion:* Single dose antibiotic prophylaxis given pre incision was found to be effective in cesarean delivery. The risk of SSI was not increased, therefore it is safe to give single dose antibiotic for prophylaxis in cesarean deliveries.

*Keywords:* Antibiotic Prophylaxis, surgical site infection, infectious morbidity in cesarean section

### **11.22** APACHE II ANALYSIS OF A SURGICAL INTENSIVE CARE UNIT POPULATION IN A TERTIARY CARE HOSPITAL IN KARACHI (PAKISTAN)

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*Purpose:* Performance of prognostic models deteriorates over time by changes in case-mix and clinical practice. This study was conducted to describe the case-mix of a surgical intensive care unit (SICU) and assess the performance of APACHE II scoring system in this cohort.

*Methodology:* We analyzed 213 adult patients admitted to the surgical intensive care unit (SICU) of Aga Khan University Hospital, from January 2011 to December 2012 and the performance of APACHE II scoring system was assessed in this population.

*Results:* The mean age of patients was 46.31 years (SD ±18.43), 67.1% patients were male and mean length of ICU stay was 6.54 days (SD ± 7.18). Admissions to SICU were from seven service departments with the highest admissions from general surgery followed by trauma and

neurosurgery. The mean APACHE II score of this SICU population was 15.89 (SD  $\pm$ 8.06), 12.88 (SD  $\pm$ 6.29) in survivors and 22.24 (SD  $\pm$ 7.66) in non-survivors ( $p < 0.01$ ). The overall mortality was 33%, with SMR of 1.0. No patient survived with an APACHE II score of more than 34. In this SICU population the calibration and discrimination of the APACHE II scoring system was acceptable, i.e. [(H-LS 11.76 ( $p=0.16$ )] and (area under the receiver operating curve = 0.83).

*Conclusion:* APACHE II scoring system allows meaningful analysis of SICU population, therefore, it is recommended, that this simple and cost effective scoring system should be used to identify patients with high risk of death to justify the decisions of withholding expensive therapies in resource limited settings.

*Keywords:* APACHE II, severity scoring, surgical ICU

### 11.23

#### FATHER'S INVOLVEMENT IN CHILD PLAY: PERCEPTION AND PRACTICES OF PAKISTANI FATHERS

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*Background:* Fathers play numerous roles in the lives of children however play is considered as one of the most pleasurable interactions of father child relationship. The study aimed to explore father's perceptions and practices related to play activities of children during early years, identify the similarities and differences in play activities related to child gender and challenges that fathers face in their involvement with children.

*Methodology:* A qualitative research approach was used, specifically the exploratory research design to explore father's perception and practices. Two Focus group Discussions and six In-depth interviews were conducted in two communities of Karachi, Pakistan. Each FGD involved 10 participants who were recruited through purposive sampling. Father who have child up to eight years

of age and consented to participate was selected for the study.

*Findings:* Findings of the current study have been categorized into four main themes as accessibility, engagement, responsibility and knowledge. Fathers valued play, considered play 'important for the development of their children and involved more in play activities with their children compared to other activities. In terms of engagement they displayed different play behaviors like scaffolding, guiding and behave like age mates while playing. There were no significant gender differences found in terms of play activities. A number of challenges such as time, work load, self-control and extended family influences were also reported.

*Conclusion:* Father's involvement in child's play activities improves father child interaction. However there is a need to plan effective education sessions that further enhance father role in child development. There is also a need for future research that can further explore the complexity of fatherhood.

*Keywords:* Father Involvement, Child Play, Early Years

### 11.24

#### FORMATIVE ACTION RESEARCH ON USE OF MEDIA TO INCREASE AWARENESS ABOUT EARLY CHILDHOOD DEVELOPMENT IN THREE DISTRICTS OF BALOCHISTAN

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Human Development Programme, Aga Khan University, Karachi, Marie Stop Society and British Counsel

*Background :* The use of electronic media is becoming a very important means for creating mass awareness. The main purpose of this study was to investigate the effectiveness of media campaign in promoting good practices for Early Childhood Development (ECD) in the three districts of Balochistan. *Methods:* Formative action research (FAR) design was adopted, using the Social Learning Theory framework. The FAR completed



four phases in each field site with action reflection cycle as main component in each phase. In the first “inception” phase available and preferable media resources for the community were examined and community resource groups were formed. During the second phase of “Planning and Development”, ECD messages were framed, 10 Radio promos and 2 Videos were developed. Third phase comprised “Action and Implementation”, during this, radio promos and videos were broadcasted. Last phase was “Evaluation” where the impact of media campaign was measured. *Results:* This media campaign increased parents’ ability to critically analyze their attitude, behavior and pattern of parenting and take action to correct them in a positive way. The messages increased their knowledge about role of parent, child care, child play and other activities. The messages helped in changing their attitude and practices in reducing discrimination against girl child. Respondents highlighted the increased use of positive practices of praise and encouragement with children on any task. A positive change in home environment was also reported by almost all participants of FGDs and IDIs in all three field site.

*Conclusion:* Media campaign is an effective tool to raise awareness about early child development among parents, children and other family members.

*Keywords:* Media, Formative Action Research, Early Childhood Development

### **11.25** COMPLICATIONS ASSOCIATED WITH EPIDURAL ANALGESIA FOR POSTOPERATIVE PAIN RELIEF AND THEIR MANAGEMENT AT AGA KHAN UNIVERSITY HOSPITAL

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*Background:* Epidurals provide high quality pain relief and facilitate postoperative recovery. Epidurals have a risk of minor, or very rarely, major complications. Common complications include

motor block, hypotension, pruritis, nausea, vomiting, post-dural puncture headache, urinary retention, respiratory depression, neurological damage, premature catheter pull out, and inadequate analgesia. As part of continuous quality assurance activity, we conducted an audit to assess the frequency of various complications associated with epidurals for postoperative pain relief and the steps taken by acute pain service (APS) to manage these complications.

*Methods:* All patients who received epidural analgesia for postoperative pain relief from January 01, 2012 to December 31, 2013 were included. Data were collected from the Acute Pain Service register. Parameters recorded included epidural level, local anaesthetic concentration and any complication that occurred. The interventions done to manage these complications were recorded. Frequency and percentages were computed for categorical variables and mean and median were reported for quantitative variables.

*Results:* 1030 patients received epidural analgesia during the study period. Incidence of complications was 28.8%, of which motor block was seen in 22.71% cases, hypotension in 5.92%, nausea and vomiting in 5.34%, dural tap, catheter pullout, pruritis were observed in less than 1% cases. Epidural analgesia was discontinued in 1.46% cases due to complications.

*Conclusion:* Motor block was the commonest complication. We recommend use of lower concentrations of local anaesthetics and increasing use of thoracic epidurals. More frequent follow-up by APS would help in avoiding most complications and their earlier management.

*Keywords:* epidural analgesia, postoperative pain relief, complications

### **11.26** INTERVENTIONAL PAIN MANAGEMENT FOR THE TREATMENT OF SPINAL PAIN: AN AUDIT AT PAIN CLINIC IN TERTIARY CARE HOSPITAL

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**Introduction:** Interventional pain management (IPM) is the discipline of medicine devoted to the diagnosis and treatment of pain-related disorders. **Objective:** The objective of this audit was to evaluate the efficacy of interventional pain management (IPM) procedures for treatment of spinal pain.

**Materials And Methods:** All adult patients who underwent diagnostic interventional pain management (IPM) procedure between 1st January 2013 to 31st December 2013 were enrolled in this audit. Patients who underwent therapeutic IPM procedure for spinal pain after positive diagnostic IMP procedure were included in this audit. All patients were followed for next one year. Effective therapeutic IPM procedure was defined as 60 -70% decrease in numerical rating pain score from base line after 2 to 3 IPM procedures for up to Six months.

**Results:** Total sixty four adult patients with spinal pain were reviewed in which 23 were male while forty one were female. Eight patients had axial pain while 56 had radicular pain. Out of 64, four patients had spine surgery before procedure. Two patients underwent spine surgery because of ineffective pain control. Statistically significant difference was observed in pain score of patients between pre-IPM and post-IPM procedure ( $p=0.0005$ ). In 90% of patients, interventional pain management (IPM) procedures were effective for treatment of spinal pain.

**Conclusion:** In this retrospective study, interventional pain management (IPM) procedures proved effective for treatment of spinal pain in 90% patients.

**Keywords:** Spinal pain, interventional pain management procedure, chronic pain

### **11.27** THE FREQUENCY OF IMMEDIATE NEONATAL COMPLICATIONS (HYPOGLYCEMIA AND NEONATAL JAUNDICE) IN LATE PRETERM AND TERM NEONATES

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**Objective:** The frequency of immediate neonatal complications (hypoglycemia and neonatal jaundice) in late preterm and term neonates

**Background:** It is now realized that babies born at 34 to 36 weeks should not be considered as term babies as the magnitude of morbidities in these subset of babies is much higher. Compared with term infants, infants born late preterm (34 to 36 weeks) are at increased risk for early morbidities. Like hypoglycemia, hyperbilirubinaemia. So this study will provide a current magnitude of immediate neonatal complications (hypoglycemia and neonatal jaundice) in late preterm and term neonates. **Study Design:** Cross sectional Study . **Place and Duration of Study:** Department of Pediatric, the Aga Khan University Hospital, Karachi, from January 2015 to June 2015.

**Methods:** All neonates who fulfill the inclusion criteria were enrolled in the study after taking informed consent from parents. After enrolment the demographic information of the patient was collected on a structured proforma including age, gender and weight, primary and admitting diagnosis. All neonates were closely observed for the early morbidities that we intend to study (Hypoglycemia, and Hyperbillirubinemia).

**Results:** 21 neonates were taken. 6 were late preterm that 2 neonates develop hypoglycemia and neonatal jaundice that required treatment. 15 term neonates out of those 1 develop hypoglycemia and neonatal jaundice that required treatment.

**Conclusion:** Results are awaited. **Key Words:** Late preterm, Term, Hypoglycemia, Hyperbillirubinemia

**Keywords:** Late Preterm, Term, Hypoglycemia

**11.28**  
OBSERVATIONAL STUDY ON  
POSTOPERATIVE UPPER AIRWAY  
COMPLICATIONS FOLLOWING THE USE OF  
SUPRAGLOTTIC AIRWAY DEVICE IN  
PATIENTS UNDERGOING ELECTIVE  
GYNAECOLOGICAL SURGERIES

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*University, Karachi*

**Introduction:** Supraglottic airway devices are now widely used for surgery requiring general anaesthesia. They provide a peri-laryngeal seal with a cuff and an alternative to tracheal intubation.

**Objective:** To observe upper airway complications following the use of supraglottic airway device in patients undergoing elective gynaecological surgeries under general anaesthesia.

**Materials and methods:** All Adult female patients presenting for elective gynaecological procedures were included in this study in which supraglottic airway device was used to maintain airway during general anaesthesia. After the completion of procedure, supraglottic device were removed with patient either deep or awake as per decision by primary anaesthesiologist. Post-operative upper airway complications like blood on device were noted if present and pharyngo-laryngeal morbidity (sore throat, dysphagia, dysphonia, and coughing) nausea and vomiting were noted at one hour and 24 hours.

**Results:** Total hundred adult female patients of ASA I-III and Mallampati I-III scheduled for minor gynaecological procedure were included in this study. LMA was used in 41 patients while in 59 patients I-gel was used. In 11 patients blood was seen on cuff of device after removal. Regarding post-operative complications, coughing was present in 17% patients immediately after device removal. Sore throat was present in 4% patients at 24 hours. Comparatively more sore throat was seen with LMA as compared to I-gel (14 and 2 respectively).

**Conclusion:** Both supraglottic device, LMA and I-gel can be used safely in patients undergoing elective gynaecological surgeries under general anaesthesia. Comparatively less post-operative complications were seen with I-gel as compared to LMA.

**Keywords:** LMA, I-gel, , post-operative complications, gynaecological surgery

**11.29**  
FREQUENCY AND EARLY COMPLICATIONS  
OF LATE PRETERM NEONATES AT  
SECONDARY CARE HOSPITALS OF AGA  
KHAN UNIVERSITY

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**Objective:** To determine the frequency of late preterm and to determine the frequency of early complications (within 72hours) in late preterm infants during their stay at the Aga Khan secondary care hospitals Karachi. Study Design: Case series study Place and Duration of Study: This study will be conducted at secondary care hospitals of the Aga Khan Hospital Karimabad and Garden within six months of duration.

**Methodology:** Newborns delivered during study period will be included in study to determine frequency of late preterm neonate. Demographic features i.e., age, gender, gestational age, birth weight will be recorded will be recorded. All late preterm will be observed for early complication within 72 hours of birth including signs of neonatal sepsis, Respiratory distress syndrome, Hypothermia (Temp. < 0.05 as significant).

**Results:** Data Collection in progress.

**Conclusion:** Results not available

**Keywords:** Late preterm, Early complication, prematurity

### 11.31 PROBLEMS OF THE PROBLEM BASED LEARNINGS

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A near perfect achievement of any teaching and learning modality, to the point that it becomes a successful teaching and learning methodology, is that the teaching trend should constantly draw the attention of the audience at the same time does contribute to their knowledge and clinical skills. Unfortunately, it is easier to graft newer teaching methodology than to improve on an older one. A new design of learning would almost always dear by the authors, who will caution over the consequences of that miniature component of the novel method, if it is neglected. It is not uncommon that a new teaching method or a learning tactic brings excitement to the teacher and curriculum re designers, even more euphoric however, is the idea that it can groom an older teaching and learning trend to a level that can be useful to community services and at the same time broadens the multifaceted thinking capability of the learner. In the well-known and passionately popular problem based learning (PBL) it was initially observed and later concluded to be a far superior way when compared with the older grand lectures and small and large group tutorials. Over a period of time, however the tutors and instructors felt that it gave them a lesser depth of involvement with the learners than the older methods of teaching. Sweller and others have published a series of studies over the past twenty years that is relevant to problem-based learning, but concerning cognitive load and what they describe as the guidance-fading effect (Sweller, 2006).

*Keywords:* PBL, Lectures, Tutorials

### 11.32 TO DETERMINE THE FREQUENCY OF MORBIDITIES IN THE LOW BIRTH WEIGHT NEONATES BORN AT AGA KHAN UNIVERSITY HOSPITAL AND ITS REFERRAL MATERNITY CENTERS IN KARACHI.

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*Background And Objective:* Worldwide approximately 20 million infant are born with weight less than 2500 grams (LBW). Of all LBW infants about 90% are born in developing countries. LBW neonates are prone to develop early morbidities like hypoglycemia, hypocalcaemia, hypothermia, hyperbilirubinemia, respiratory distress syndrome. In developing countries there is scarcity of accurate and complete population statistics and medical records. Thus, the development of strategies for improving access to effective care in developing countries must remain a top research and operational priority. Developing such strategies will depend on improved estimation of the frequencies of common early complications in low birth weight neonates that will determine the survival at the country level. Our study is a step forward in this direction. *Design And Setting:* Cross-sectional study conducted over 6 months at AKU and its Affiliated maternity centers *Methods:* Inclusion Criteria: All neonates of either gender and any gestational age admitted in neonatal intensive care unit, postnatal ward and neonatal units of AKUH and its affiliated secondary care hospitals; Kharadar and Karimabad with birth weight between 1500g to 2500 gm. Neonates who remain admitted in the ward for initial 48 hours of life. Neonates who developed complications and referred to other hospitals within 48 hours. *Exclusion Criteria:* New born with complex congenital anomalies (i.e., congenital heart diseases, tracheoesophageal fistula) syndromes (i.e., trisomy) will be excluded. Newborns with lethal congenital anomalies (anencephaly) will also be excluded. Neonates born outside and admitted from emergency room for any complications will be excluded. All neonates who fulfill the inclusion

criteria will be enrolled in the study after taking informed consent from parents. All neonates will be closely observed for the early morbidities till initial 48 hours or discharge or whichever comes first to document the complications, that we intend to study (RDS, Hypothermia, Hypoglycemia, and Hypocalcaemia). *Results:* Work In progress.

*Keywords:* Low Birth Weight, Preterm, Ealy morbidities

### 11.33

#### FIREARM AND BOMB BLAST INJURIES: AN EXPLORATION OF PATIENT CHARACTERISTICS USING PAKISTAN NATIONAL EMERGENCY DEPARTMENTS SURVEILLANCE (PAK-NEDS) DATA

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*Introduction:* Violence through firearms and bomb blasts is an important public health resulting in premature deaths and burdening healthcare systems. The objective of this study was to explore the characteristics of patients presenting to the emergency departments in Pakistan with injuries caused by firearms and bomb blasts. A comparison of both type of injuries based on patient demographics, injury pattern and outcomes was undertaken.

*Methods:* Active surveillance was conducted in seven major emergency departments of Pakistan from November 2010 – March 2011. For this analysis, we included all patients who presented to the Emergency Department following a firearm or bomb blast injury. We included only those firearm or bomb blast injuries which were recorded as an intentional injury.

*Results:* Approximately 3.17% (n=352) of all intentional injuries (n=11,104) were caused by both firearms (n=267, 75.9%) and bomb blasts (n=85, 24.1%) giving an overall incidence rate of 31.7 per 1000 patients for firearm and bomb blast related injuries presenting to the emergency department. Overall, there were more males than females in all

the age groups with the exception of >65 years age group which had more females than males (63.6% versus 36.4%). About half of the patients were discharged from the Emergency Department (n=163, 55.3%). More than a quarter of the patients were admitted to the hospital for further care (n=90, 30.5%). There were 30 (10.2%) deaths in the emergency department. *Conclusion:* Firearm and bomb blast injuries are common in Pakistan affecting civilian population and result in burdening the healthcare system.

*Keywords:* firearm, injury, bomb blast

### 11.34

#### NEGLIGENCE: AN ETHICAL AND LEGAL ISSUE

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*Purpose:* This study highlights a very common but a legal and an ethical issue of health care setting; Negligence.

*Method:* The case study of a young patient who suffers a lot just because of the error of a health care provider whose negligence may lead to patient's death. Proper assessment and proper study about the patient health and consequences of one treatment on the other provide proper treatment to the patient. We came across different kind of errors in our health care setting due to patient suffers. All these blunders make the patient to undergo different issues related to cost of hospitalization, stress, family stress and many other problems which we as a staff cannot imagine about.

*Conclusion:* It is our prime duty to consider the other factors of patient's health. We as a health care provider should properly assess the patient's clinical presentation and provide complete and holistic care to the patient. Patient seeks medical care to get better not to experience our blunders which we make mistakenly. Clinical relevance During our daily practice we as a health providers should try our best to overcome this issue of doing errors and mistakes through the logical interpretation of human

factor. Our little errors make the patients to suffer a lot and these small mistakes elevate their suffering.

*Keywords:* ethics, legal outcome, negligence

### 11.35 EMERGENCY CARE OF TRAUMATIC BRAIN INJURIES IN PAKISTAN: A MULTICENTER STUDY

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University, Karachi*

*Introduction:* This study assessed emergency care access and out-of-pocket treatment costs of traumatic brain injuries (TBI) in Pakistan.

*Methods:* Data on TBI cases (described as head injury, concussion or intracranial bleed), were extracted from a four-month surveillance study conducted in the emergency departments (ED) of seven large teaching hospitals. Emergency care access to physicians and allied healthcare staff, and imaging facilities were compared with respect to ED outcomes (discharged, admitted or dead). Out-of-pocket treatment costs (in United States Dollars [USD]) were compared for different types of care provided at ED.

*Results:* A total of 1,787 cases of TBI were analyzed. Three-quarters were males (79.3%), one in two (46.4%) was aged less than 25 years and a third (31.6%) arrived by ambulance. Nurses or paramedical staff saw almost all (95.2%) patients and physicians (residents and medical officers) saw half (54.7%). Computerized tomography (CT) scans were performed in two of five cases (39.5%). Of all, 25.7% (n=460) were admitted and 2.9% died (n=52). Emergency care factors significantly associated with being admitted or died were arriving by ambulance (adjusted odds ratio [aOR]=2.37, 95% Confidence Interval [95%CI]=1.78-3.16), seen by medical officer (aOR=2.11; 95%CI=1.49-2.99) and had CT scan (aOR=2.93; 95%CI=2.25-3.83). Out-of-pocket treatment costs at ED were significantly higher in those who came by ambulances (USD 20.37, Standard Deviation

[SD]=48.99) or who underwent CT scans (USD 16.11, SD=36.70) compared to overall average costs (USD 8.39, SD=23.75).

*Conclusion:* Severe TBI cases had relatively better access to prehospital care, physicians, and imaging facilities in EDs of Pakistan, however, there was still huge room for improvement.

*Keywords:* Emergency, traumatic, brain

### 11.36 THE PEDIATRIC DISEASE SPECTRUM IN EMERGENCY DEPARTMENTS ACROSS PAKISTAN: DATA FROM A PILOT SURVEILLANCE SYSTEM

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*Background:* There is an increasing number of urgently ill and injured children being seen in emergency departments (ED) of developing countries. The pediatric disease burden in EDs across Pakistan is generally unknown. Our main objective was to determine the spectrum of disease and injury among children seen in EDs in Pakistan through a nationwide ED-based surveillance system.

*Methods:* Through the Pakistan National Emergency Department Surveillance (Pak-NEDs), data were collected from November 2010 to March 2011 in seven major tertiary care centers representing all provinces of Pakistan. These included five public and two private hospitals, with a collective annual census of over one million ED encounters.

*Results:* Of 25,052 children registered in Pak-NEDs (10% of all patients seen): 61% were male, 13% under 5 years, while almost 65% were between 10 to < 16 years. The majority (90%) were seen in public hospital EDs. About half the patients were discharged from the EDs, 9% admitted to hospitals and only 1.3% died in the EDs. Injury (39%) was

the commonest presenting complaint, followed by fever / malaise (19%) and gastrointestinal symptoms (18%). Injury was more likely in males vs. females (43% vs. 33%;  $p < 0.001$ ), with a peak presentation in the 5-12 year age group (45%).

*Conclusions:* Pediatric patients constitute a smaller proportion among general ED users in Pakistan. Injury is the commonest presenting complaint for children seen in the ED. These data will help in resource allocation for cost effective pediatric ED service delivery systems. Prospective longer duration surveillance is needed in more representative pediatric EDs across Pakistan.

*Keywords:* pediatric, surveillance, injury

### 11.37 ONCOLOGY TREATMENT AND ITS EFFECTIVENESS

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*Background:* This paper highlights significant oncology drugs and discusses its effectiveness. Moreover, it will discuss about the selection process of oncology treatment with respect to disease condition. The paper will draw further attention on chemotherapeutic drugs used especially in Aga Khan University hospital.

*Method:* Research journals from 2010-2014 were chosen and considered to discover reliable and divergent analysis. Cancer, chemotherapy, oncology drugs, effects of drugs are the topics that were preferred to read. These topics will come across throughout this literature review.

*Findings:* It is found from the researches that chemotherapeutic medicines have been more effective if used with monoclonal antibody. Like, use of trastuzumab in metastatic breast cancer is fatal in treating the disease. Selection process of oncology drugs includes physicians preference based on their experiences, previous patient responses and affordability. In AKUH, Different types of chemotherapeutic regimens are used in

different cancers like, use of FOLFIRI in gastric/colon cancer.

*Conclusion and Recommendations:* Chemotherapeutic medicines can increase overall survival of patient but it would be highly recommended if supportive care adds in curative plan. This would improve patient's quality of life and acts as a strength to fight back the side effects of medicines and pain due to cancer.

*Keywords:* Cancer, Stress, Chemotherapy

### 11.38 BLOOD TRANSFUSION QUALITY IMPROVEMENT AUDIT IN AN INPATIENT SETTING OF A TERTIARY CARE UNIVERSITY HOSPITAL KARACHI, PAKISTAN

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*Malik, Zahraa Bhimji*  
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*Introduction:* Blood transfusion is a common and safe procedure in any hospital setting; however preventable errors do occur. Nurses being the front line care providers have an important role in ensuring safe administration of blood and blood products. Clinical audit is one of the key processes that seek to improve patient care and outcomes through systematic review.

*Objective:* To evaluate compliance with policy and examine nursing knowledge and practices while transfusing blood or blood products.

*Methodology:* Clinical audit was performed in 21 units of an inpatient setting from December 1, 2014 to December 31, 2014. An audit tool was used to get key performance indicators (KPIs) in all phases including preparatory, performance and conclusion phases involved in blood and blood product transfusion and was ticked as item was met, not met or not applicable

*Results:* The results were presented in number, percentage and graphs. Compliance in performing blood transfusion by Nursing Staff varied from maximum 95% to minimum 83%. Major non-compliance findings related to key performance indicators such as knowledge and practice on types

of blood transfusion reactions, checking blood or blood product for expiry before transfusion, and knowledge regarding post reaction interventions & nursing care.

*Conclusions:* There is a need to focus on identified key areas of improvement in order to ensure transfusion safety. The goal of this process was to create a culture of delivering a quality service to patients needed transfusion and initiate regular audits to assess administration of blood and blood products.

*Keywords:* Clinical Audit, Knowledge and practice, Transfusion safety

### 11.39

#### A RETROSPECTIVE REVIEW OF SCLERAL BUCKLE PROCEDURES PERFORMED AT A TERTIARY CARE CENTER IN KARACHI, PAKISTAN.

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*Objective:* To evaluate the anatomic and visual outcomes after scleral buckling for the repair of rhegmatogenous retinal detachment (RRD).

*Methods:* A retrospective case series of all scleral buckle procedures performed by a single surgeon from January 1999 till April 2012 at the Aga Khan University Hospital, Karachi, Pakistan. Patients' demographics (age, gender), symptoms and their duration, Pre-Op and Post-Op (1st day, 1 week, 1 month and 1 year) best corrected visual acuity (BCVA), intraocular pressures (IOP) and parameters related to RRD were recorded. Main outcome measure was success rate in terms of visual outcome and anatomic status of retina at one year follow-up.

*Results:* 75 eyes of 72 patients were included in the study. Mean age was 33.0 ( $\pm 17.2$ , range: 7- 73) years. The logMAR mean visual acuity (VA) was 0.9 pre-operatively, 0.6 at 1 month and 0.5 at 1 year. The mean improvement in VA of 0.4 one year after repair of RRD was statistically significant

( $P=0.018$ ). At baseline 36% ( $n=27$ ) of eyes had VA of 20/50 or better, while at 1 year after surgery 63.5% ( $n=47$ ) of eyes had VA of 20/50 or better. Retina had successfully attached after first attempt in 70 out of the 75 cases (93.3%). Status of macula (detached/attached) was not significant in predicting the success of reattachment. Macula was detached preoperatively in 52 cases (69.3%).

*Conclusion:* Scleral buckling for the repair of RRD was seen to result in a high anatomical success rate as well as significant improvement in visual outcomes.

*Keywords:* buckling, retinal detachment, surgery

### 11.40

#### HOW SYSTEMIC LUPUS ERYTHEMATOSUS LEADS TO MULTI ORGAN DYSFUNCTION?-A CASE STUDY

*Anoosha Basaria, Shyrose Sultan*  
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*Objective:* To explore the effects of SLE on different systems of the human body.

*Method:* A case was encountered and thoroughly studied in an intensive care unit of a tertiary care hospital in Pakistan, A 20 year old girl presented with respiratory arrest for which she was intubated to protect the airway. The girl initially came with the complaint of severe fatigue, joint pain, butterfly patches on nose and cheeks, severe hair loss without any known etiology, episodes of severe headaches, and shortness of breath. A series of diagnostic procedures were done including Chest x-ray, bone scans, Complete blood counts, antinuclear antibody testing, liver enzymes and kidney functions. Chest x-ray showed bilateral pleural effusion, bone scan showed arthritis possibly rheumatoid; Pancytopenia was visibly evident in complete blood count reports. BUN and creatinine were at its peak indicating acute kidney injury and liver enzymes were normal. In ICU, the mechanically ventilated patient was treated with cyclophosphamide and Hydroxychloroquine along with multiple transfusions and dialysis. During her length of stay at ICU she was planned to be extubated but her



condition became unstable within 24 hrs of extubation, so she had to go through the trauma of re-intubation. Gradually, her urine output decreased, liver enzymes were elevated, lungs were filled up with fluid, inotropic support was essential, and GCS did not improve. Ultimately, her code was reviewed as DNR-comfort because of multi organ dysfunction.

*Results:* The organs that are mostly deteriorated by the effects of SLE are bones, heart, kidneys, lungs, brain, skin that ultimately declines the functioning of multiple systems of the body leading towards poor prognosis.

*Conclusion/recommendations:* serious and immediate interventions should be carried out in order to increase the life expectancy of patients suffering with the disease as well as focus should also be driven towards their quality of life by decreasing the intensity of symptoms that cause severe pain and discomfort to patient as well as their families.

*Keywords:* SLE, multi organ dysfunction, auto immune

#### **11.41** TAPE-BALL RELATED EYE INJURIES

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*Aim:* To present a series of cases of ocular injuries due to tape-ball (cricket).

*Methods:* This retrospective study involved patients presenting with tape-ball related ocular trauma at the Ophthalmology Department of Aga Khan University Hospital from January 2014 to December 2014. *Results:* Of the 20 patients included in the study, right eye was involved in 14 patients with Blurring of vision being the most common symptom followed by ocular pain, redness and floaters. Severe visual loss (BCVA < 20/200) was seen in 15 patients. Retina was the most commonly involved ocular tissue affecting 15 patients also. None of the patients had been wearing

any type of protective eyewear at the time of trauma.

*Conclusions:* Severe injuries occurred in about 75% of patients, and surgery remained the mainstay of treatment in approximately the same number of patients. Each of these was a preventable injury. Our study calls for compulsory use of proper protective eyewear during tape-ball cricket.

*Keywords:* Eye trauma, Vision, sports

#### **11.42** IMPLEMENTING STRUCTURED HANDS-OFF COMMUNICATION AT A TERTIARY CARE UNIVERSITY

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*Introduction:* Hands-off /Handover communications is used to provide complete and accurate information about a patient's clinical status. The aim is to ensure continuous and coordinated delivery of care to all patients in a safe and consistent method.

*Objective:* To review hands off communication process in an inpatient setting at a Tertiary Care University Hospital, develop policy/guidelines, provide appropriate communication tool , implement standardized approach, and assess compliance.

*Methods:* An observation of patient hands off communication was done from Jan to May 1 2014 along with the assessment of communication tools used in different patient care setting of a 692 bedded hospital. Handover sheets were collected to identify baseline information; followed by recommendations. Evidence based communication tool SBAR (situation, background, assessment and recommendation) technique was standardized. Institutional policy was then initiated and uploaded on the intranet and rolled out across all units and specialties and quarterly audits were planned.

*Results:* Initial compliance was in quarter 3, 2014 was 85.16% as compared to the set target of target of 80%. In quarter 4, 88.6% compliance was

observed. It was identified that staff were practicing handover as per intuitional policy however use of SBAR technique and documentation of core clinical information needs to be strengthen.

*Outcome:* The implementation of the handover policy, standard communication technique into a previously unstructured and unsafe system has improved transfer of accountability among care providers and enhanced patient safety.

*Keywords:* Handsoff, Communications, compliance

### **11.43** DEVELOPING PARENTING CAPACITIES IN RESOURCE POOR COUNTRIES: A TRAINING MANUAL FOR EARLY CHILD DEVELOPMENT

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Bachani, Yasmeen Mehboob, Zia Sultana, Sultana  
Qamer, Ayesha Zahid Khan  
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*Background:* Early Child Development (ECD) workers are involved in educating parents and developing their nurturing skills for optimum child development, however there is a dearth of material in local languages that builds ECD workers capacity in providing education to parents. The ECD Trainer's manual was developed to guide and assist ECD workers and provide the required knowledge and necessary skills for imparting parenting education in disadvantaged communities.

*Method:* The manual is written for trainers who work for early child development and are preparing their staff to work with families in developing appropriate skills for care and holistic development of young children. Key phases of manual development included need assessment, literature review, conceptualization, modules development and designing, training of trainers, field testing and consolidation. Viewing the child in a right based ecological framework, theory driven research based approach was used to develop a series of modules organized around five basic ECD themes. A participatory workshop approach is adapted

throughout the manual that enables trainers to plan and conduct parent education workshops/ trainings on ECD as well as to contextualize and adapt the material according to their own cultural context.

*Results:* The ECD manual consists of five basic child development themes including basic concepts in ECD, pregnancy and child development, nutrition, play based learning and child health and safety that are covered under 21 modules . Two additional modules discuss how to conduct the introductory and wrap up sessions. Around 150 illustrations are used in the manual to convey ECD messages to the trainer and parents with indigenous play activities for children that enhance young children's physical, cognitive, language, social and emotional development in safe and stimulating environment.

*Conclusion:* The ECD manual is one of the first comprehensive parenting education publications in Urdu language for professionals working for ECD in Pakistan. The manual can be used by ECD, education and health care workers, in management and organization of parenting education sessions for holistic early child development.

*Keywords:* Parenting, Early Child Development, training manual

### **11.44** MANAGEMENT OF RADIOACTIVE SPILLS IN NUCLEAR MEDICINE: TEACHING AND ASSESSING WITH OSATS (OBJECTIVELY STRUCTURED ASSESSMENT OF TECHNICAL SKILLS)

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Routine work in nuclear medicine requires the careful elution of radioactivity and its subsequent, storage and handling. Though all effort is maintained to prevent any "spill" of this radioactivity, accidents are bound to happen. The response to this spill is a methodically worked out plan that is written and adopted as a "standard operating procedure" (SOP). This protocol is taught

to all involved in the area of working as a mock drill/apprenticeship model. No formal evaluation of the learning is in place except for the mock drills. The OSATS is a variation on the OSCE, or Objective Structured Clinical Examination which is a form of workplace based assessment. The OSATS is cited in the ACGME Evaluation Toolbox on the website as the most desirable evaluation tool for the Patient Care topics. It is the objective of this paper is to introduce the "OSATS" for the teaching, and assessment of the learning, of the protocol for the management of radioactive spill. As a review of the literature on the subject failed to reveal any such teaching protocol/material/document for this important technical skill, we hope that it may act as a landmark for the development of teaching and assessment of other technical skills also.

*Keywords:* Radioactive Spills, Learning and Assessment, OSATS (objectively structured assessment of technical skills)

#### **11.45** THE INFLUENCE OF INTRINSIC REWARD SYSTEM ON SATISFACTION LEVEL OF HEALTH CARE EMPLOYEES

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Private health care sectors have significant important and its trend is expanded day by day. Health care sector are purely provide the services to the society. My research focuses on impact of indirect rewards system on employee job satisfaction of private health care sectors. My study was conducted for private health care sectors especially in Karachi. Random sample technique applied and total 375 samples were collected from four different regions of Karachi which are Karachi East, west, North and South. 125 samples collated from permanent health care employees and 250 temporary health care workers. Among 375 questionnaires were distributed and 350 are get complete usable filled questionnaires for response

93% and SPSS 20v was applied to analyzed the records all through "independent sample T-test, Binary logistics, correlation, regression analysis". The result of study indicate that permanent employees of private health care sectors are more satisfied with indirect or non-financial reward system like promotion opportunity, job security, working environment, independence of task and importance of task. They were less satisfied with job recognition. Result also reveals the private health care sector employee much satisfied with promotion opportunity, job security, working environment, job recognition, independent and importance of task. Appreciations were not only monitor satisfaction level among other non-financial factors were involved in employee's job satisfaction. The participation in survey was for formality and confidentiality of responses was ensured and finding direction of intrinsic reward in term of promotion opportunity; job security, working environment, job recognition, independent and importance of task are important factors to boost up employee satisfaction level.

*Keywords:* job satisfaction, intrinsic reward, health care sector

#### **11.46** PATTERN OF EXTERNAL INJURIES SUSTAINED DURING BOMB BLAST ATTACKS IN KARACHI, PAKISTAN FROM 2000 TO 2007

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*Dow University of Health Sciences, Go-Fig Solutions and University of Texas Health Science Center*

*Objective:* Terrorism and bomb explosions are on the rise in Karachi, Pakistan. These explosions produce a wide variety of external injuries. We undertook this study to evaluate patterns of external injury produced during bomb blasts in Karachi, and compare injury profile resulting from explosions in open versus semi-confined blast environment.

**Method:** A retrospective, cross-sectional study was conducted to review injuries sustained during bomb blast attacks in Karachi from January 2000 to October 2007. Casualty medical records and medico legal certificates of the victims presented to three large public sector hospitals of Karachi were evaluated using self-design proforma.

**Results:** Data of 481 victims meet inclusion criteria and were incorporated for final analysis. Of these, 306 (63.6%) were injured in open spaces and 175 (36.4%) were injured in semi-confined spaces. Lacerations were commonly encountered as external injury 427 (47.7%) followed by penetrating wounds 137 (15.3%). Lower and upper extremities were commonly injured, 348 (38.6%) and 170 (19%) respectively. Open and semi-confined blast environments produced specific injury pattern and profile ( $p < 0.001$ ).

**Conclusions:** External injuries sustained during bomb blast attacks in Karachi, Pakistan, demonstrated specific injury pattern and profile. These findings are consistent with other studies

**Keywords:** Bomb blast attacks, injury pattern, open space

#### 11.47

##### COMPLIANCE OF SURGICAL HANDWASHING BEFORE SURGERY BY REMOTE VIDEO AUDITING

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**Background / Introduction:** Effective hand hygiene practices have long been recognized as the most important way to reduce transmission of pathogens in health care settings. Transmission of bacteria can be reduced significantly by proper hand washing prior to surgery by health care professionals. It has been recommended by World Health Organization on guidelines on Hand hygiene in health care that surgical hand scrubbing should be done for 2 to 5 minutes. It has been seen that the health care professionals do not practice effective hand

hygiene. The aim of this study is to ensure the compliance to at least two minute hand washing by health care professional before surgery by using remote video surveillance. **Objectives:** To evaluate the compliance of surgical hand scrubbing and to increase the compliance of surgical hand scrub time for at least 2 minutes.

**Methodology Study design:** Clinical audit at Aga Khan Hospital Kharadar from 1st April to Oct 31st 2014. A remote video auditing system consisting of remote third party human auditors, utilizing software program visualizing hand hygiene compliance, in health care workers in operating room with the use of video camera with motion sensor, would be installed in the scrub area wall visualizing the scrub sink only. A clock would be displayed for the health care professionals to aid in ensuring two minutes hand washing. All Surgeons Technicians and Surgical assistants would be included in the study. Video surveillance would be done to see the hand scrubbing practices. Hand hygiene will be measured during a 4-week period of remote video auditing without feedback and a 8-week period with feedback of data. Next 4 week period would be used to see compliance and sustainability. Audits will be done later on once in every month for 3 months for a period of one week without information, so as to check compliance. During audit participants will not be informed about video recording. Performance feedback in percentage value would be continuously displayed in OT on a sign board. An auditor shall be responsible in viewing the recordings and timing the hand washing procedure time and proper technique and recording the data **Results:** During The first 4 weeks surgeons, surgical assistants and technicians all had compliance to 2 minute hand scrub of 15%, 11% and 22% respectively. The next 4 weeks with feedback compliance increased to 51%, 60%, 77.5% in the above order of priority. The following 8 weeks compliance increased to 86.6% and 93% for surgeons, 93.5 and 93% for surgical assistants and for technicians 95% and 97%. Next three months weekly uninformed audit was done which showed compliance of more than 90% among surgeons assistants and technicians as well.

**Conclusion:** Video surveillance with feedback for hand washing is an effective tool for measuring hand hygiene

**Keywords:** video surveillance, hand washing, surgical

#### **11.48** ANAESTHESIA CHALLENGES IN A PATIENT WITH HURLER

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Mucopolysaccharidosis (MPS) is a group of inherited disorders of connective tissue metabolism. Although these disorders are rare but often these patients undergo multiple surgeries under anaesthesia to improve their quality of life. We are describing here the anaesthetic considerations and management of a 7 year old child with Hurler syndrome, who presented for an Adenotonsillectomy.

**Keywords:** Hurler, anaesthesia, management

#### **11.49** PREVALANCE OF CHILD PSYCHIATRIC ILLNESS IN A TERTIARY CARE CENTRE IN PAKISTAN

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**Background:** A nationwide study on the prevalence of child psychiatric illness is not known in Pakistan. The prevalence of child psychiatric disorders was estimated among the population aged 16 years and below based on gender, presenting complaints, family structure, school problems, comorbids, presence or absence of depression and severity of disease based on the type of treatment prescribed

**Objectives:** To present data from a general pediatric psychiatry clinic, including presenting symptoms, the relationship between symptoms and diagnoses and prevalence of child psychiatric illnesses in Pakistan. **Method:** This retrospective chart review was conducted at the Child Psychiatry clinic in Liaquat National Hospital and Medical College, Karachi, Pakistan. 274 child psychiatry cases, who were seen between 2012 and 2014, were reviewed among which 239 cases were analyzable. A maximum of two diagnoses was assigned to each case according to the standard guidelines in the DSM-IV.

**Findings:** Psychiatric disorders were more frequently seen in boys (61.50%) as compared to girls (38.49%). The five most common psychiatric disorders that were seen in children in Pakistan, according to their decreasing order of frequency are, Attention deficit and disruptive behavior disorders (18.82%), learning disorders (16.31%), adjustment disorders (12.97%), mood disorders (10.46%) and communication disorders (9.20%). The graph below shows the above mentioned common psychiatric disorders that were seen in an outpatient child psychiatry clinic in Liaquat National Hospital and Medical College, Karachi, Pakistan.

**Conclusions:** The result of our study shows that the pattern of child mental health in Pakistan is similar to the western countries with Attention deficit and disruptive behavior disorders being the most common. Early detection and treatment can help in reducing the health care burden as earlier interventions in psychiatric disorders often portend a better prognosis.

**Keywords:** child psychiatry, prevalence, ADHD

### 11.50 ANALYSIS OF OVERALL TREATMENT TIME RADIOTHERAPY AT AKUH

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Radiotherapy is an important modality in the management of patient with cancer. Good clinical practice dictates that radical courses of RT should not be interrupted. Unplanned interruption of radical RT resulting in prolongation of OTT detrimentally affect local control & cure rate for patient. Previously in our section there no compensation system for Unscheduled Interruption b/w fraction of treatment in week. After a deliberation and study management had decided to compensate the missed treatment on Saturday, further more if the patient treatment started other than Monday, then patient will be treated on Saturday in order to complete the treatment in intended time according to prescribe dose. An audit based study was design to determine compliance of overall treatment time. Charts of 50 patients were retrospectively reviewed from April to December 2014. The missing days are summarized in two ways: number and length of gaps (without weekends) in a course of treatment and compliance to planned OTT. The difference between actual realized OTT and the planned or prescribed OTT was calculated for every patient as a measure of compliance. Over all compliance is improved, about 60% patient treatment completed on intended time, previously is about 35%, further more treatment gaps reduced 3 to 5 days which may be due machine breakdown or patient didn't show up other then any medical reason which may cause more than 10 days gap. Previously we have observed an average of 7 to 10 days gap or more. Radiobiological Effectiveness improved without improvising the quality of treatment.

*Keywords:* Radiotherapy, Treatment Time, Treatment gap

### 11.51 LESSONS LEARNT IN BUILDING EDUCATION CAPACITY OF HUMAN HEALTH RESOURCES FOR IMPLEMENTING THE GENERAL NURSING DIPLOMA PROGRAMME IN FAIZABAD, AFGHANISTAN

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*Background:* Decades of war and continued political instability in Afghanistan have led to forced migration of nursing human resources. In addition, quality of formal training facility for health professionals has led to inadequate trained faculty.

*Objective:* Situational, tailored, and context specific intervention to build education capacity of faculty to improve quality of care of clients in the hospital and in the community through implementing General Nursing Diploma Programme

*Method:* Various strategies such as classroom teaching, discussion, power point presentations, workshops, exposure visits to international school of nursing, demonstration and re-demonstration in skills lab, mentorship, faculty practice, and role modeling.

*Results:* Development of a framework for building education capacity of human health resources in a war torn country like Afghanistan; taking into consideration geo-political situation, language barrier, lack of material, human and financial resources, partnerships, knowledge and strong commitment of implementers.

*Conclusion:* There is lack of detailed qualitative data describing the various strategies for a successful implementation of developing human health resources in war torn areas. Therefore further evidence is needed to create and evaluate the best possible interventions for building quality education capacity of nursing faculty to improve quality of care of clients. Key words: Afghanistan, nursing, framework for building human health resources, faculty development.

*Keywords:* Afghanistan, Nursing, Faculty development

## 11.52 TRAINING AND POLICY UNIT: NURSING EDUCATION CAPACITY BUILDING IN AFGHANISTAN

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University, Karachi*

*Introduction:* Decades of war and internal conflict had adversely affected healthcare system in Afghanistan that required its re-building, including the development of appropriate human resources. With support from international community, Ministry of Public Health (MoPH) made concerted efforts for the development of stewardship and effective governance. The Ghazanfar Institute of Health Sciences (GIHS), Kabul and its nine provincial satellites have mandate to train general nurses, midwives and allied health personnel in Afghanistan. Since 2002, Aga Khan University has been providing technical support to GIHS in nursing and midwifery education; in January 2012, established a Training and Policy Unit (TPU)

*Purpose:* The purpose of TPU is periodic revision of the standards, policies and curriculum; and development of nursing teachers to raise standard of nursing education in the country. Methods AKU developed a proposal with MoPH, GIHS, to establish TPU with support from French agency, AFD. Relevant staff was recruited, a building was constructed and processes were developed and implemented in consultation with stakeholders.

*Results:* The curriculum, standards and policies were revised, approved and disseminated at national level; 14 faculty members from GIHS and regional IHSs were trained as master trainers; monitoring and evaluation visits were conducted that revealed substantial progress in implementation of curriculum; subject specific modules and Learning Resource Packages are being development on the revised curriculum.

*Conclusion:* The TPU is an important addition to the nursing education system in Afghanistan; and a positive step towards sustainability of the capacity development.

*Keywords:* TPU, Nursing, Education

## 11.53 UNPLANNED OVERNIGHT PATIENTS IN PACU

*Mehwish Amin Nathani  
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*Objective:* To identify the factors that lead to overnight stay of patients in the post anesthesia care unit (PACU).

*Methodology:* PACU overnight patient's data was collected of one year from May, 2013 to April, 2014. We included those patients who came before 0300hr and stayed till 0700hrs in morning. Initially, data was collected from a tool which includes patient's identification, surgery, general condition, reasons for stay & decision maker. Further, reasons are divided into 4 categories i.e. waiting for SCU beds, major surgery, patient clinical condition & unspecified reasons. Moreover, data again sub classified into 3 groups of decision makers like primary team, anesthesia team & both.

*Results:* During one year period, we catered 294 overnight patients of different specialties. Among all, patients stayed due to SCU bed unavailability 82 (28%), major surgery 40 (14%), patient's clinical condition 64 (22%) & unspecified reasons 108 (36%). Additionally, total number of patients hold by primary team were 180 (85%), anesthesia team 9 (4%) and decision taken by both were 25 (11%). Overall analysis of data revealed that overnight patients were high 43 in month of June, 2013 whereas less 10 in November, 2013.

*Conclusion:* Patient came in PACU for immediate post operative care but due to influence of various factors; stayed overnight leading to disruption in routine performance of PACU & OR schedule. After analyzing results, audits have been done to evaluate effectiveness of our endeavors. The policy for overnight patients in PACU should be developed. Further, there is need to have strong communication & collaboration among PACU management and surgeons. In the broad horizon, patient overflow to the PACU is institutional challenges which can be managed successfully by multidisciplinary approach.

*Keywords:* Unplanned, Overnight, PACU

### 11.54

#### EVALUATING AND IMPROVING THE HANDS-OFF PROCESS AT ENDOSCOPY SUITE IN REGARDS OF PATIENT SAFETY IN A TERTIARY CARE HOSPITAL IN KARACHI, PAKISTAN

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*Purpose:* One of the most serious pieces of patient care is the handoff. This is the point of time when crucial evidence on the patient's care is transferred to the patient's new care provider. Significant outcomes from current and appropriate studies on patient safety and clinical handoffs are concise and studied. After concisely revising process management the purpose of this paper is to discuss how these disciplines can be combined to further improve patient safety in handoff. The Joint Commission has identified communication failures as the leading cause of sentinel events in the United States, and lists shift reports as a contributing factor. Henriksen, K., Battles, J. B., Keyes, M. A., Grady, M. L., Mistry, K. P., Jagers, J., ... & Meliones, J. N. (2008). Using Six Sigma® methodology to improve handoff communication in high-risk patients. After Analyzing root cause of specific Incidents related to unstable transferring of patient within the hospital it was identified that proper hands-off process was followed. *Method:* For the purpose of effective implementation of international patient safety goal (improve effective communication) SBAR tool was utilized which were: process mapping; brain storming and review of graphical presentation of indicators were done. The project methodology that was followed was JURANS CQI methodology for quality improvement and patient safety. Following was the key team involved in this project: Facilitator: Naveen Amin (AHN-Endoscopy Suite) Leader: Naveen Amin (AHN-Endoscopy Suite) Members: • Sumaira Sachwani(CNS medicine area) • Shehnaz Jussa(CNC-GI) • Sonaila Sarwar(RN- Endoscopy Suite) Ali Project Details: Organizational Continuous Quality Improvement – Plan-Do-Study-Act method was used. Analyzed the current practice, identified the learning needs, developed

the Hands-off tool and to. Determined the readiness to accept the change, implemented and established a plan for making an improvement, educate and enhance awareness among health care workers as per patient safety guidelines. A team of nursing management were involved and aimed at effective and efficient implementation of Hands-off process for patient safety. An action plan was developed in which initial in-service were conducted with end – user.

*Result:* Health care workers integrated patient safety knowledge related to risk of fall, performed pre-sedation assessment, ensured medical equipment in working condition. *Conclusion:* With the help of multidisciplinary approach, all the recommended strategies were finalized to ensure the patient safety at AKUH in Endoscopy Unit. From Oct, 2014 Hands-off process was implemented in Endoscopy Suite. As a result there was zero incidents related to unstable shifting of patient in endoscopy suite.

*Conclusion:* Implementation of the handoff program was associated with cutbacks in unsafe practices in patient safety and in avoidable adverse events and with improvements in communication, without a negative effect on workflow. *References:* Henriksen, K., Battles, J. B., Keyes, M. A., Grady, M. L., Mistry, K. P., Jagers, J., ... & Meliones, J. N. (2008).

*Keywords:* Ipsg(Goal2), Handsoff Process, Incident

### 11.55

#### GREEN URINE, UNUSUAL PRESENTATION OF A COMMON SYMPTOM.

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

Green Urine? Unusual presentation of a common Symptom. Human urine is usually straw colored or pale yellow, unless there is an underlying disease or drug that changes its color. Urinary discoloration is quite common with certain drugs, like for very famous rifampicin (anti TB Drug), causing reddish discoloration of urine. We present here a case of a



60 Year old gentleman, diabetic, who presented to the department of Emergency Medicine with complaints of sudden onset of loose stools, vomiting and drowsiness, on arrival was hypotensive so was resuscitated with IV hydration, and was catheterized to monitor output. On catheterization the immediate urine output about 500ml came out to be dark green in color. Soon after catheterization and hydration his conscious level improved, with resolution of his vomiting and loose stools. Urinetox was sent immediately showing striking high amount of benzodiazepines. The patient on inquiring revealed no ingestion of drugs, neither any pertinent drug history. Urinary spectrometry planned, but was refused by the patient. The rationale behind the report is that even common symptoms of vomiting and diarrhea can have a hidden background of unknown cause that should not be ignored. In our case we figured out that benzos were positive, but other confirmatory tests to identify the cause along with proper history couldn't be extracted.

*Keywords:* green urine, urine toxicology, hypotension

### **11.56** IMPROVE DISCHARGE TIME (ASA LEVEL) AND DECREASE THE BACKLOG IN PACU

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Nursing Services, Aga Khan University, Karachi*

*Rationale:* Analyze the number of patients stays in PACU beyond their defined time and to decrease the unnecessary stay of post operative patients in PACU without apparent compromise of patient care and safety.

*Methodology:* Tool was formulated to identify the number of patient stayed in PACU beyond their classified time. Tool included four classifications that are: ASA I, II, III, & IV Further; subgroup each classification into three parts; before time, within time and after time. But, we didn't capture true picture. In 2014, tool has been modified. Two

classifications have been made that is ASA I, II and III, IV with two sub category of each classification that is within time and beyond time. Analysis of data collection of first quarter January to June 2014 has been done by calculating the number of patient stays beyond their described ASA class timings.

*Result:* Analysis: it came to know that May to December 2013, 32% to 48% of total patient were stayed in PACU beyond their classified time. After modification and included the tool as clinical indicator AKUH bench mark

*Keywords:* improve, delays, time

### **11.58** DELAYED PRESENTATION OF FORGOTTEN INTRATHORACIC THYROID GOITRE AFTER 25 YEARS OF THYROIDECTOMY

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Forgotten thyroid is defined as retrosternal portion of thyroid gland which is connected to cervical portion of thyroid with or without a thin fibrous band or vascular structure and was forgotten during total thyroidectomy. 59 year old lady with no known co-morbid presented to our clinic with shortness of breath, mild stridor and dysphagia. She had her thyroidectomy for benign multinodular goiter 25-years back. Chest Xray showed wide mediastinum. CT Scan Chest with intravenous contrast in showed large superior mediastinal mass compressing the lower trachea by more than 50%. . CT guided biopsy showed that this was benign. The mass was completely excised via median sternotomy. There were no post-operative complications.

*Keywords:* goitre, Thoracic, mediastinum

**11.59**  
CARCINOID TUMOR OF THE LUNG  
MIMICKING AS PNEUMONIA IN A YOUNG  
FEMALE\_ SUCCESSFUL TREATMENT WITH  
PNEUMONECTOMY

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*Karachi*

23 year old woman presented with progressively increasing cough and fever and right upper and lower lobe infiltrate for two years. She was treated with empirical antituberculous treatment for six months with no resolution of symptoms. Bronchoscopy was then performed which showed a large mass arising from the right main stem bronchus and with near total occlusion of the bronchus with protrusion into the trachea. The mass was biopsied and it was suggestive of carcinoid tumor. Pneumonectomy was performed successfully and post operative course was unremarkable.

*Keywords:* carcinoid, Thoracic, pneumonectomy

**11.60**  
RUPTURED LIVER ABSCESSSES INTO THE  
PLEURAL CAVITY\_ SUCCESSFUL  
TREATMENT WITH VATS

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We present case series of 7 patients with ruptured liver abscesses into the pleural cavity who were all successfully treated with VATS. All these patients presented with abdominal pain, and right sided chest pain. Two had amebic liver abscesses and five were pyogenic liver abscesses. VATS was performed in all and one special chest tube was placed in all through the diaphragm into the liver abscesses. All patients had an unremarkable post-operative recovery.

*Keywords:* liver, Thoracic, VATS

**11.61**  
SUCCESSFUL AORTIC ROOT REPLACEMENT  
FOR GIANT 11 CM ASCENDING AORTIC  
ANEURYSM IN A 24 YEAR OLD WOMAN

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*Karachi*

24 year old woman, mother of six children presented with shortness of breath and progressively increasing orthopnea for two months. On evaluation she was found to have a 11 cm giant ascending aortic aneurysm with compression of SVC and distal trachea. She had a successful treatment with aortic root replacement and Bentall procedure. This was an unusual presentation of such a large aneurysm with no previous history of any illnesses.

*Keywords:* aortic, bentall, aneurysm

**11.62**  
ROLE OF VATS IN MULTILOCULATED  
EMPYEMA\_ CASE SERIES

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

We present a case series of 448 patients with multiloculated empyema in patients with age range of 3 months till 87 years. All these patients were treated with VATS decortication. 24 patients had conversion to open thoracotomy due to poor visualization or inability of the lung to expand completely. There was no mortality in patients who underwent VATS decortication. Average in hospital stay was 4 days. VATS decortication remains as the best approach for decortication in parapneumonic effusions.

*Keywords:* Empyema, VATS, Decortication

**11.63**  
SUCCESSFUL RESECTION OF GIANT  
THYMOMA WITH RED CELL APLASIA

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*MD*  
*Department of Surgery, Aga Khan University,*  
*Karachi*

35 year old man presented with palpitations and severe anemia. On evaluation he was found to have a 10 by 9 cm mass in the superior mediastinum. CT guided biopsy showed it to be a large thymoma. Surgical resection was performed via median sternotomy leading to complete recovery and resolution of anemia.

*Keywords:* thymoma, aplasia, mediastinum

**11.64**  
PLACEMENT OF LV LEADS VIA VATS FOR  
CARDIAC RESYNCHRONIZATION THERAPY

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*MD*  
*Department of Surgery, Aga Khan University,*  
*Karachi*

We present a case series of seven patients with severe end stage heart failure and ischemic cardiomyopathy who needed cardiac resynchronization therapy. All these patients had RA and RV lead placement in the cardiac catheterization lab and LV lead was placed under deep sedation via VATS or VATS assisted mini thoracotomy in the posterolateral portion of the myocardium in circumflex territory. Such placement of LV leads via VATS is reported for the first time in Pakistan.

*Keywords:* LV, cardiac, resynchronization

**11.65**  
SUCCESSFUL AORTIC AND MITRAL VALVE  
REPLACEMENT IN A 24 WEEK PREGNANT  
WOMAN

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*MD*  
*Department of Surgery, Aga Khan University,*  
*Karachi*

30 year old woman in her 24th week of pregnancy presented with progressively increasing shortness of breath and orthopnea. On echo she was found to have a severe aortic regurgitation and mitral stenosis and severe pulmonary hypertension. Successful double valve replacement was performed with normal postoperative recovery. The fetus was monitored throughout the case and remained normal. This is the first such case of double valve replacement in a pregnant woman in this part of the world.

*Keywords:* LV, cardiac, pregnancy

**11.66**  
REVIEW OF BLOOD CULTURE POSITIVE  
NEONATAL SEPTICEMIA IN A TERTIARY  
HOSPITAL:

*Syeda Ra'ana Hussain*

*Introduction:* Neonatal sepsis is one of the leading causes of neonatal morbidity and mortality worldwide. In Kenya, the neonatal mortality rate is 49/1000 live births which needs to be reduced by two thirds to achieve MDG 4. Diagnosis of neonatal sepsis is usually made clinically with non-specific signs and symptoms. Blood cultures have remained the gold standard for laboratory confirmatory diagnosis. The spectrum of causative organisms varies not only regionally but with time and advances in prevention methods. Appropriate identification of the continuously evolving species profiling is necessary for effective empirical antimicrobial therapy.

*Method:* This was a retrospective study from January 2010 to December 2013 looking for

neonatal sepsis in patients admitted to the NICU and NHDU. Data was analysed from 86 blood culture positive isolates.

*Results:* From the 1450 admissions to the critical care units, 458 patients had suspected sepsis. 18.8% (n=86) of these had positive blood cultures. 46.5% also had a high CRP. Gram positive organisms were the main cause of sepsis; Staphylococcus epidermidis being the most prevalent (37.2%) which were largely resistant to ampicillin and cefuroxime. It was also the most common organism isolated in mortality cases (associated with 27% of deaths), of which there were 23 (26.7%). Candidal infections (n=3) were isolated in late onset sepsis.

*Conclusion:* In our setting, Staphylococcus epidermidis was the major cause of bloodstream infections.

### **11.67** COMMUNITY MIDWIVES EXPERIENCES RESULTING FROM BUSINESS SKILLS TRAINING IN SINDH AND PUNJAB PROVINCES OF PAKISTAN

*Shahnaz Shahid Ali<sup>1</sup>, Sadia Abbas<sup>1</sup>, Rafat Jan<sup>1</sup>,  
Rozina Sewani<sup>2</sup>, Arusa Lakhani<sup>1</sup>, Marina Baig<sup>1</sup>,  
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*Background:* The community midwives (CMWs) are trained and deployed in their respective communities to set their business. But it has been noted that, most of the CMWs were still struggling to initiate their business and very few were running their business, but were not able to maintain their finances to sustain their business. Hence, the need to provide Business Skills Training (BST) was identified.

*Purpose:* The purpose of this study is to explore the experiences of CMWs about the BST in Sindh and Punjab provinces of Pakistan.

*Methods:* This study used the qualitative descriptive exploratory research design. Ethical approval was obtained from the National Bioethics Committee, Pakistan. The study participants included 14 trained

and deployed CMWs from 14 rural districts of Sindh and Punjab in Pakistan. A three days BST was provided to them. Then these participants were followed-up and after 2 months in-depth interviews were conducted to explore their experiences about applying BST concepts into practice.

*Results:* Utilization of business skills is the main theme that emerged through data analysis that is supported by categories including marketing, budgeting, networking and sustainability.

*Conclusion:* CMWs found BST very useful and this helped them to be successful entrepreneurs.

*Keywords:* Community midwives, midwifery, business skills, entrepreneur, sustainability of services

### **11.68** THE PREVAILING NURSING CULTURE IN PRIVATE HOSPITALS IN KENYA AND ITS ROLE IN REGISTERED NURSING TURNOVER

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University, Kenya*

*Aim of the study:* Registered nurse (RN) turnover is a global phenomenon affecting both developed and developing nations over the last 10 years (Kelly and Ahern 2008). A plethora of literature exists on causes of registered nurse turnover in developed countries. This compares to a dearth of literature on Africa countries and specifically Kenya. Therefore, the purpose of this study was to explore the organizational culture prevalent in private hospitals in Kenya, in order to explore and describe factors that are hitherto unknown, and if addressed have the potential to both enhance the work environment of nurses and the quality of nursing care and patient care.

*Methods:* A phenomenological approach was used to explore the phenomena. The study setting was Nairobi and it involved nurses who had resigned from any of the private hospitals in Nairobi. The study was approved by the Kenyan National Commission of Science, Technology and Innovation. A sample of eight nurses was selected

using snowball sampling technique. Data was collected through individual interviews and field notes, and analyzed using N-Vivo.

*Results:* The findings indicated that the culture of private hospitals in Kenya is characterized by negative organizational and environmental factors which are: restricted working practices, limited opportunity for decision making and professional development, tendency towards autocratic leadership, bullying and lack of professional support. The key factor influencing these cultural aspects is nursing leadership.

*Conclusions:* Nursing culture in private hospitals in Nairobi is characterized by negative sub-cultures, which have been found to affect and influence negatively working conditions and standards of patient care (Flynn and McKeown 2009 and Siewert et al 2011). Indeed, high RN turnover is costly to the institution and negatively impacts on nursing care (Rondeau et al 2009, Sellgren et al 2008).

### **11.69** PROBING VARIATIONS AND COMPLEXITY OF GENOME BY PRELIMINARY APPROACHES IN MOLECULAR GENETIC STUDIES

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Structural design of genetics studies have progressed over the last decade into the most powerful tools for probing the complex human diseases. The emergence of new pharmacological therapies is dependent on understanding the underpinning of biological genetic effects. There are many different approaches for the studies to identify genetic risk factors of the complex diseases.

We hypothesize that linkage and association studies has the best applications and strategic reputes that are suitable for providing preliminary genetic information

We searched the literature for design and planning of preliminary genetic studies done around the world and reviewed their potential. PubMed was

used mostly searching for articles related to the topic. Articles which seemed relevant were considered and looked up for statistics

The concept of genetic complexity for diseases is based on reversible amendments and irreversible complete alterations of DNA bases. These alterations may reside either in monogenic or polygenic form on a genetic landscape. Also, the Human Genome Project and have led to appropriate tools such as Hapmap for designing of the initial experiments to investigate variations on a sub chromosomal scale. Advances in genotyping GWAS and NGS provide more sensitive tools for in depth study. Conclusively, the most appropriate methods to study are linkage and association analyses through appropriate tools for subsequent Meta analyses and decision making.

Discipline: Others

*Key words:* Genome complexity, variations,  
Preliminary approaches Genetic studies

### **11.70** A RARE CAUSE OF DIFFUSE PARENCHYMAL LUNG DISEASE

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*Introduction:* Pulmonary alveolar proteinosis (PAP) is a rare diffuse parenchymal lung disease characterized by the accumulation of amorphous, periodic acid-Schiff (PAS)-positive lipoproteinaceous material in the distal air spaces with preservation of lung architecture. Disease estimates indicate an incidence of one in two million people with male predominance (male:female ratio 3:1) and a peak onset is seen in the third or fourth decade of life. We report the first case of PAP from Pakistan.

*Case:* A 19-year old South Asian male presented with a one and half-year history of progressive shortness of breath on exertion and 9 kg weight loss. He also reported intermittent hemoptysis for past 3 months. He was treated as a smear negative

TB for 9 months without any improvement in symptoms. Physical examination revealed fine inspiratory crackles on chest auscultation. CBC was normal. Chest x-ray showed bilateral alveolar infiltrates which were predominantly central. The high-resolution CT scan chest demonstrated characteristic areas of patchy opacification with interlobular septal thickening and intralobular reticular thickening identified as the crazy-paving pattern. He had two non-conclusive bronchoscopies in the past. The transbronchial biopsy on third bronchoscopy showed focal histiocytes highlighted with CD-68 immunostain. Open-lung biopsy showed variable sized alveoli containing amorphous eosinophilic material, some alveoli showed foamy histiocytes, hemorrhage and cholesterol clefts. A diagnosis of alveolar proteinosis was made. Autoimmune work up and HIV was ordered for further analysis. He is planned to receive GM-CSF therapy after exclusion of secondary PAP.

**Conclusion:** Pulmonary alveolar proteinosis is a rare syndrome. Primary PAP is an autoimmune disease, which produces neutralising immunoglobulin G (IgG) antibodies against GM-CSF. Whole-lung lavage remains the standard of care for primary PAP, although some patients may respond to subcutaneous GM-CSF. The diagnosis of PAP requires a high index of suspicion.

**Keywords:** Pulmonary alveolar proteinosis, whole lung lavage, GM-CSF

### 11.71

#### A RARE CAUSE OF REFRACTORY WHEEZE

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**Introduction:** Primary tracheal tumors have a low incidence. These tumors usually present as 'pseudoasthma'. We report a case of a young female with adenoid cystic carcinoma who presented with refractory wheeze.

**Case description:** A 34-year old female presented to the emergency room with one day history of shortness of breath, fever and two episodes of

unresponsiveness. The symptoms were associated with twitching of facial muscles, jerking of the limbs, up rolling of eyes followed by unconsciousness. She also had fecal and urine incontinence during this episode. The patient was treated as asthma and probable seizures due to history of similar episodes for the last 2 months. She responded initially, but later dropped her consciousness and was intubated secondary to hypercarbic respiratory failure. She was extubated the next day but developed respiratory acidosis within 2 hours of extubation requiring re-intubation. CT scan of the neck and chest revealed a soft tissue mass arising from the trachea causing significant narrowing of the tracheal lumen, most likely representing a tracheal neoplasm. The biopsy of the mass revealed an infiltrating carcinoma with morphological features of adenoid cystic carcinoma.

**Conclusion:** Adenoid cystic carcinoma is a rare tumor. The tumor closely mimics asthma due to the impinging of tumor on surrounding structures. If a patient with wheeze does not respond to appropriate asthma therapy it is imperative to consider upper airway obstruction.

**Keywords:** Adenoid cystic carcinoma, pseudoasthma, epilepsy

### 11.72

#### IDIOPATHIC PULMONARY HEMOSIDEROSIS IN AN 8 YEAR OLD BOY

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**Introduction:** Idiopathic pulmonary hemosiderosis (IPH) is a rare cause of alveolar hemorrhage of unknown etiology in children, leading to chronic infiltrative pulmonary disease, rare condition manifested by recurrent pulmonary hemorrhage of unknown cause, diffuse radiologic abnormalities, cough, hemoptysis and anemia. Etiology of IPH is unknown, however the response to immunosuppressive therapy suggests that immune processes may be involved. Diagnosis is made by the presence of hemosiderin laden macrophages in

bronchoalveolar lavage or by open lung biopsy. Systemic steroids are the mainstay of treatment.

*Case:* Here we present case of an 8 year old boy with history of high grade fever, cough and shortness of breath for the last one week. He had history of easy fatigability for the last one year with history of multiple transfusion during this year. This time patient got intubated in ER secondary to respiratory failure. CT scan showed diffuse ground glass appearance bilaterally, was treated with high dose iv steroids. Patient responded clinically well and got extubated. Later open lung biopsy was done and diagnosis of pulmonary hemosiderosis was established.

*Conclusion:* It is to emphasize that IPH should be considered in young patients presenting with diffuse alveolar hemorrhage and anemia.

*Keywords:* Alveolar hemorrhage, Pulmonary hemosiderosis, hemosiderin laden macrophages, bronchoalveolar lavage

### 11.73 FREQUENCY OF MULTIDRUG RESISTANT PATHOGENS IN HEALTHCARE ASSOCIATED PNEUMONIA

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*Introduction:* Pneumonia has traditionally been classified as either community or hospital acquired based on the patient's location when the infection was acquired. The 2005 Infectious Diseases Society of America/American Thoracic Society (IDSA/ATS) guidelines created a third classification of pneumonia, healthcare associated pneumonia (HCAP). This concept has been controversial as several subsequent studies have indicated a low frequency of multidrug resistant pathogens in patients admitted with HCAP. In Pakistan, there is not enough data regarding the etiological organisms involved in healthcare associated pneumonia.

*Objective:* To determine the frequency of multi drug resistant pathogens in patients admitted with healthcare associated pneumonia in a tertiary care hospital.

*Methods:* It was a cross sectional study completed over a six month period. 155 patients aged  $\geq 16$  years admitted with healthcare associated pneumonia at the Aga Khan University Hospital and positive sputum bacterial cultures during the hospital stay were included in the study.

*Results:* A total of 155 patients with healthcare associated pneumonia with sputum, lower tracheal aspirates or BAL fluid cultures positive for organisms were recruited. Ninety seven patients (62.6%) were males while 58 (37.4%) were females. The mean age was  $61.2 \pm 17.2$  years. Out of 155, 119 patients had cultures positive for multidrug resistant pathogens. Of them, 61 patients (39.4%) were infected with *Pseudomonas aeruginosa*, 27 patients (17.4%) were infected with *Klebsiella pneumoniae*, 17 patients (11%) were infected with *Escherichia coli* and 14 patients (9%) were infected with Methicillin resistant *Staphylococcus aureus* (MRSA). Out of total 97 male patients, 72 (74.2%) were infected with multidrug resistant pathogens; while out of total 58 female patients, 47 (81.03%) were infected with multidrug resistant pathogens. 45 patients were present in age-group less than 50 years; of them, 38 (84.44%) were infected with multidrug resistant pathogens. 38 patients were present in age-group 50-65 years; of them 28 (73.68%) were infected with multidrug resistant pathogens. 72 patients were present in age-group more than 65 years; of them 53 (73.6%) were infected with multidrug resistant pathogens.

*Conclusions:* A significant number of patients admitted with healthcare associated pneumonia were infected with multidrug resistant pathogens. This study supports the current concept of healthcare associated pneumonia as a risk factor for multidrug resistant pathogens in our setting as well.

*Keywords:* Healthcare associated pneumonia, Multi drug resistant pathogens.

### 11.74 ADENOID CYSTIC CARCINOMA AS A TRACHEAL MASS

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*Introduction:* Adenoid cystic carcinoma is considered to be a low grade slow growing tumor which occurs in relation to the airways, lacrimal glands and breast. We report a case of a female patient with adenoid cystic carcinoma of peripheral lung.

*Case:* 34 year old female patient diagnosed treated as asthma and epilepsy for the last two years, came to emergency with one day history of fever, shortness of breath and uprolling of eye and unconsciousness. It was associated with fecal and urinary incontinence. Had history of similar events on and off for the last 2 months. She was already on multiple antiepileptics. Patient was hemodynamically stable, had hypercarbic respiratory failure and was managed in the lines of asthma exacerbation. Patient responded initially but later dropped her consciousness and got intubated secondary to worsening hypercarbic respiratory failure. Remained intubated for a day and antiepileptics were optimized than extubated. Patient developed respiratory acidosis within 2 hours of extubation so was re-intubated. CT chest done which showed infiltrating soft tissue mass lesion in the lower part of trachea causing tracheal narrowing. Posterior thoracotomy done which showed nonoperable mass adherent to trachea with impingement. Tracheostomy was done. Histopathology revealed Infiltrating carcinoma with morphological features favouring Adenoid cystic carcinoma.

*Conclusion:* ACC is a rare form of slow growing tumor arising from the bronchial glands. It accounts for around 0.04-0.2% of total lung cases. Tumor has tendency for perineural extension. It usually arise in the central airways so peripheral location has rarely been reported. Its cause is unknown. Surgery is the mainstay of treatment but some tumors may be inoperable. External beam radiation therapy could be used as an adjuvant therapy. Chemotherapy is not

generally used as these tumors appear to be less chemo responsive.

*Keywords:* adenoid cystic carcinoma, inoperable, epilepsy

### 11.75 AS RARE AS IT GETS- CASE REPORT OF A PATIENT WITH WEIRD LOOKING SKIN LESIONS

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*Introduction:* Mycosis fungoides is a subtype of cutaneous T cell lymphoma with an incidence of approximately six cases per million per year in Europe and the United States, accounting for about 4 percent of all cases of non-Hodgkin lymphoma. It is a mature T cell non-Hodgkin lymphoma with presentation in the skin but with potential involvement of the nodes, blood and viscera. It is characterized by heterogeneous cutaneous manifestations including patches, plaques, tumors, generalized erythroderma, alopecia or rarely papules. The peak age at presentation is 55 to 60 years, with a 2:1 male:female ratio. MF is a disease of older patients, it can be seen in patients under the age of 35 years. MF is extremely sensitive to radiation therapy and ionizing radiation in the form of x-rays is one of the most effective treatments for localized MF.

*Case Report:* 39 year old lady presented with complaints of protruded wood like lesions on various parts of her body along with patchy red colored areas for 3 months with pussy discharge, on examination the patient had patchy erythroderma with five lesions which were thick, crusted, raised with well demarcated borders with surrounding erythema, the lesions bled on palpation with pussy discharge. Biopsy of the lesion showed Mycosis Fungoides (CD 3 +ve, Ki67 approx 70%). Currently she is being planned for Curative radiotherapy after ruling out Sézary syndrome.



**Conclusion:** Very few cases of mycosis fungoides have been reported from our region with very little knowledge regarding its incidence, prevalence and disease behavior. Mostly the disease is misdiagnosed, mismanaged and treatment delays result in worsening prognosis. Thus knowledge regarding this disease is needed.

**Keywords:** Mycosis Fungoides, Cutaneous T cell lymphoma.

### **11.76** PULMONARY ARTERIO VASCULAR MALFORMATION; A RARE CAUSE OF DYSPNEA IN YOUNG PEOPLE

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**Introduction:** Pulmonary arteriovenous malformations (PAVM) are anomalous connections between arteries and veins in the lungs. Common clinical presentations include cyanosis, congestive heart failure, dyspnea and neurological manifestations. Here we present a case of a 26 year old who presented with PAVM that was treated successively with Angio-embolization.

**Case:** A 26 year old male presented to the Emergency Department of the Aga Khan Hospital with complaints of dyspnea on mild exertion along with history of palpitations lasting for 10-15 minutes with no identifiable precipitating factors. On examination oxygen saturation was 85 % on sitting and 88 % while lying down, on room air. Chest and precordium examination was unremarkable. Complete blood count showed polycythemia. Chest X-ray showed a small well defined nodular opacity in right anterior 4th intercostal space, in the posteroanterior view. Arterial-blood gases revealed hypoxia with high A-a gradient. Echocardiography was normal. A CT scan of the chest was done. To our surprise, the scan revealed multiple AVM'S in the lower lobes of the lungs bilaterally. Digital subtraction angiogram was performed which showed one major and one minor

fistulas on right and two major and one minor fistulas on the left. All three major fistulas were embolized with platinum detachable coils and were successfully occluded. A follow up in the clinic showed marked improvement in his symptoms. He was maintaining oxygen saturation at 96 % on room air.

**Conclusion:** Pulmonary AVM'S are rare disorder. The combination of disproportionate hypoxia, polycythemia and chest x ray finding of nodular opacity are important indicators of PAVM'S.

**Keywords:** Dyspnea, Palpitation, Arteriovenous malformation, Angioembolisation.

### **11.77** METASTATIC PAPILLARY ADENOCARCINOMA OF UNKNOWN ORIGIN- AN UNUSUAL PRESENTATION

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**Introduction:** Carcinoma of unknown primary (CUP) origin accounts for 4-6% of all malignancies. Adenocarcinoma accounts for approximately 70% of cases. Many patients have widespread metastases and poor performance status at the time of diagnosis. The outlook for most of these patients is poor, with median survival of 4 to 6 months. Certain histologic features are typically associated with a particular tumor type such as "papillary features" with ovarian and thyroid cancer. However, even these are not specific enough to be used as definitive evidence of the primary site just like the case presented below.

**Case:** 63 year old female, known hypertensive, presented with headache for 2 months with hearing loss and generalized weakness, there was no weight loss or fever. She got admitted for workup for headache, on admission she was vitally stable, no focal neurological deficits, with only cervical lymphadenopathy on examination. Neurology advised MRI Brain which didnot show any meningitis or space occupying lesion. CSF showed increased protein while microbiology came out to

be negative, cytology was positive for metastasis. FNAB of cervical lymphadenopathy was done, showed metastatic papillary adenocarcinoma. For workup of primary CT Chest, abdomen and pelvis was done which showed a spiculated enhancing mass lesion at left lung base with mediastinal, hilar, bilateral axillary and retroperitoneal lymphadenopathy. A nodule in left adrenal gland and bony metastasis. The case was discussed in the tumor board meeting and it was decided to treat the patient as adenocarcinoma of unknown primary.

**Conclusion:** The clinical presentation of patients with adenocarcinoma is determined by the sites of tumor involvement. Studies should focus primarily on determining the extent of metastatic disease and should incorporate the information derived from specialized pathologic studies.

**Keywords:** Papillary adenocarcinoma, unknown primary, metastatic.

### 11.78 CHOLESTROL CLEFTS IN HYPERSENSITIVITY PNEUMONITIS

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**Introduction:** Hypersensitivity pneumonitis (HP) is a pulmonary disease usually presenting with symptoms of shortness of breath and cough that results from inhalation of an antigen to which the subject has been previously sensitized. Exact immunological mechanism of HP is still not known despite extensive studies.

**Case Report:** 25 year old male, farmer by occupation resident of interior Sindh visited pulmonary clinic with 8-10 weeks history of high grade fever (upto 103F) with chills and rigors. Fever was associated with productive cough. no history of hemoptysis, TB or TB contact. Took multiple antibiotics. Physical examination of the chest revealed normal vesicular breath sounds. HRCT done which showed multiple areas of subpleural, honeycombing seen in both lungs, few subpleural subtle nodules in both upper lobes. Bronchoscopy

showed normal airways with no endobronchial lesion. BAL and transbronchial biopsy taken from right upper lobe. BAL was negative for any microbiological etiology. Based on the clinical information and histopathology showed Fragments comprise of sloughed bronchial epithelium. One of the fragment exhibits dilated probable airway surrounded by cholesterol granulomata together with scattered plasma lymphocytic infiltrate. In the periphery of this particular fragment, few alveoli foamy histiocytes in the lumina were noted so diagnosis of chronic hypersensitivity pneumonitis with cholesterol granulomata was made. Patient was later started on oral steroids. Patient responded well.

**Conclusion:** Hypersensitivity pneumonitis (extrinsic allergic alveolitis) is a syndrome caused by repeated inhalation of specific antigens from occupational or environmental exposure in sensitized individuals. Continuous exposure to the antigen can lead to fibrosis which can be irreversible and resistant to any treatment. Knowledge of HP evolution is essential, particularly in the professional level as continuous exposure can lead to morbidity as in case of our patient.

**Keywords:** Hypersensitivity pneumonitis, cholesterol granulomata, transbronchial biopsy.

### 11.79 CHONDROSARCOMA, A RARE MEDIASTINAL TUMOR

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**Introduction:** Chondrosarcoma is a type of sarcoma that affects the bones and joints. It could be primary whereas chondrosarcomas developing superimposed on pre-existing benign cartilage neoplasms are referred to as secondary. Clinical features include Deep, dull, achy pain, Nerve dysfunction, Limitation of joint range of motion and disturbance of joint function and Pathologic fracture. Here we presented an unusual case of Chondrosarcoma which was an incidental finding and with unusual symptoms.

*Case:* 40 years old male came in pulmonology outpatient department for medical clearance with a chest x ray which has opacification in retro cardiac paravertebral region on left side. There was no significant past medical history, on further inquiry he revealed that he has dull backache occasionally. He has Addiction of tobacco pan and there was no weight loss. Lateral view of chest x ray was done that suggestive of posterior mediastinal mass. Referred to CTS for further evaluation but he was lost to follow up. Presented in CTS clinic after one and half years, at that time he has mild dull localized epigastric discomfort only, Underwent left posteriolateral thoracotomy & Resection of posterior mediastinal tumor on 15-11-2012 with query of teratoma, germ cell tumor or hydatid cyst, Histopathology was suggestive of myxoid chondrosarcoma. Tumor was 0.1 cm away from the painted capsule. He was started on radiation, Follow up scan were done which showed only post surgery fibrotic changes.

*Conclusion:* Condrosarcoma is a rare tumor and it has variable course from benign to malignant course.

*Keywords:* Condrosarcoma, retro cardiac, thoracotomy.

### 11.80

#### COMBINED PULMONARY MUCORMYCOSIS AND ASPERGILLOSIS IN AN IMMUNE-COMPETENT PATIENT MANIFESTING AS A PULMONARY-RENAL SYNDROME

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*Introduction:* Combined pulmonary coinfection with Mucor and Aspergillus is rare in an immune-competent patient. We report a case who presented with clinical features of a pulmonary-renal syndrome.

*Case report:* A 45 year old male with no prior comorbid presented with productive cough, high grade fever, worsening dyspnea for 1 week and

hemoptysis for 1 day. He had renal failure and underwent intubation due to respiratory failure. The chest X-Ray showed bilateral lung infiltrates. CT chest confirmed multiple areas of consolidation with cavitation. Bronchoscopy showed inflamed mucosa and hemorrhage. Sequential bronchial lavage was not done due to high FiO<sub>2</sub> requirement. All smears for microbiology were negative. He was started on broad-spectrum antibiotics and I/V steroid pulse therapy was given for 3 days along with plasmapheresis for a high clinical suspicion of pulmonary-renal syndrome. The serum ANA, c-ANCA, p-ANCA were negative. Subsequently BAL cultures grew Mucoraceous absidia and Aspergillus flavus. The cytopath of bronchial fluid showed both aseptate and septate hyphae. He was initially treated with Amphotericin-B and was later switched to Itraconazole. He showed dramatic clinical improvement, renal function normalized and he was discharged home. The lung infiltrates on chest X-Ray had completely resolved on clinic follow-up after 2 weeks.

*Conclusion:* Combined Mucor and Aspergillus pulmonary infection is rare. To our knowledge, pulmonary coinfection with Mucor and Aspergillus presenting with pulmonary-renal syndrome has not been reported previously.

*Keywords:* Pulmonary aspergillosis and mucormycosis, immunocompetent, pulmonary-renal syndrome

### 11.81

#### AIRWAY STENOSIS IN A YOUNG GIRL HAVING GRANULOMATOSIS WITH POLYANGIITIS- A CASE REPORT

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*Introduction:* Granulomatosis with polyangiitis (Wegener's) is a necrotizing granulomatous vasculitis affecting the respiratory tract, kidneys, and other small vessels. Childhood GPA is rare. Childhood GPA has higher prevalence of airway inflammation, nasal deformity and subglottic

stenosis, they occur independently of systemic manifestations and are more resistant to systemic therapy.

*Case:* 16 year old girl, diagnosed as GPA based on clinical and laboratory findings (collapsed bridge of nose, renal failure, cavitatory lesions on chest x-ray, significantly raised C-ANCA), was started on steroid and cyclophosphamide and responded to treatment but then was lost to follow up. After eight months she presented with worsening dyspnea, cough, and weight loss for 3 weeks, at presentation she was on steroids, cyclophosphamide and azathioprine. She had stridor and bilateral scattered wheeze, on evaluation of upper airways she had nasal crusting, granular middle turbinate, rest were unremarkable. Her chest x-ray showed multiple cavitatory lesions bilaterally. CT chest was done which showed significant narrowing of left main bronchus, bronchoscopy showed narrowing of the openings of both right and left main bronchus (left being effected more) with opening of only the right upper lobe visible while opening of rest of the lobes were not visible due to significant scarring of the airways. The ideal procedure was bronchial stenting to relieve left main stem bronchial stenosis, a facility not available in our centre, CTS was consulted for any intervention but they couldn't offer much due to her underlying pulmonary pathology. A trail of rituximab was planned but the patient did not follow up.

*Conclusion:* Studies regarding airway manifestations in childhood GPA are limited. Medical therapy has limited role in the prevention or treatment of airway inflammation, endoscopic intervention is considered as the therapeutic method of choice including balloon dilation and stenting, a facility rarely available in our country, hence much work is needed in this regard.

*Keywords:* Granulomatosis with polyangiitis, airway stenosis. Endobronchial dilatation and stenting

## 11.82 IDIOPATHIC ACUTE EOSINOPHILIC PNEUMONIA WITH RESPIRATORY FAILURE- A CASE REPORT

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*Introduction:* Idiopathic acute eosinophilic pneumonia (AEP) is a rare disease and differs from other eosinophilic pneumonias by its acute onset, presence of fever, and hypoxemia. CBC usually shows a neutrophilic leukocytosis; peripheral eosinophilia may develop over the course of the disease, treatment is with glucocorticoid therapy, the response is often dramatic with reversal of respiratory failure.

*Case:* 50 year old gentleman, with no known comorbidities, presented with fever for 10 days, cough and shortness of breath for 3 days, he had history of pan chewing with tobacco and exposure to parrots 8 years, he changed his home 2-3 months back and bought new parrots, he had a recent travel history to Saudi Arabia. He was in hypoxic respiratory failure with high FiO<sub>2</sub> requirement and kept on NIMV, CBC showed TLC of 30K 86% neutrophils, chest x-ray showed extensive bilateral alveolar infiltrates throughout the lung fields with some air bronchogram. His CT chest showed crazy paving. He was treated as severe community acquired pneumonia with broad spectrum antibiotics and oseltamivir but his condition did not improve with high oxygen requirement and persistent leukocytosis, on the 5th day of admission despite of being on broad spectrum antibiotics he started having fever, his CBC showed TLC of 31 k with 30% eosinophils, procalcitonin was negative, bronchoscopy was done which showed inflamed mucosa, microbiology was negative, unfortunately DR showed degenerated cells, with high clinical probability he was started on high dose intravenous steroids, within 24 hours his oxygenation improved significantly, with resolution of peripheral eosinophilia in two days, he was discharged home without oxygen within 4 days on oral steroids. On follow up in 2 weeks he had no active complaints with a normal chest x-ray.

*Conclusion:* AEP is a rare disease and not well described in our region. It should be considered in the differential diagnosis of acute hypoxemic failure especially in the setting where other causes has been ruled out as early diagnosis can significantly improve outcome.

*Keywords:* Idiopathic acute eosinophilic pneumonia, respiratory failure.

### 11.83

#### MUCORMYCOSIS AND ASPERGILLOSIS IN AN IMMUNE-COMPETENT PATIENT MANIFESTING AS PULMO-RENAL SYNDROME- A CASE REPORT

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*Introduction:* Mucormycosis is a rare fungal infection which is commonly seen in immunosuppressed patients mainly uncontrolled diabetics, or those with hematological malignancies etc. Rhinocerebral is the most common presentation followed by pulmonary. Combined invasive mucor with aspergillus in immune-competent patients is rarely reported. We discuss here a case report of an immune-competent patient who presented with symptoms suggestive of pulmo-renal syndrome but turned out to have invasive mucormycosis and aspergillosis.

*Case report:* A 45 year old male with no prior comorbidities presented with productive cough, high grade fever, worsening dyspnea for 1 week and hemoptysis for the last 24 hours. He had renal failure and underwent intubation due to respiratory failure. Chest X-Ray showed bilateral infiltrates. CT chest showed multiple patchy areas of dense consolidation with cavitating changes bilaterally. Bronchoscopy showed inflamed mucosa and hemorrhages but sequential lavage was not done due to high FiO<sub>2</sub> requirement, smears of microbiology was negative. With suspected of underlying pulmo-renal syndrome was given I/V steroid pulse therapy for 3 days with a session of

plasmapheresis however ANA, cANCA and pANCA all came out to be negative though his FiO<sub>2</sub> improved. Subsequently BAL cultures showed >10,000 CFU of Mucoraceous, Absidia and Aspergillus Flavus, cytology of bronchial fluid showed both aseptate and septate hyphae, so started on Amphotericin, Itraconazole he improved clinically. His renal parameters also normalized and he was discharged home. On his follow-up after 2 weeks, the lung infiltrates on his Chest X-Ray had completely resolved.

*Conclusion:* While invasive aspergillosis is defined in literature to occur in apparently immune-competent patients having genetic defects in innate immune functions, such as toll-like receptor 4, or surfactant A2, most cases of mucormycosis in immune competent is cutaneous or rhinocerebral involvement, with very few pulmonary cases, and hence combined infection is rarely reported thus lack of knowledge in this regard requiring studies specially with the probability of a combined genetic defect.

*Keywords:* invasive aspergillosis and mucormycosis, immunocompetent, pulmo-renal syndrome.

### 11.84

#### REMOVAL OF HIJAB PIN WITH FLEXIBLE BRONCHOSCOPY FROM TRACHEOBRONCHIAL TREE

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*Introduction:* Foreign body inhalation is common among children's usually less than six years of age. It can lead to acute respiratory distress, airway obstruction and even sudden deaths. The incidence of accidental hijab pin inhalation in adult women is rare but they are high risk because of lack of awareness, Here we are presented a case of incidental hijab pin inhalation.

*Case:* 17 years old female while wearing hijab, she kept hijab pin in mouth and incidentally aspirate it, she went initially in gastroenterology clinic because

she thought she ingested it but after performing x ray chest and abdomen it revealed a sharp foreign body, in left retro cardiac area lateral to the paravertebral area suggestive of foreign body in airway, so we performed bronchoscopy that showed hijab pin in left main stem bronchus, successfully removed after using flexible bronchoscope.

*Conclusion:* Hijab pin inhalation is a serious hazard and it can have serious outcomes, care should be taken. It is common when women holds hijab pins in their teeth while wearing hijab and talking to other at the same time.

*Keywords:* Hijab pin, foreign body, flexible bronchoscope.

### 11.85

#### ACUTE PANCREATITIS – A RARE COMPLICATION OF ISONIAZID –A CASE REPORT

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*Introduction:* Pancreatitis due to drugs is rare accounting upto 2% of the cases. Isoniazid is a mainstay of treatment in Tuberculosis, Isoniazid induced acute pancreatitis is a rare complication .Here we present a case of an acute reversible pancreatitis after Isoniazid treatment of tuberculosis.

*Case:* 69 years old lady,with DM , CKD and Pott's disease, on ATT(Isoniazid , rifampicin, ethambutol, and pyrazinamide) for 5 weeks, presented with epigastric pain for 1 week . On examination abdomen was diffusely tender .Her laboratory workup showed raised TLC, increased Creatinine, low Potassium, normal LFTs and Calcium. Lipase levels were raised (634 IU/L).Ultrasonography of Abdomen was normal.CT Abdomen could not be done due to cost issues of the patient. Patient was resuscitated with fluids and ATT were held immediately .Patient improved clinically in next 24 -36 hours. On 5th day she was restarted on ATT including Ethambutol, Rifampicin and second line

ATT Moxifloxacin. Patient was observed closely, and lipase level monitoring was done which showed the decreasing trend. Patient responded well and discharged on the above ATT regimen.

*Conclusion:* Isoniazid is a widely used drug in terms of treatment and prophylaxis of TB, and in areas like Pakistan where TB is endemic, its adverse effects should be kept in mind. Pancreatitis due to drugs should be in list while treating a patient for abdominal pain soon after starting of Antituberculous drugs .Isoniazid induced pancreatitis is rare but a fatal condition , but is potentially reversible and prognosis is good provided that it is recognized early and treated on time by withdrawal of the culprit agent in an appropriate clinical setting.Conclusion of the case and the review of the International literature highly suggest that Isoniazid can induce acute pancreatitis.

*Keywords:* Acute pancreatitis, Isoniazid complication.

### 11.86

#### BARRIERS AND PERCEPTIONS REGARDING CODE STATUS DISCUSSION WITH FAMILIES OF CRITICALLY ILL PATIENTS IN PAKISTAN: PHYSICIANS' PERSPECTIVES.

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*Introduction:* Code status orders involve decisions about doing or not doing CPR (cardiopulmonary resuscitation) in the event of cardiopulmonary arrest. In Pakistan, like other Asian countries, dynamics of code status discussion are slightly different from the rest of the t world. Code status discussion is often a dilemma for the patients' family. However, there is also variability in perceptions, methods of code discussion among physicians. As compare to patients and their families, physicians are easier to undergo interventions for improving end of life discussion. But before designing and implementation of such interventions it is important to identify the barriers faced by physicians during such discussions.

**Objectives:** To determine the perceptions and frequency of various barriers in discussion of code status by physicians.

**Methods:** This was a cross sectional study done in the department of Medicine of The Aga Khan University Hospital Karachi. Ethical approval was taken before conduct of study. A Questionnaire was developed by 5 physicians by brainstorming about which questions should be asked. It was sent to all faculty members and residents of department of Medicine. Statistical analysis was done using SPSS.

**Results:** Out of 120 recipients about 77 (64.16%) participants responded to questionnaire. There were 50 (65%) males and 27 (35%) females. Out of 77 participants 48 were residents, 2 fellows and 27 were attending physicians. Average number of code status discussed by individual participant in three months was  $21.46 \pm 31.44$ . Almost all 75 (97.4%) participants believe on code status discussion. More than half i.e. 43 (53.8%) of participants discuss code status when patient gets sick, while 23 (29.9%) discuss code on first visit to patient. Counselling room is the preferred place for discussion of code status by 52 (67.5%) participants. Among the barriers to code status discussion by physicians; 23 (29.9%) felt personal discomfort, 13(16.9) feared that raising the topic of death will compromise the doctor-patient relationship, 33(42.9%) thought that Lack of knowledge regarding prognosis of a particular disease was a reason, 22(28.6%) feared legal consequences, 15(19.5%) thought that they wanted to be a symbol of hope, 43(55.8%) indicated time constraint as a barrier, 35(45.5) said that lack of ample place to discuss code, 36(46.8%) , 29(37%) said delayed care post DNR, 37(48%) said improper nursing care after DNR status, 21(27.3%) feared family reaction, 34(44%) thought that family might think that they don't want to treat patients, 57(74%) said that family might go into denial, 39(50) thought that they assume that family leaves decision on them , 51(66%) think there is conflict between family members, 42(54%) said when family members are doctors, 40(51%) thought due to language barrier, 51(66%) lack of education in family.

**Conclusion:** The most common barriers in discussing code status by physicians were , family might go into denial on code discussion, conflict

between family members, lack of education in family, time constraints and when family members are doctors.

### 11.87

#### TAKAYASU ARTERITIS PRESENTING AS AORTIC REGURGITATION

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**Introduction:** Takayasu Arteritis is a chronic vasculitis of large vessels, defined as granulomatous inflammation of aorta and its major branches; affecting mostly women and more prevalent in Asian countries. Diagnosis is made by signs and symptoms, radiographic findings and high inflammatory markers. Systemic symptoms like fever, weightloss, arthralgias are common in early phase. Later ischemic signs or symptoms develop of one or more large vessels. Common vascular features are claudication, bruits, aortic regurgitation and BP difference of extremities.

**Case:** 34 year old female presented with history of exertional dyspnea, palpitations and chest tightness since one year. On work up aortic regurgitation was diagnosed, she underwent AVR surgery. During surgery Aortitis was suspected and patient was referred to Rheumatology. History revealed she had symptoms of fever, myalgias and arthralgias for one year. Examination showed diminished peripheral pulses and 10 mmHg BP difference between the upper extremities. Her ESR was 110, autoimmune profile was negative. CATAngiogram showed aneurysm, circumferential plaque and ulcer in ascending aorta.

**Discussion:** TA exhibits panarteritis in arterial lesions. In early phase, granulomatous inflammation is present. In scar stage, most vessels with residual inflammation develop fibrosis. AR is present in 20-25% cases, as a result of annular dilatation of ascending aorta. Major treatment is to control inflammation and proceed with AVR if needed. Serious side effect of AVR is valve detachment post surgically of prosthetic valve , if inflammation persists.

Few cases have been reported in literature where TA was diagnosed in patients who primarily presented with isolated aortic valve regurgitation. Our case was special as aortitis was suspected by the surgeon during AVR. We stress on the need of keeping a diagnostic possibility of TA in patients with AR or cardiac murmur and non-specific symptoms like fever, malaise and weight loss.

## **11.88** FIBROMYALGIA IN INTERNAL MEDICINE CLINICS

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*Background:* Fibromyalgia is a syndrome of persistent widespread pain, stiffness, disrupted and restless sleep leading to fatigue, anxiety and depression. Recent clinical studies have shown fibromyalgia to be widespread amongst patients visiting their GPs with pain related complaints. Due to the lack of research in Fibromyalgia, these patients are mostly misdiagnosed.

*Objective:* To determine the patients with fibromyalgia presenting to Internal medicine clinics.

*Method:* This dissertation investigates the frequency of adult patients between ages of 18 to 65 years with fibromyalgia visiting the Internal Medicine clinics at Agha Khan University Hospital (AKU) with complaints of body aches and fatigue.

*Results:* The results of this study validate similar studies carried out in regions with a majority Caucasian population, and show that 40.3% of patients with pain related symptoms visiting AKU have fibromyalgia.

*Conclusion:* Based on these results, it is concluded that patients with complaints of generalized pain should be evaluated with an open approach towards fibromyalgia as the diagnosis is often overlooked causing delayed and suboptimal care for the patient. Furthermore, a more detailed study needs to be carried out throughout the country to get a better understanding of how widespread this syndrome is in this region.



## **Public Health**

## 12.1 CHILD ABUSE: HIDDEN ANGLES

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*Introduction:* The dynamics of child abuse have been recognized as a global emerging social issue which is highly associated with child humiliation. It has become a universal health priority due to the perilous impact on the development of a child, including social functioning, health risk behavior and psychological functioning. The objective is to review the relevant literature from peer reviewed journals on the physical, psychological abuse and neglect on children and adolescents and associated factors of child abuse published during the past 10 years.

*Method:* Literature published between 1994 and 2014 was revised following a systematic search on Pubmed, Medline, PsychInfo, Science Direct and Wiley. Key words used as search engine were child, abuse, maltreatment, punishment, violence, injury and Harm

*Results:* Literature suggested that child maltreatment and abuse is a result of some “Push factors” which are aggravating child abuse at societal level. Some of the push factors were poverty, domestic violence, large family size, gender discrimination, male dominance, authoritarian parenting, acceptance of punishment as disciplinary strategy, inadequate parental guidance, homeless children abused by their families, parental history of abuse, paternal unemployment, low income of fathers, use of substance abuse by parents, young parents and low parental education. In addition, most of the studies were exploratory studies. However, follow-up, prevention and intervention research studies were relatively rare and was the major limitation while review databases.

*Conclusions:* Child abuse research in the next decade needs to focus on more understanding the associated factors which vary from culture to culture. Moreover, there is extreme need to understand those factors which can lead to trigger child abuse at community level and to increase the

understanding regarding the importance of child abuse awareness and prevention at societal level. Increased resources are needed to support child maltreatment research studies and investigators

*Keywords:* Child abuse, Punishment, mal treatment

## 12.2 ASSESSMENT OF HEAVY METALS AND MICROORGANISMS IN DRINKING WATER OF DISTRICT QUETTA

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Contamination of drinking water due to heavy metals and microbial growth is one of the most important concerns that have received attention locally and globally due to its toxicological effect on environment as well as on public health and is an emerging problem in District Quetta. Concentration of the eight heavy were investigated to analyze the concentration of heavy metals and microbial growth and to correlate different parameters affecting the drinking water quality. The AASP flame method was used to analyze the concentration of heavy metals. Based on the study results, it was concluded that most of the drinking water samples found fit for consumption with respect to the physiochemical and aesthetic water quality parameters but generally poor with respect to the microbial growth due to intermittent water supply, leakage of pipes, polluted sewerage pipes and contamination of shallow water tables due to human activities. Tube wells water samples had less concentration of heavy metals than the home water samples. On average the percentage of heavy metals Mg, Tl, and Sb were above the WHO standards while Ca, As, NO<sub>3</sub>, SO<sub>4</sub>, and Cr were below the WHO standards and Sb was above the WHO standard in the drinking water of almost all the areas of District Quetta. The depth of tube well had negative impact on conductivity and positive impact on calcium and magnesium

contents. Calcium and magnesium had positive impact and antimony and thallium had negative impact on microorganisms whereas pH had negative impact on microorganisms and conductivity.

*Keywords:* Heavy Metals, Physiochemical, Microbial

### 12.3 HARMFUL EFFECTS OF SELLING OF SUBSTANCE ABUSE

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*Background:* Since decades, societies all over the world have intentionally consumed substances, for relieving stress, as part of cultural and ceremonial practices, as fashion trends and at times for treating illnesses, which alter the mental capabilities of consumers. Such substances are known as psychoactive drugs. In most cases, the consequence is that people become addicted to these substances. These psychoactive drugs create harmful effects on human life and its surroundings.

*Method:* However, not many researches have been conducted to identify the effects of selling of substance abuse. Therefore, systemic literature review from CINAHL and Pub med health (2008-2013) was conducted to identify the effects of selling psychoactive substances on people and nations.

*Result:* The findings show that it harms the physical and psychological health of people and increases mortality rate. Due to the consumption of money and other savings in buying illicit drugs and a simultaneous decreased productivity at work tends to increase the financial crisis for families.

*Conclusion:* Substance abuse proliferates the level of crime in the country and curse such as theft, robbery, accidents and murders become common. Therefore, laws should be introduced in the country to monitor the production and selling of cocoa and opium leaves that are used in preparation of psychoactive agents.

*Keywords:* Physical Illness, psychological illness, High mortality

### 12.4 HUMAN TRAFFICKING

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*Background:* Nowadays, multiple criminal activities are being witnessed almost every day and they are putting devastating effects on human life. Human trafficking is one of the major dreads in most regions of the world which is violating basic human rights. It is the fastest growing crime affecting the mankind. Pakistan is one of those countries where this crime is prevalent.

*Objective:* This paper discusses different causes behind improper reporting of trafficking and rationale strategies to overcome this issue.

*Method:* However, in Pakistani context there is no specific statistics present due to improper reporting of this crime. Rational strategies are needed for overcoming the poor statistic issue. Literature has shown that poverty and unemployment, lack of awareness and gender discrimination are some of the factors which make an individual vulnerable to trafficking (Khowaja, Tharani, Agha & Karamaliani, 2012). Human trafficking has put devastating effects on the lives of individual's because of negative effects and different health problems. It begins with a systematic review of literature, identifying various causes behind improper reporting of trafficking and its effect on individual's health. Additionally, it emphasizes on the need of building proper channels where victims can report this crime.

*Conclusion:* Hence numerous interventions are required to be done at community level. Mutual actions by law making authorities, governmental and non-governmental organizations can help in getting rid of this crime. Awareness programs initially at community level can help in proper reporting of crime. Also, this will ultimately help law making authorities to take action against this crime.

**Keywords:** crime, pull factors, push factors

## 12.5 PREVALENCE AND ASSOCIATED FACTORS OF DYSLIPIDEMIA AMONG SOUTH ASIAN ADULTS: THE CARRS SURVEILLANCE STUDY

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**Introduction:** Limited population based epidemiological studies are available on dyslipidemia from South Asia.

**Objective:** The study determines the prevalence and its types, and the factors associated with dyslipidemia among South Asian population.

**Methods:** Baseline survey of Center for Cardiometabolic Risk Reduction in South Asia (CARRS) Surveillance was collected between October 2010 and December 2011. Using multi-stage cluster random sampling, the study analyzed 13,717 representative adults aged  $\geq 20$  years of urban Chennai and Delhi in India, and Karachi in Pakistan. High total cholesterol (TC) was defined as TC  $\geq 240$  mg/dl or on medicine, hypertriglyceridemia (TG) as serum TG level  $\geq 200$  mg/dl, high low-density lipoprotein cholesterol (LDL-C) as serum LDL-C  $\geq 160$  mg/dl or on medicine, low high-density lipoprotein cholesterol (HDL-C) as serum HDL-C  $< 40$  mg/dl among males and  $< 50$  mg/dl among females. Multivariate logistic regression was carried out to adjust confounders and determine the factors associated with dyslipidemia. **Results:** The prevalence of high TC was 8.7% (95% CI: 8.0-9.5), high TG was 17.7% (95% CI: 16.6-18.7), high LDL-C was 8.2% (95% CI: 7.5-8.9) and low HDL-C was 57.5% (95% CI: 56.0-58.9) in South Asian adults. The prevalence of any dyslipidemia was 69.4% (95% CI: 68.1-70.8), 61.6% among males and 76.4% among females. Risk of dyslipidemia was associated with increasing age, female gender, professional and skilled workers, increasing BMI, individual with prediabetes and diabetes and those using tobacco.

The use of alcohol use was protective for dyslipidemia.

**Conclusion:** The major type of dyslipidemia in South Asia is low HDL-C followed by high TG. The prevalence of dyslipidemia is high and requires urgent attention to prevent cardiovascular disease risk in South Asia

**Keywords:** dyslipidemia, prevalence, South Asia

## 12.7 ASSOCIATION OF POST TRAUMATIC STRESS DISORDER WITH WORK PERFORMANCE AMONGST EMERGENCY MEDICAL SERVICE PERSONEL, KARACHI

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**Objective:** The purpose of the study is to find association between PTSD and Work performance in EMS Karachi Pakistan

**Methods:** This cross-sectional study was carried out in a selected EMS setting in Karachi, Pakistan. EMS personnel were screened for potential PTSD using impact of event scale-revised (IES-R). Work performance was assessed on basis of five variables; number of late arrivals to work, number of days absent, number of days sick, adherence to protocol and patient satisfaction survey over the period of 3 months. In order to model outcomes like number of late arrivals to work, days absent and days late negative binomial regression was applied. Whereas logistic regression was applied for adherence to protocol and linear for patient satisfaction scores.

**Results:** Out of 536 EMS personnel, 525 were eligible, of whom 518 consented. However data on 507 were included because 7 left the job during study period. The mean scores of PTSD was found to be  $24.0 \pm 12.2$  corresponding 95% CI 23.0 to 25.0. However, no association was found between PTSD and work performance measures: number of late arrivals (RRadj 0.99; 95% CI 0.98-1.00), days absent (RRadj 0.98; 95% CI 0.96-0.99), day's sick,

adherence to protocol (ORadj 1.01: 95% CI 0.99 to 1.04) and patient satisfaction (0.001% score; 95% CI -0.03% to 0.03%).

*Conclusion:* one in five EMS found to have PTSD on screening in EMS setting Karachi. PTSD is not associated with work performance in the study population.

*Keywords:* trauma, PTSD, EMS

## 12.8

### TREND ANALYSIS OR ECOLOGICAL FALLACY? EXPLORING GDP, AS A MACRO DETERMINANT OF SUICIDE IN OECD COUNTRIES.

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*Introduction:* Globally 800 000 people die due to suicide every year. Regional suicide rates may be classified as ecological fallacy or can there be a trend when we look at rates of suicide that can be explained by economic growth? GDP and unemployment has a strong documented impact on suicide rates.1,2

*Objective:* To investigate the relationship of GDP per capita and unemployment with overall suicide rate per 100000 in the member nations of Organization for Economic Cooperation and Development (OECD). *Method:* Country-based data on suicide per 100,000 population, for the 4 year period 2002-2005, were gathered from the World Bank Indicator Database. Mean and SD were taken out for dependent and independent continuous variables. Log of GDP and unemployment rate separately were regressed on log of suicide rate per 100,000 . After determining significance of the overall model , MLR was run and interaction was seen.

*Results:* Overall mean suicide rate was  $12.45 \pm 4.8$ . Ranging from 4.9 to 22.4. Unemployment was  $7.58 \pm 7.38$  and GDP was  $37160.17 \pm 10198.02$ . As GDP increased suicide rate decreased ( coefficient = -0.46; p value = < 0.001 , unemployment was also significant with p value= 0.007 and interaction

between GDP and unemployment was present ( p value=0.016). In making the scatter plot, we needed to drop the values of Norway and Sweden and we got a linear relationship and a normally distributed Normal Probability plot. *Conclusion:* Economical impact should not be dismissed based on ecological fallacy. There is a linear association between suicide rates and GDP of a country.

*Keywords:* suicide, OECD, GDP

## 12.9

### MANAGEMENT OF SUICIDAL ATTEMPTS – ARE HEALTH CARE PROVIDERS PAYING DUE ATTENTION?

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*Aim:* To strengthen mental health nursing practice through integration of theoretical knowledge regarding suicidal attempts in Pakistan.

*Method:* A clinical case study of 25 years old male schizophrenic patient is generalized with the support of literature and recent prevalence of suicidal attempts in Pakistan. According to Aga Khan University Hospital; Health Information Management System , Karachi registered cases of suicidal attempts in AKUH across Pakistan from 2008 to 2013 age range( 16 to 50 years) are 228[1] . Due to religio-cultural factors cases are not reported in Pakistan according to Khan Muhammad , Karim and Prince (2008), in Karachi suicidal attempts in male and female 4 :1 [6]. According to Xing,tao, Wan, Hang, Hao and Haung (2010) patients attempted suicide were those who faced stressful life event i.e. parental separation, physical child abuse, improper rearing of child and smoking etc[4]. Another important factor is biopsychological factor i.e. protein kinase produces psychosis and suicidal ideation. According to Dwivedi and Pandey (2011) gene brain-derived neutrophic factor (BDNF) responsible for alteration of mental activities and increases depression, suicidal ideation and attempts [3]. According to Chan, Chien and Tso (2009) the Critical

Interpretative Synthesis is six step method used for evidence based practice i.e. formulating and reviewing questions, searching literature ,sampling, determining quality and intervention[2].

*Conclusion:* For the management of psychiatric emergencies it is very important to know all causative factors which enable us to provide desired care via interpretation clinical case in critical interpretative synthesis frame work.

*Keywords:* Psychiatric Emergemncies, Managing Skills, health care professionals

## 12.10

### THE INCREASING IMPORTANCE OF GERIATRIC NURSING: CURRENT DEVELOPMENTS AND FUTURE DIRECTIONS.

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*Introduction:* Geriatric nursing is a rapidly emerging specialty due to the demographic transition throughout the world.

*Objective:* The aim of this literature review is to assess the current situation and to highlight the areas of concern including provision of age specific care and financial implications.

*Methods:* PubMed indexed research articles published from 2005-2015 were selected by using the key words 'Geriatric population', 'nursing care', and 'aging'. Emerging themes were identified and findings were summarized.

*Results:* Technological advancements have increased life expectancy in both developed and developing countries. Therefore, number of older adults increasing significantly, i.e. 600 million to 2 billion people from 2000 to 2050. Moreover, age is a non-modifiable determinant of disease and those aged 65 years and over suffer from at least one chronic illness like cardiovascular disorder, diabetes, and arthritis. Consequently, older adults become more prone to disabilities, malnutrition, depression and dependency. Nurses are the only front line health care providers who work in multiple settings like in community, hospital, and nursing homes. Where, these specialist nurses can

meet health needs of older adults to provide quality care, prevent disability and reduce health related expenses. The situation is alarming in developing countries like Pakistan, where the resources are limited and poverty is rampant.

*Conclusion:* In the near future most of the health care services user will be aged group. So that government and NGOs should focus on this specialty to provide age specific quality care and to control financial burden. Furthermore, there is also need to inspire novice and scholar nurses to consider their care in gerontology.

*Keywords:* Geriatric population, nursing care, aging

## 12.11

### ENERGY DRINKS CONSUMPTION PRACTICES AMONG MEDICAL STUDENTS OF A PRIVATE SECTOR UNIVERSITY OF KARACHI, PAKISTAN.

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*Objective:* Energy drinks consumption has become popular among students and athletes over the past few years. This study aimed to estimate prevalence of energy drinks consumptions among medical students and also to assess their knowledge regarding it. Design: Cross sectional study. Place and Duration of study: It was conducted at the medical college of Aga Khan University, Karachi, Pakistan from October to December 2013.

*Patients and Methods:* The study population was under-graduate medical students. Data was collected by PI and Co PI's through a self administered questionnaire.

*Results:* The prevalence of energy drinks consumption was found to be 52%. Red bull was the most common brand consumed (43%). The major reasons reported for its usage were to gain/replenish energy (15%), and studying for examination (15%). Television was reported as the major source of information (66%) followed by friends (48%). Males were consuming more energy

drinks as compared to females (prevalence ratio = 2.30; 95% CI: 1.58, 3.35).

*Conclusion:* Majority of the medical students consume energy drinks and are not truly aware of the ingredients of these drinks. There is a strong need to create awareness regarding these drinks especially among adolescents and teen agers.

*Keywords:* caffeine, energy drinks, students

## 12.12

### BACTERIAL CONTAMINATION ON MOBILE PHONES OF HEALTH CARE WORKERS

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*Background:* With all the achievements and benefits of the mobile phone, it is easy to overlook the health hazard it might pose to its many users. The constant handling of the mobile phones by users (in hospitals, by patients, visitors and health care workers etc.) makes it open breeding place for transmission of microorganisms, as well as Hospital-Associated Infection.

*Objective:* The aim of this literature review is to make people aware that their mobile phones can transmit more than just a call.

*Method:* Research articles from 2011-2014 were selected and reviewed to find different views. In all the articles mobile phones have been aseptically swabbed and were inoculated on different agars to see the growth. In 2011 research article the tests has been performed on the mobile phones of common people and in 2012-2014 articles it is done on mobile phones of Health care workers.

*Findings:* Literature revealed that the most of the mobile phones were contaminated with *Bacillus cereus*, *Staphylococcus aureus*, *Escherichia coli*, *Enterococcus faecalis*, *Salmonella* spp. *Pseudomonas aeruginosa* etc. In the research done in 2011 antibiotic susceptibility test is also mentioned in which *Salmonella* spp. and *Shigella* spp. showed the most resistance to the antibiotics

while *Escherichia coli* was the most susceptible bacteria to antibiotics.

*Conclusion:* Periodic cleaning of mobile phones with disinfectants or hand cleaning detergents as well as frequent hand-washing should be encouraged as a means of curtailing any potential disease transmission.

*Keywords:* bacteria, contamination, mobile phones

## 12.13

### INCIDENCE AND SOCIAL PREDICTORS OF ORAL LESIONS IN WOMEN WITH HABITUAL SMOKELESS TOBACCO USE. A STUDY DONE IN TWO SMALL SQUATTER SETTLEMENTS IN SUBURBS OF KARACHI.

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*Background:* The rising incidence of oral cancer in Pakistan particularly in women has been largely attributed to the increasing trend of smokeless tobacco use. Oral malignancy is usually preceded by pre-malignant lesions ;increased incidence of which indicate a further rise in oral malignancy .

*Objective:* To determine the incidence and independent predictors of oral lesions in women with habitual use of smoke-less tobacco associated with patterns of use.

*Methods:* 102 women who used smokeless tobacco in two squatter settlements in suburbs of Karachi namely Dhabeji and Abdullah Goth were recruited .A questionnaire was filled inquiring the patterns of use and the oral cavities of each subject was examined for lesions.

*Results:* The average age was 36.6±12.4 years and the average starting age was 20.5±10.9 . About 47%(n=48) were found to have oral lesions, the most common being oral ulcers 41%(n=42), leukoplakia 21%(n=22), melanotic macules 18%(n=19) , submucous fibrosis 4%( n=5) ,erythroplakia was observed in 2%(n=3) .The highest frequency of oral lesions were found in ghutka users 57.4% (n=27/47), followed by Naswaar 53.3%(n=8/15), Paan25.9% (7/27) and

Mawa25%(3/12) . The frequency of use greater than 3times /day(OR 2.62 , 95% CI(1.17-5.86), the age of initiation below 20(OR 4.173, 95%CI(1.74-10.01) and duration of use greater than 10 years(OR 4.917, 95%CI (2.07-11.67) were independent factors associated with increased incidence of oral lesions.

*Conclusion:* A high incidence of oral lesions including the pre-malignant ones among women is an indicator of increased morbidity and mortality in Pakistan in the future due to oral cancer. Appropriate measures are required to address this issue.

*Keywords:* women, oral cancer, smokeless tobacco

## 12.14

### CHLAMYDIA: A CONCEAL HEALTH ISSUE

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Sexually transmitted infections (STI) are major health problems proceeding to morbidity, mortality, and social stigma which greatly impact the health worldwide. The common STI infecting the population is Chlamydia trichomatis. Therefore, this review aims to discuss the significance in Pakistan and importance of preventing Chlamydia. This contribution is based on literature review of past twelve years, concentrating on the prevalence in different regions including Pakistan. Also, relating various causes, diagnostic tools, complication that includes stigmatization and levels of prevention. The inclusive criteria for the selection of articles focuses on effects Chlamydia contributing to the disease burden, understanding the natural history of disease and best recommendation used in practice to decrease the incidence of Chlamydia worldwide. Different electronic databases (ScienceDirect, Springerlink, BMJ Journals Collection, and others) were used for identifying twenty-eight empirical literatures fulfilling the criteria. Chlamydia is a bacterial infection that spreads through sexual contact with an infected individual. According to Nicola, Geisler, Stephenson & Hook (2009),

1,244,180 cases of Chlamydia were reported to the Centers for Disease Control and Prevention, the largest number of cases ever reported. This review proved that understanding the Chlamydia and its awareness among communities that can help decrease its severity and early interventions are effective. This extensive review relays that Chlamydia is a serious global health issue which is common but is usually not discussed and it's the utmost responsibility of healthcare professionals and health sectors to invest more interest in prevention to decline the strength of STI.

*Keywords:* Chlamydia, sexually transmitted infections, stigma

## 12.15

### SMOKERS ARE MORE LIKELY TO HAVE ABNORMAL LUNG FUNCTION TEST RESULTS COMPARED TO NON-SMOKERS AS THEY GROW OLDER

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*Objective:* This study was carried out to find out the differences between the lung functions of smokers & non-smokers as they grow older.

*Method:* Lung function test results of smokers & non-smokers of two age ranges, from 21 to 40 years & 41 to 60 years, performed during 2013 were analyzed & evaluated. Sample size for each group was 214. *Results:* In Smokers aged 21 to 40 years, 70.10% of sample size was interpreted as normal lung function. In non-smokers from 21 to 40 years of age 81.8% of sample size was interpreted as normal lung function. For smokers aged 41 to 60 years, 57.48% of sample size was interpreted as normal lung function, whereas in non-smokers of age group 41 to 60 years, 73.40% of sample size was interpreted as normal lung function.

*Conclusion:*The results from the study of age group 21 to 40 years (both smokers & non-smokers), showed that occurrence of normal lung function test is 11.7% higher in non-smokers compare to smokers. As smokers grow older, occurrence of



normal lung function is reduced by 12.62%, i.e. from 70.10 % to 57.48%, this age group (41 to 60 years) significantly depicts the reduction in normal lung function test in smokers compared to non-smokers.

*Keywords:* Smoker, non-smoker, lung function result

## 12.16

### GLOBAL CHILD INJURY DISPARITIES

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*Introduction:* Injuries are a neglected cause of child mortality globally and the burden is unequally distributed in resource poor settings.

*Objective:* The aim of this study is to explore the share and distribution of child injury mortality across country economic levels and the correlation between country economic level and injuries.

*Methods:* All-cause and injury mortality rates per 100 000 were extracted for 187 countries for the 1-4 age group and under 5s from the Global Burden of Disease Study 2010. Countries were grouped into four economic levels. Gross domestic product (GDP) per capita was used to determine correlation with injury mortality.

*Results:* For all regions and country economic levels, the share of injuries in all-cause mortality was greater when considering the 1-4 age group than under 5s, ranging from 36.6% in Organization for Economic Cooperation and Development countries to 10.6% in Sub-Saharan Africa. Except for Sub-Saharan Africa, there is a graded association between country economic level and 1-4 injury mortality across regions, with all low-income countries having the highest rates. Except for the two regions with the highest overall injury mortality rates, there is a significant negative correlation between GDP and injury mortality in Latin America and the Caribbean, Eastern Europe/Central Asia, Asia East/South-East and Pacific and North Africa/Middle East.

*Conclusion:* Child injury mortality is unevenly distributed across regions and country economic level to the detriment of poorer countries. A significant negative correlation exists between GDP and injury in all regions, exception for the most resource poor where the burden of injuries is highest.

*Keywords:* injury, global, disability

## 12.17

### UNCOVERING THE BURDEN OF INTENTIONAL INJURIES AMONG CHILDREN IN THE EMERGENCY DEPARTMENT: A SURVEILLANCE STUDY FROM A DEVELOPING COUNTRY

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*Introduction:* In low-and middle-income countries, injuries are a leading cause of mortality in children. Much work has been done in the context of unintentional injuries and there is limited knowledge about intentional injuries among children.

*Objective:* The objective of this paper was to understand the characteristics of children and adolescents with intentional injuries presenting to emergency departments in Pakistan.

*Methods:* The data was from an active surveillance, Pakistan National Emergency Departments Surveillance (Pak-NEDS), conducted from November 2010 to March 2011 in seven major emergency departments of Pakistan. Data on 30,937 children below 18 years of age was collected. This paper reports frequency of intentional injuries for all children and compares patient demographics, nature of injury and discharge outcome for two categories of intentional injuries - self-inflicted injuries and assault.

*Results:* Around 41.8% of the 30,937 children (n=12,931) presented with injuries. The intent of injury was known for 69.4% (n=8,978); and of

these, 28.4% (n=2551) were intentional. In all, Intentional injuries presenting to the Emergency Department accounted for 8.2% (2551/30,937) amongst all other causes for children under 18 years. The boy to girl ratio was 2.9:1. Intentional injuries included self-inflicted injuries (n=872, 34.2%) and assault (n=1679, 65.8%). Among boys, the ratio of assaults to self-inflicted injuries is 2.2:1 and among girls it is 1.4: 1. Falls constituted the major mechanism of intentional injuries (n=120, 37.5%). Among girls, suicide is the second major cause of intentional injuries (21%).

*Conclusion:* Intentional injury is one of the reasons for seeking emergency treatment for children and a contributor to morbidity. It is an important yet neglected public health issue. Moreover, such injuries may be under-estimated due to lack of reporting and investigative resources. Early identification may be the first step leading to prevention.

*Keywords:* burden, intentional, children

## 12.18

### PREVALENCE AND PREDICTORS OF ASTHMA IN ADULT POPULATION OF KARACHI, PAKISTAN

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*Background:* An estimated 300 million people globally suffer from asthma and its burden is increasing globally, especially in developing countries. However, there is scarce data regarding community based assessment of burden of asthma and its predictors.

*Objectives:* To determine prevalence of asthma in adult population of Karachi, Pakistan, and its association with indoor air pollutants

*Methods:* A community based cross-sectional survey was conducted in Karachi from May 2014-February 2015 comprising of 1000 men and women aged  $\geq 18$  years selected through multi-stage cluster sampling. Out of 9600 clusters in Karachi, 75 were

randomly selected and from each cluster 15 households were randomly selected. All eligible members from each household were enrolled. Data was collected through the ATS respiratory questionnaire and spirometry while levels of indoor air pollutants were also measured.

*Results:* Preliminary findings show the prevalence of physician diagnosed asthma and asthma diagnosed on spirometry to be 2.5% and 3.8% respectively. Asthmatics were more likely to be males, smokers and those having high levels of indoor air pollutants in their households. High risk occupations for asthma include house maids, sweepers, drivers, and garment factory workers. The average levels in the households for indoor air pollutants include; NO<sub>2</sub>: 0.0036 ppm, CO: 1.688 ppm, formaldehyde: 0.142 ppm and PM<sub>2.5</sub>: 241 $\mu$ g/m<sup>3</sup>.

*Conclusion:* This study highlights high burden of asthma and suggests indoor air pollutants to be an important contributory factor. Information regarding predictors of asthma will be extremely important for the policy makers for developing preventive strategies in Pakistan and other developing countries.

*Keywords:* Asthma; Prevalence and predictors, adults; Pakistan, indoor air pollutants

## 12.20

### SOCIOECONOMIC AND ENVIRONMENTAL CONDITIONS IN A NORTHERN PAKISTANI VILLAGE

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*Introduction:* Oshikhandass is a rural valley located approximately 24 km southeast of Gilgit-Baltistan's capital Gilgit, where different practices of fueling for cooking, water and sanitation are in progress by

households with different socio-economic backgrounds.

*Objectives:* To determine environmental related practices and its relationship with socioeconomic indicators of current residents in Oshikhandass, Gilgit-Baltistan.

*Methods:* After NIH/AKU/KIU IRB approval and obtaining informed consent, trained Lady Health Workers and assistants supervised by social scientists conducted a socioeconomic survey from November 2nd, 2012 to June 27th, 2013. Data were entered in Microsoft Access® and analyzed using SPSS® (Ver.20).

*Results:* Of 947 total households, 906 were interviewed; 514/906 (56.7%) had children under age five. Most respondents were mothers. (492/514, 95.7%). The median household highest level of education was Class 12. Most houses were made of concrete blocks (47.8%) or stones (40.6%), 99.7% had electricity, 73.3% used local cook-stoves (Bhukari), 75.7% used wood as the primary fuel; median number of rooms per house was three. Toilets with septic-tanks (428/906, 47.2%) and pit latrines (206/906, 22.7%) were most common. Mostly (67%) had access to a water filtration plant. Almost half (408/906) considered their primary drinking water source as safe, remainder (113/498) were boiled their water while 96/498 let it settle. Median household income was Rs.22,000. Nearly all (96.9%) households had mobile phone(s), 74.4% a bank account, 73.1% a television, 40.7% a computer, 26.7% a refrigerator and 37.7% a motorized vehicle.

*Conclusion:* With high median household educational levels and availability of modern commodities, many residents have new sanitation practices and access to water filtration plants, but continue traditional cook-stove practices.

*Keywords:* Socioeconomic factors, sanitation, drinking water

## 12.21

### DESCRIPTION OF A COHORT OF ADOLESCENTS AND YOUNG ADULTS FROM OSHIKHANDASS VILLAGE, GILGIT, PAKISTAN: GROWTH AND EDUCATIONAL ATTAINMENT

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*Objectives:* To describe the health status, educational achievement, and socio-economic characteristics of a cohort of adolescents/young adults originating from Oshikhandass.

*Methods:* From 2012-2014, young adults and adolescents who were originally enrolled in a 1989-1996 surveillance study of children under age 5 were re-traced and individually interviewed by trained social scientists using questionnaires. Data were entered in Microsoft Access® and analyzed using SPSS® (Ver.20).

*Results:* Of the original cohort (1,857), 135 had died, 257 were unavailable, and 1465 (85.1% of those living) were interviewed. Of these 1465, 946 (64.6%) live in Oshikhandass, and 519 (35.4%) elsewhere in Pakistan. Median reported age was 20.1 years (11-28). 72% had normal BMI; 14.2% were underweight, 11.9% overweight and 1.8% obese. All but seven had normal blood pressure (median 113/76 mm Hg). Self-reports for current health status were excellent (9.6%), good/satisfactory (72.4%), and poor/very poor (18%). Headaches (26.2%) and general weakness (14.2%) were the most commonly cited reasons for poor health. 55.8% were currently full-time students, 14.2% had completed studies and were employed; median income was Rs. 13,000/month. 5.1% had completed studies but were unemployed and 13.3% were doing unpaid family work. Median educational level was Class 12 (range primary to MPhil/PhD). Almost half (44.3%) had repeated a class; almost all (97.2%) had taken a

class in English. Only 13 (0.8%) never attended school.

*Conclusion:* Most respondents reported that they were healthy, had normal blood pressure, and BMI; those underweight, overweight/obese or hypertensive need follow-up. Many are still students and have high educational achievement.

*Keywords:* Adolescent, Educational achievement, Socioeconomic factor

## 12.22

### VACCINE COVERAGE BY 12 MONTHS OF AGE IN A COHORT OF CHILDREN UNDER AGE FIVE IN RURAL NORTHERN PAKISTAN

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*Introduction:* Complete vaccination against preventable disease during the first year of life is a cost-effective public health intervention. Pakistan's Expanded Programme on Immunization provides WHO recommended antigens, including: BCG; diphtheria, pertussis, and tetanus [DPT]; oral polio vaccine [OPV]; and measles; however, vaccine coverage remains suboptimal.

*Objective:* To describe completeness of vaccine coverage by age 12 months among children enrolled in a cohort study (2012-2014) in Oshikhandass, Gilgit-Baltistan.

*Methods:* Field-workers visited enrolled households using vaccine cards, Lady Health Worker registers and verbal report to compile vaccination history. Data were analyzed using Stata® (12).

*Results:* Vaccination history at age 12 months was available for 80.5% of the 1,176 children enrolled in the study. Of these 947, 54.6% were fully vaccinated, 27.1% partially vaccinated, and 18.3% completely unvaccinated. Coverage was highest for BCG (80.3%) and the first dose of OPV (80.2%).

Only 24.5% received the first OPV dose within the first week of life, as recommended. By age 12 months, 67.3% had received four OPV doses. DPT vaccination rates for first, second and third doses were 77%, 76.2% and 73.4%, respectively. Only 63.1% of children received one dose of measles vaccine.

*Conclusion:* Prevalence of initial vaccine doses is higher compared to subsequent doses. However, complete and timely coverage by 12 months according to WHO guidelines remains suboptimal in Oshikhandass. Feedback to local health authorities on low coverage is required. Families with unimmunized and underimmunized children need to be identified and targeted by health workers so all children receive recommended vaccines according to schedule.

*Keywords:* Vaccination, Immunization, Immunization Schedule

## 12.23

### HEALTH RISK ASSESSMENT OF LEAD AND ARSENIC AMONG AND RURAL WOMEN: FOODS DUPLICATE STUDY

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*Background:* Exposure to lead (Pb) and arsenic (As) during pregnancy and early life adversely affect the neuropsychological development of the children. The exposure levels and the dose at which adverse health effects occur are not known for Pb and As in developing countries to set population based standards and policies.

*Objectives:* Health risk assessment for Pb and As among lactating mothers, newborns and young children (1-3 year old) by estimating provisional tolerable daily intake (PTDI) and provisional tolerable weekly intake (PTWI).

*Methods:* Total of 100 triplets comprising of mother, newborn and young child are being enrolled

, 50 from Karachi (urban) and 50 from Gambat (rural) sites in Sindh. Exposure assessment: The level of Pb and As from mother's blood, hair and nails, placenta and cord blood for the newborn, and child's blood. In addition, environmental samples of air, house dust and water, and food duplicate samples for 3 days is being collected.

*Outcome assessment:* Maternal and newborn DNA (CD 34 cells) will be extracted to assess changes in epigenes. Bayley's III assessment will be done for assessing child development.

*Conclusion:* Provisional Tolerable Weekly Intakes (PTWIs) and Provisional Tolerable Daily Intakes (PTDIs) recommended by the FAO/WHO Joint Expert Committee on Food Additives (JECFA) will be compared and standards and policies will be devised based on available information.

*Keywords:* heavy metals, health effects, epigenes

#### **12.24** ASSOCIATION OF SOCIO-DEMOGRAPHIC CHARACTERISTICS WITH PATTERN OF HEALTH SEEKING BEHAVIOR AMONG HEPATITIS C PATIENTS IN KARACHI, PAKISTAN

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*Objective:* The study aimed to identify the association between patients' socio-demographic characteristics and pattern of health seeking behavior among hepatitis C patients in Karachi, Pakistan. *Methodology:* A descriptive, cross-sectional study was conducted among 250 hepatitis C patients, who were recruited from the Aga Khan University Hospital and the Civil Hospital Karachi, Pakistan, between March and May 2013.

*Results:* The patterns of health seeking behavior showed that a majority of the study participants approached a doctor, followed by spiritual healers (dum) and a few participants approached traditional healers (hakim) and homeopaths. The study findings showed that there was a significant association

between participants' occupation and their first visit to spiritual healers ( $P=0.01$ ), their education and first visit to traditional healers ( $P=0.02$ ) and spiritual healers ( $P=0.006$ ). Moreover, significant association was identified between the participants' number of children and their second visit to doctors ( $P=0.007$ ). Similarly, a significant differences were identified between participants' family members belonging to the medicine field and their first visit to doctors ( $P=0.05$ ) and spiritual healers ( $P=0.05$ ).

*Conclusion:* The present study identified a significant association between patients' demographic characteristics and their choice of health care providers. The study establishes a need for proper counseling of patients and their families regarding the choice of health care providers at the time when patients are diagnosed with HCV infection. This study provides a basis for planning interventional studies aimed at testing interventions to improve patients' health seeking behaviors.

*Keywords:* health seeking behavior, hepatitis C, demographic characteristics

#### **12.25** DETERMINANTS OF MATERNAL TETANUS VACCINATION IN PAKISTAN: ANALYSIS OF PAKISTAN DEMOGRAPHIC HEALTH SURVEY DATA 2012-2013

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*Background:* Maternal and neonatal tetanus is preventable cause of maternal and child mortality in many developing countries. Maternal tetanus immunization has resulted in 94% reduction in mortality due to neonatal tetanus.

*Objective:* To determine the factors affecting maternal tetanus vaccination in Pakistan using Pakistan demographic health survey 2012.

*Methodology:* This study utilized the data from Pakistan Demographic and Health Survey 2012-13. Ever married women of reproductive age (15-49 years) with a live birth in the five years preceding the Survey ( $n=7109$ ) were included in the analysis.

Multivariate logistic regression was done to see the association of complete maternal tetanus vaccination with various factors and adjusted odds ratios with 95% confidence interval were calculated. *Results:* Among 7109, 56.4% women received two or more TT shots whereas 43.6% had either less than two TT shots or not vaccinated. The mean age of the women is  $36.6 \pm 7.6$  years. Women with no education were 75% less likely to receive two doses of TT compare to women with primary or higher education aOR 0.25 (95% CI: 0.20-0.32). Women with more than 5 children were 35% less likely to get TT than women with children less than 5 aOR 0.65 (95% CI: 0.55-0.76). Comparing to richest, poorest women were 72% less likely to receive vaccination aOR 0.28 (95% CI: 0.22-0.36). Comparing to Islamabad, women in other provinces are less likely to get TT vaccination. *Conclusion:* Overall the vaccination coverage is low in Pakistan. Significant improvement in newborn survival could be achieved through addressing women education, providing accessible services across all the provinces.

*Keywords:* Maternal tetanus vaccination, Neonatal Tetanus, Pakistan, Determinants

## 12.26 TOBACCO CONTROL LAWS IN PAKISTAN AND THEIR IMPLEMENTATION

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*Introduction:* In order to limit the high prevalence of tobacco use in Pakistan various tobacco control laws have been implemented. *Objective:* The objective of this study was to assess the implementation of these laws in the largest city of Pakistan, Karachi. *Materials and methods:* A cross-sectional study was conducted in Karachi. The implementation of tobacco control laws in 'smoke-free' places, the adherence of tobacco companies to these laws, the regulation of cigarette sale, and the awareness and

views of the general public regarding tobacco control laws were assessed via direct observation by visits and through self-administered questionnaires. *Results:* The implementation of tobacco control laws in 'smoke-free' public places was found to be poor. Only 62% of the brands displayed pictorial warnings on their packs. 8% of the brands were available in two different kinds of packs, both with and without pictorial warnings. Cigarette sale to minors was taking place at 85% of the visited cigarette outlets. 53% of the outlets displayed cigarette advertisements in the form of posters. 40% of the persons questioned had awareness regarding the existence of ban on smoking in public places and 90% of these were in favour of it. *Conclusion:* The implementation of tobacco control law in Pakistan is poor. Non adherence to the law in public places was alarmingly high. Also, the study demonstrates the poor compliance to the tobacco control laws by tobacco companies. The sale of cigarettes is almost unregulated.

*Keywords:* Tobacco control laws, compliance, Karachi

## 12.27 AUDIT TO DETERMINE TECHNICAL QUALITY OF PORTABLE CHEST X-RAYS.

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*Purpose:* TO assess the quality of ICU, ER, CICU and CCU chest radiographs. *Methodology:* Retrospective review of chest images on computed radiography (CR) was performed In AKUH department of radiology. Study included 109 portable chest radiograph performed in ICU, CICU, ER and CCU department. Unstable patients were included. Radiographs were performed in sitting and supine position. *Results:* 109 radiographs assessed in which 57% were males and 48% females. Patients with the age range between 1 to 90 yrs. were included. 68% of

radiographs were performed in supine position where as 32% were in sitting position in critical care units and emergency department. Proper tube angulation was in 50%, hypo angulation in 12% and hyper angulation in 33 %. 54% rotation was noticed. Repetition rate was observed in 2% of radiographs. External artifacts were present in 71% including leads and tubes. 31% of radiographs were proper collimated. Marker was properly placed in 64%.

*Conclusion:* Low repetition rate were observed. Over the entire, exposure factor remains the best parameter while the tube angulations and positioning showed poor results. Hence radiographers need extensive training to carry out portable exams to yield good results and better patient care.

*Keywords:* Portable chest, Collimation of chest x-ray, Quality of portable chest X-Ray

## 12.28

### SELF-MEDICATION WITH ANTIBIOTICS AMONG NON-MEDICAL UNIVERSITY STUDENTS OF KARACHI: A CROSS-SECTIONAL STUDY

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*Background:* The prevalence of self-medication with antibiotics is quite high in developing countries as opposed to developed countries. Antibiotics are often taken erroneously for certain ailments, without having the appropriate knowledge of their use. This carries potential risks for the individual as well as the community, in form of several side effects such as antibiotic resistance. Therefore, the prevalence of self-medicated antibiotics in developing countries needs to be studied.

*Objectives:* to assess the prevalence of self-medicated antibiotics, assess the factors leading to their administration and determine the knowledge of

adverse effects of the use of self medicated antibiotics among the non-medical university students of Karachi, Pakistan.

*Methods:* A descriptive cross-sectional study was carried out at six different non-medical universities of Karachi. 431 students were included in the study. Data was collected using self-administered questionnaires and analyzed using SPSS version 19. *Results:* 50.1% students reported having self-medicated themselves in the past 6 months and 205 (47.6%) reported self-medication with antibiotics. Amoxicillin was the most self-prescribed antibiotic (41.4%). Awareness of the adverse effects of antibiotics was demonstrated by 77.3% of the students and sleep disturbance was the most commonly known (46.5%) side effect. 63.1% denied having any knowledge about antibiotic resistance and only 19.9% correctly knew that indiscriminate use of antibiotics can lead to increased antibiotic resistance.

*Conclusion:* The prevalence of self-medication with antibiotics among the non-medical university students was high despite the awareness of adverse effects. Antibiotic resistance was a relatively unknown terminology.

*Keywords:* Self-medication, Antibiotics, Antibiotics resistance

## 12.29

### DETERMINANTS OF ANTENATAL CARE UTILIZATION IN PAKISTAN: SECONDARY DATA ANALYSIS OF PAKISTAN DEMOGRAPHIC HEALTH SURVEY DATA 2012-2013

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*Background:* Antenatal Care (ANC) utilization is associated with better maternal newborn and child health. Around 74% of maternal deaths can be averted if all women have access to maternal health care services.

**Objective:** To determine the factors affecting antenatal care utilization in Pakistan using Pakistan demographic health survey 2012.

**Methodology:** This is a secondary data analysis on data from 2012-13 Pakistan Demographic and Health Survey (PDHS). Data of 7443 ever married women of reproductive age (15-49 years) with a live birth in five years preceding the Survey was analyzed. Based on Andersen's model, a conceptual framework was developed to examine predisposing and enabling factors affecting ANC utilization at individual and system level. Chi square and t-test were used to compare socio-demographic characteristics and multivariate logistic regression was done to calculate Odds ratio (OR) with 95% confidence interval (CI).

**Results:** Only 37% women had recommended 4 ANC visits. Most important predisposing factors for ANC utilization are women education (aOR: 3.62, 95% CI: 2.86-4.59), husbands education (aOR: 1.25, 95% CI: 1.03-1.52), having first child (aOR: 5.87, 95% CI: 4.47-7.69). Living in urban areas (aOR: 3.20, 95% CI: 2.90-3.52), wealthiest health quintile (aOR: 1.25, 95% CI: 1.03-1.52) enabled females for ANC utilization. Women in Balochistan were less likely to utilize ANC. (adj.OR: 0.14, 95% CI: 0.10-0.19). **Conclusion:** This is the first study focusing on ANC utilization on a nationally representative data. ANC utilization is low in Pakistan. Significant improvement can be achieved through addressing education and providing accessible services across all the provinces.

**Keywords:** Antenatal Care, enabling and predisposing factors, Pakistan

### 12.30 PERCEPTIONS AND ATTITUDE OF THE ADULT POPULATION OF KARACHI REGARDING BIRTH DEFECTS

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**Introduction:** According to World Health Organization(WHO) birth defects occur approximately in 1 in 33 infants and result in approximately 3.2 million birth defect related disabilities every year. In developing countries, various factors influence attitudes towards prenatal diagnosis and the treatment of a birth defect.

**Methods:** A cross sectional study was conducted using a pre-designed, self-administered, informed consent questionnaire using a sample size of 424. The questionnaire outlined the socio-demographic features, knowledge, perception and attitude towards birth defects and the possible courses of action in case of a birth defect.

**Results:** 72.9% of participants believed that the diagnosis of a birth defect could be made prenatally with ultra sound (64.4%) being the most widely-preferred diagnostic modality. Around 80% stated that they would continue the pregnancy in case of a prenatal diagnosis of a birth defect, while only 20.3% opted for termination. Religion (49.1%) was quoted as the single most important factor influencing their decision. However, 71% of the respondents believed that termination of pregnancy should be carried out in case of a lethal birth defect.

**Conclusion:** Participants generally perceived birth defects as both mental and physical disability. The socio-demographic profile of the participants affected their level of awareness regarding birth defects and prenatal testing. The course of action towards birth defects seems to be influenced by religious beliefs of the participants.

**Keywords:** prenatal testing, abortion, Karachi



### 12.31 PREVENTION OF CHILD ABUSE IN COMMUNITIES: FOREMOST STEP TOWARDS CHILDREN'S BRIGHT FUTURE

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*Introduction:* Childhood is the most precious stage of one's life. It is the phase which helps in shaping one's personality, values, beliefs, and identity. Pakistan Pediatric Association Child Right's Group defined Child abuse as "any act of commission or omission that endangers or impairs a child's physical/psychological health and development (Hyder, & Malik, 2007).

*Objective:* A literature review aims to establish a significance child abuse prevention in community.

*Methodology:* A comprehensive literature review was done including 15 studies from 2005 to date, using various scientific database and search engines.

*Findings:* Child abuse has become a global issue due to poor socioeconomic conditions, health and education services. Specifically, the reported annual incidence violence against children ranged from 1.57 to 3.18 per 100,000 for Pakistan (Hyder, & Malik, 2007). Moreover, suicide, obesity, smoking, alcoholism, drug abuse, depression, eating disorders, sexual promiscuity, and certain chronic diseases are some adverse health effects on children who experience maltreatment throughout their lives (Smith, & Segal, 2013).

*Recommendations:* We should teach parents and family members during home visits and meetings that children exhibit in their lives what they learn from their environment such as violence and verbal abuse. Schools and other institutions also play a pivotal role in preventing and minimizing child abuse, if they are aware of the signs of abuse as the child can become a victim both by parents or teachers. These signs if manifested, the child should not be ignored and should be reported promptly (WHO, 2006).

*Keywords:* Children, Abuse, Community

### 12.32 PREVENTION OF PERTUSSIS IN YOUNG- INFANTS (PREPY): A PROSPECTIVE, COMMUNITY BASED SURVEILLANCE STUDY IN PAKISTAN

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*Introduction:* Globally, an estimated 16 million pertussis cases occur every year and almost all (>95%) in developing countries. Despite routine childhood vaccination against pertussis for more than six decades, it remains endemic worldwide. Infants too young to be completely vaccinated are at high risk of acquiring disease.

*Objectives:* The aim of this study is to estimate the incidence of pertussis among infants in the first 18 weeks of life and to evaluate a modified version of the Preziosi scale of pertussis severity to classify pertussis severity (i.e. mild, moderate, severe disease) among infants.

*Methodology:* The study incorporates evaluations of both – a closed, longitudinal and an open – cohorts and is being conducted in four low-income settlements of Karachi. In open cohort, a total of 1,175 randomly selected infants, aged between zero day and 10 weeks, will be enrolled and followed up till 18 weeks of age or through the end of the study period. In closed cohort, a total of 200 randomly selected pregnant women, aged between 16 and 40 years old on or after 27 weeks gestation, will be enrolled. Infant follow-up will begin at birth and continue through 18 weeks of age. However, in closed cohort, blood specimens will be collected from enrolled women within 72 hours of delivery and from infants at birth, 6th and 18th weeks of age for serologic analysis. Similarly, enrolled women will also be asked to provide samples of breastmilk at birth, 6th, 10th, 14th and 18th weeks after delivery for evaluation of pertussis-specific antibodies and pertussis-specific plasmablasts. A standardized syndromic screening definition will be used to identify the suspected pertussis cases among infants. The nasopharyngeal swabs, including 3 mL blood sample for CBC analysis for the first time, will be obtained from all the infants who meet

syndromic screening definition in both cohorts and tested by PCR for laboratory confirmation of B. pertussis infection.

*Results:* This study is a work in progress.

*Conclusion And Recommendations:* This study is a work in progress. The results of study will help to identify the burden of pertussis in young infants in semi urban areas of Karachi, Pakistan.

*Keywords:* Pertussis, Infants, Karachi

### 12.33

#### SUBCLINICAL LEAD TOXICITY: A SILENT EPIDEMIC

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*Purpose:* Lead toxicity understanding has advanced considerably over the past years. In 1991, the Centers for Disease Control and Prevention (CDC) redefined elevated blood lead levels (BLL) from > 25µg/dL to > 10µg/dl, which in 2013 further lowered to 5µg/dl based on National Health and Nutrition Examination Survey and recommend universal screening of children. The levels were redefined because even low BLL can cause to IQ loss, peripheral arterial risk, hypertension and cardiovascular risk. In Pakistan, laboratories are still using >10ug/dl for lead toxicity eliminating patients at risk of increased morbidity and mortality due subclinical lead toxicity.

*Objective:* This study is designed to determine the burden of subclinical lead poisoning in our population. *Materials and Methods:* An observational study, conducted at Section of Chemical Pathology, Department of Pathology and Microbiology, AKU. Analysis of laboratory data of patients tested for plasma lead from 1st January 2012 to October 2014 was done. The cutoffs used for subclinical and toxic lead levels were, ≤5ug/dl, 5-10ug/dl and >10ug/dl. The data was analyzed using SPSS version 19. *Results:* Total 499 subjects were tested for BLL over the period of 34 months. Mean age of the study subjects was 26 yrs, majority

were adults (adults 69% vs children 31%). The mean BLL were 15.9ug/dl. The distribution of blood levels was 43%, 21%, 36% with mean levels of 2.8ug/dl, 7ug/dl, 37ug/dl for 10ug/dl BLL respectively. Blood lead levels were consistently higher for adults than for children. *Conclusion:* One third of the persons tested had high BLL; these are high enough to be of health concern. Also evident was that only one third of the tested population was children. It was also observed that one fifth of the persons tested had levels 5-10ug/dl consistent with subclinical lead toxicity. In conclusion laboratories should update there BLL cutoffs according to CDC recommendations, shifting focus to primary prevention of lead toxicity than merely eliminating lead toxicity.

*Keywords:* Lead, lead toxicity, subclinical lead poisoning

### 12.34

#### DISTRIBUTION OF ZINC DEFICIENCY IN A TERTIARY CARE HOSPITAL

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*Background and Objective:* During the past four decades, zinc (Zn) deficiency has emerged as a noteworthy cause of growth retardation and male hypogonadism in the adolescents, in elderly Alzheimer's disease, osteoporosis, cardiovascular diseases and decreased immunity in all age groups which in turn causes diarrhea, emotional disorder, weight loss and intercurrent infections due to cell mediated immune dysfunctions. Adolescents and children are especially prone to Zn deficiency due to increased growth rate so increased need. This study was done to determine the frequency of plasma zinc deficiency in subjects being tested at AKUH laboratory

*Methods and Materials:* This cross sectional survey was done at Section of Chemical Pathology, Department of Pathology and Microbiology of Aga Khan Hospital Karachi. The laboratory data of

plasma Zn was extracted from laboratory integrated systems from Jan 2013 to Nov 2014. Plasma Zn was determined by atomic absorption spectrometry, using cut off 50-150ug/dl for reporting low or high Zn levels.

*Results:* Total 469 subjects were tested for plasma Zn levels over the period of 23 months. Only 10 patients were inpatients rest were outpatients. Mean age of subjects was 24±21yrs and 36.6% were female. Mean plasma Zn levels of the total subjects were 105±42ug/dl. Out of the total subjects 3.8% had Zn deficiency (Mean Zn 40±6 ug/dl). Optimal Zn levels were seen in 83.7% subjects (Mean Zn 97±26 ug/dl) and 12% had higher than optimal levels (Mean Zn 186±40 ug/dl). Zn Deficiency was also observed in children and adolescents subjects (n=18) (Mean age 19±18yrs).

*Conclusion:* Nearly 5 % of subjects had Zn deficiency and deficiency is more common in children and adolescents. These findings suggest that Zn deficiency is not uncommon in our population, necessitating that plasma Zn should be performed and replenished accordingly while managing children with low immunity, growth retardation or intercurrent infections

*Keywords:* zn deficiency, growth retardation, intercurrent infections

### 12.35

#### DETERMINANTS OF DOMESTIC VIOLENCE IN PAKISTAN: PAKISTAN DEMOGRAPHIC HEALTH SURVEY 2012-2013

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*Background:* Pakistan ranks 133 out of 135 countries on the Gender Equality Index. In our country poverty, illiteracy and social taboos are considered the main reasons for domestic violence.

*Objective:* To determine the factors associated with domestic violence in Pakistan

*Methods:* Pakistan Demographic and Health survey (PDHS) 2012-2013 is a representative population based random cluster survey. An ever-married woman age 15-49 was selected randomly for domestic violence questionnaire administration. Spousal violence was measured in more detail. For physical violence, variable of “Push you, shake you, or throw something at you” and for emotional violence, “husband jealous when you talk to other men” were taken as outcome variable. Women empowerment included variables like access to and control over cash earnings, participation in household decisionmaking, and decision about visiting relatives.

*Results:* Those household where wife alone or husband and wife together take decisions about healthcare, large household purchase, visiting family and relatives and decision about earning, prevalence of domestic violence is less as compared to those where husband alone or elders are making decisions (p-value<0.001).

*Discussion:* According to PDHS 2012-2013, prevalence of domestic violence is 32% and it is more in poorest household. Physical or emotional violence is more common in KPK than other regions of country where. Violence was more common in women with no education.

*Conclusion:* There is need of integrated approach involving policy makers, education department, religious and societal leaders, NGOs, police department and people from other similar groups to reduce high prevalence of domestic violence.

*Keywords:* PDHS 2012-2013, women, domestic violence

### 12.36

#### EHEALTH IN PAKISTAN: HOW WAS THE JOURNEY

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*Introduction:* eHealth is the use of information and communication technologies (ICT) to exchange information for diagnosis, treatment and prevention of diseases. (WHO 2009) There are many terms used under the umbrella of eHealth depends upon the health specialty or ICT devices. These include telehealth, mHealth, telemedicine etc Telemedicine is subdivided into defined fields according to specialty e.g. telepathology, telecardiology, teledermatology, telepsychiatry etc

*Objective:* Document the history of eHealth activities in Paksitan. • Identify the projects using eHelath as medium of health service delivery in Pakistan.

*Methods:* This paper is compiled by desk review on July–September 2014.

*Results:* Commission on Science and Technology for Sustainable Development (COMSATS) establish telemedicine projects in multiple cities from 2001 to 2011. Tele medicine was used for consultation in earth quake in 2005. Aman Foundation has Telehealth and leading the Health Helpline operations since November 2010. Telepsychiatry services are initiated in April 2014 in Gilgit Baltistan by Aga Khan Development Network eHealth Resource Centre (AKDN eHRC). Maternal and Child Health integrated program (MCHIP) also uses mHealth technology in Sindh to achieve maternal, newborn and child health (MNCH) outcomes.

*Conclusion:* The history of eHelath starts from 1990 onwards in the form of small projects and initiatives of organizations, Public Private Partnership, and Donor agencies. eHealth can play vital role in connecting remote areas to cities for specialized consultations. Currently there is no Public Sector eHealth program in any province in Pakistan. Provinces can implement eHelath services at provincial level in near future. This needs significant evidence in cultural and regional context.

eHealth projects which are currently active in country should put special emphasis to study feasibility, cost effectiveness, sustainability and acceptability of services.

*Keywords:* eHealth, mHelath, telemedicine

### 12.37

#### INCIDENTAL MEDIASTINAL ADENOPATHY IN ASYMPTOMATIC PATIENTS OBTAINING CHEST X-RAYS FOR IMMIGRATION OR INSURANCE PURPOSES AND VATS BIOPSY

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We present a case series of 29 otherwise healthy patients who had routine chest Xray as a pre-requisite for immigration or for insurance. All these patients had mediastinal adenopathy which was confirmed on chest CT Scan. VATS biopsy was performed on all of them. 25 patients were found to have granulomatous inflammation secondary to TB, 3 had sarcoidosis and one had low grade lymphoma. All patients were then referred to specialist consultants and treatment was instituted.

*Keywords:* VATS, adenopathy, incidental

### 12.38

#### PREVALENCE OF TOBACCO USE AMONG WOMEN: A CROSS SECTIONAL SURVEY FROM A SQUATTER SETTLEMENT OF KARACHI, PAKISTAN.

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*Background:* While the prevalence of tobacco use has been slowly declining in the developed countries over the past 20 years, it has been steadily increasing in developing countries especially in

women. This has led to a rapid rise in lung diseases among women.

*Objective:* To determine the prevalence of tobacco use (both smoking and smokeless tobacco) among women in an urban squatter settlement in Karachi, Pakistan.

*Methods:* A cross-sectional survey was conducted from 1st July 2012 to 31 December 2012 on near 19,325 females of aged 15 - 80 years in Orangi Town, an urban squatter settlement in Karachi, Pakistan. The approximate population is near 2 million. A total of 16,987 women responded. Modified questionnaire, developed by WHO, was used in Urdu.

*Results:* The mean age was  $37.3 \pm 9.8$  years and 15,255 (89.80%) were married. 9143 (53.82%) admitted that at least one person uses tobacco in some form in their homes. The prevalence of smokeless tobacco use was 42.25% while cigarette smoking was 2093 (12.32%) among women. Among smokers 1789 (85.47%) admitted that they have tried to quit smoking during last 12 months but failed and 1658 (79.21%) mentioned that they have received their doctor advice for quitting. Almost all smokers mentioned that they think of quitting after seeing warning on cigarette pack. 99.5 % promise to quite this habit during interview.

*Conclusion:* Tobacco use among women in an urban squatter settlement is very high and alarming. Preventive and control measures against tobacco use are required in these communities

## **Renal/Urology**

### 13.2 ROLE OF MUSCARINIC G-PROTEIN COUPLED RECEPTOR (GPCR) IN PROSTATE CANCER GROWTH AND SURVIVAL

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**Introduction:** Despite advances in early detection and treatment, prostate cancer (PCa) remains one of the most frequently diagnosed cancers and a leading cause of cancer death in males worldwide. Much work has been done on androgen receptors in relation to proliferation and survival, and it has been shown that cancers of this organ usually turn androgen insensitive and resistant to therapy. There has been very little, if any, work done on the precise contribution of cell surface muscarinic M1 GPCR in PCa growth. **Objective:** Here we determined the expression of M1 muscarinic receptors on PCa tissue and cell lines and explored the role of the M1 receptor in prostate cancer cell growth and proliferation.

**Methodology:** The expression of the M1 receptor in PCa cell lines (PC-3), (LNCaP) and tissue was demonstrated using human anti-M1 receptor antibody. The effects of agonists and antagonist were done by performing growth assays.

**Results:** The immunostaining with CHRM1 antibody showed cell surface and cytoplasmic positivity for CHRM1 receptors. The treatment of PC-3 cells with selective M1 receptor antagonists, Pirenzepine as well as Dicyclomine, exhibited anti-proliferative effects, while M1 receptor agonist, Pilocarpine exhibited increased proliferation compared with the untreated cells.

**Conclusions:** Further studies will dissect molecular pathways to determine the role of the M1 receptor in androgen sensitive and androgen insensitive PCa cell growth and proliferation. The results of this work may help inform public health and clinical interventions for PCa by providing insights into the biology of prostate cancer progression.

**Keywords:** Prostate cancer, M1 receptors, anticholinergic

### 13.3 FREQUENCY AND MOST COMMON SITE OF UROLITHIASIS DIAGNOSED ON PLAIN CT KIDNEY, URETER AND BLADDER (KUB)

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**Study Design:** Observational retrospective study.

**Objective:** The objective of this study is to determine the frequency of urolithiasis based on gender, age group and most common site of Urolithiasis on helical CT kidney, ureter and bladder in suspected population.

**Methodology:** 100 reports of multiple unenhanced axial CT (KUB) were examined through PACS, which was performed during period of March 2013 to April-2013, conducted at Radiology Department of Aga Khan University Hospital Karachi. Patient with age group of 11yrs to 80 years with flank pain were included. Patient with prior history of surgery were excluded. Obtained data was further divided in to site and status of renal and ureteric calculi.

**Results:** Result shows that 56% patients have urolithiasis. Unilateral renal calculi were found in (66%). Frequency of calculi were high in lower pole calyx 13% and at ureterovesical junction (19%). Majority of calculi, 71.4% were non-obstructing; Percentage of urolithiasis was commonly seen in young male population (66%).

**Conclusion:** This study concluded that the rate of urolithiasis has become very high in young male patients with the history of flank pain. Large numbers of non-obstructing calculi were also detected on helical unenhanced axial non contract CT (KUB).

**Keywords:** Urolithiasis, CT KUB, Renal stone

### 13.4 IS HEMATURIA GOOD PREDICTOR OF UROLITHIASIS? : EVALUATION OF UROLITHIATIC PATIENTS ON CT AND ITS ASSOCIATION WITH URINALYSIS (HEMATURIA)

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*Study Purpose:* To determine the descriptive characteristics of cases presenting with urolithiasis, associated with urinalysis.

*Study Design:* Retrospective study.

*Material/Methods:* 56 patients with urolithiasis were studied; who also underwent microscopic urinalysis .study was conducted at Aga Khan University Hospital Karachi in the department of radiology. Flank pain was the predominant symptom. Microscopic and macroscopic hematuria both findings were included.

*Result:* According to gender, Males had high ratio of urolithiasis (66%) as compared to females (34%). People with age range of 21 to 30 were more found(29%). In urinalysis hematuria was present in 95% of patient. Furthermore Percentages of kidney stones were high (57%) and 43% ureteric stones were found. In which of them (34%) was obstructing stones and (66%) non -Obstructing stones were found. *Conclusion:* This Study demonstrates that the Pain related to hematuria considered to be a positive predictor for presence of urolithiasis. Prospect of non-obstructive-nephrolithiasis, is high as compare to ureteric stones. Hematuria does not correlate with degree of obstruction.

*Keywords:* Urolithiasis, Hematuria, CT KUB

### 13.5 ROLE OF CEPHALOSPORIN IN POST-RENAL TRANSPLANT PATIENTS

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*Case report:* A 43 years old male with a history of renal transplant 3 months back presented with non-specific symptoms fever, nausea, breathlessness and ghabrahat. Further assessment revealed history of stiffness, jerky movements and loss of consciousness. Later this patient deteriorated and eventually was taken on ventilator.

*Introduction:* Cephalosporin is 3rd generation beta-lactam antibiotics used to treat and prevent wide-range of bacterial infections.

*Discussion:* Cephalosporin toxicity is the major complication in patients with prior neurologic disorders, renal insufficiencies and older aged population. The neuro-toxic symptoms can range from seizures, status epilepticus to coma due to high creatinine levels.

*Conclusion:* Literature suggests that toxic levels should be monitored for long term prophylaxis treatment for post-renal transplant patients. Researches show that patients are more prone to face neurological symptoms if reached the toxic levels and these can be prevented.

*Keywords:* Post-Renal Transplant, Cephalosporin Toxicity, Neuro toxic symptoms

### 13.6 UTILITY OF HLA SINGLE ANTIGEN BEAD ASSAYS (SAB) IN KIDNEY TRANSPLANT

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*Introduction:* Alloantibodies present in serum of recipient represent a panel of antibodies which may have a broad range of cross reactivity against different epitopes. Anti-Human Leucocyte Antigen (HLA) antibodies to HLA antigens in patient's



serum may react with cells of the donor depending on the specificity of the antibody. The presence of donor specific antibodies (DSA) in recipients has been correlated with allograft reactions. To determine the presence of DSA, the specificity of HLA antibodies in the recipient are determined and these are then correlated with the HLA type of the donor.

*Method:* Single recombinant HLA Class I and II antigens coupled to micro particles are used to determine the HLA specificity of broadly reactive sera or sera with undefined specificity. The beads are analyzed on a Luminex instrument, which measures the intensity of the fluorescent signal from the secondary antibody. Luminex test reports indicate the HLA epitope specificity of the antibodies. This data compared with the HLA typing information of the donor will be used to determine whether or not the antibodies present in the recipient are donor specific.

*Result:* Through testing recipient sera using the Single bead antigen assay it is possible to determine the presence of antibodies reactive against both HLA Class I and Class II molecules. We have performed this testing for potential kidney transplant recipients and determined the presence of DSA. In this study, examples of DSA determination will be provided for different patient samples.

*Conclusion:* Monitoring of DSA through Luminex based SAB assays also are a sensitive method for monitoring changes in recipient DSA pre- and post-transplantation. This can allow appropriate patient management and reduce the risk of allogenic graft rejection.

*Keywords:* HLA, kidney transplant, DSA

### 13.7 COMPLICATIONS AND EFFICACY OF PERCUTANEOUS RENAL BIOPSY OF NATIVE KIDNEYS: A 10-YEAR EXPERIENCE AT A TERTIARY CARE HOSPITAL IN PAKISTAN

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*Background:* The use of an automated biopsy device and real-time ultrasound (current technology) for percutaneous renal biopsies (PRBs) has improved the likelihood of obtaining adequate tissue for diagnosis and has reduced the complications associated with renal biopsies.

Our objective was to evaluate the diagnostic efficiency and safety of the current PRB procedure and identify possible risk factors for the development of major complications.

*Method:* It was a retrospective file-based review of cases who underwent percutaneous renal biopsy of native kidney between March 2003 and March 2012 at the Aga Khan University Hospital (AKUH) in Karachi, Pakistan. These biopsies were performed by trained nephrologists or interventional radiologists using an automated PRB device with a 16/18 gauge needle under real time ultrasound. The following data were obtained: age, gender, clinical and histopathological diagnosis, complications associated with the procedure (minor: hematuria, local infections, hematoma; major: transfusions, severe infections, surgery, nephrectomy, arteriography, embolism and death. Efficiency of the procedure was based on the number of glomeruli obtained. Patients having major complications were compared with the rest of the population (minor or no complications). Prior to the procedure coagulation profile was done in all the patients. All patients were kept on strict bed rest for at least 6-hours post-procedure.

*Results:* Out of 623 biopsies carried out during the study period, 373 fulfilled the inclusion criteria and were included. Mean age was  $40.5 \pm 15.8$  years. There were 213 males (57.1%) and 160 females (42.9%). Adequate tissue for histologic diagnosis was obtained in 318 patients (85.3%). A glomerular

yield of less than five glomeruli was seen in only 7.8% while no glomeruli could be obtained in 3.8% cases. The overall complication rate was 12.6% and these complications were observed within 6 hours of biopsy. 22 patients minor hematoma, 6 patients major hematoma, 16 patients hematuria and 3 patients had prolonged hospital stay. No late complications were seen.

*Conclusion:* PRB under real-time ultra-sound guidance is a safe and efficacious procedure to establish the histological diagnosis of the renal disease and may be done as an out-patient procedure. A post-biopsy observation time of 6 hours appears to be optimal.

*Keywords:* Renal biopsy, complications, native kidneys, efficacy

### 13.8

EFFICACY OF 25 (OH) VITAMIN D SUPPLEMENTATION AND PHYSICAL ACTIVITY IN IMPROVING MUSCULOSKELETAL HEALTH IN INDIVIDUALS WITH CHRONIC KIDNEY DISEASE (CKD). A MULTICENTER RANDOMIZED, CONTROLLED TRIAL.

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*Aims:* We investigated the role of vitamin D (VD) and targeted physical activity in improving musculoskeletal health among chronic kidney diseases (CKD) patients.

*Methods:* An open-label, randomized controlled trial of VD replacement in stage 2-4 CKD patients, attending two nephrology clinics of Karachi, Pakistan was undertaken. 2637 subjects were contacted, 115 found to be deficient for 25 hydroxy vitamin D (25 OHD) levels were block randomized to either 4000 IU of daily oral vitamin D3 (cholecalciferol) or combination of daily drops along with targeted physical therapy for three

months. A predesigned questionnaire along with IPAQ was administered to assess the physical activity. Baseline biochemical testing for calcium, Phosphate, bone alkaline phosphatase, iPTH were performed. Musculoskeletal health was assessed by trained physical therapist by measuring bicep strength, back flexibility and fat composition and hand grip assessment. The outcome was improvement in musculoskeletal health to be assessed by plasma iPTH, calcium, bone specific alkaline phosphatase and hand grip strength assessment and improvement in serum 25OHD levels. Analysis was by intention to treat.

*Findings:* Of the 115 VD deficient subjects enrolled at baseline, 42 were lost to follow-up (47% in vitamin D alone versus 52% in vitamin along with physical activity group). The mean 25OHD level at the baseline was comparable in both the arms. At follow-up, 25OHD status was  $85.0 \pm 8.9$  nmol/liter in the VD group and  $95.8 \pm 6.6$  nmol/liter in VD along with physical activity group. There was significant improvement in the musculoskeletal health in the second arm compared to VD alone as well as within the group improvement ( $p$  value  $\leq 0.03$ ).

*Conclusion:* Treatment with both VD and targeted physical activity was found to be effective for improving musculoskeletal health (strength, muscle force, or power) in CKD patients.

### 13.9

PREDICTORS OF HOSPITAL STAY IN DENGUE VIRUS INFECTION-EXPERIENCE FROM AGA KHAN UNIVERSITY HOSPITAL PAKISTAN

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*Background:* Dengue virus infection (DVI) is very common infection. There is scarcity of data on factor associated with increased hospital stay in dengue virus infection (DVI).

*Objectives:* This study was done to know about factors associated with increased hospital stay and mortality in patients admitted with DVI.

**Methods:** We retrospectively reviewed medical records of patients aged  $\geq 14$  years hospitalized with a primary diagnosis of DVI at Aga Khan University Hospital Karachi between January 2008 and December 2010. Binary logistic regression models were constructed to identify factors associated with increased hospital stay. Similar factors associated with mortality were also analyzed.

**Results:** Out of 532 patients, two third (72.6%) had stay  $\leq 3$  days while one third (27.4%) had stay greater than 3 days. The mean length of hospital stay was  $3.46 \pm 3.45$  days. Factors associated with increased hospital stay ( $> 3$  days) included AKI (acute kidney injury) (Odd ratio 2.98; 95% CI 1.66-5.34), prolonged prothrombin time (Odd ratio 2.03; 95% CI 1.07-3.84), prolonged activated partial thromboplastin time (aPTT) (Odd ratio 1.80; CI 95% 1.15-2.83) and increased age of  $> 41.10$  years (Odd ratio 1.03; CI 95% 1.01-1.04). Mortality was 1.5%. High mortality was found in those with AKI ( $P < 0.01$ ), dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS) ( $P < 0.001$ ), respiratory failure ( $P 0.01$ ), prolong PT ( $P 0.001$ ), prolong aPTT ( $P 0.01$ ) and those who had increased hospital stay ( $P 0.04$ ).

**Conclusion:** Increasing age, coagulopathy and acute kidney injury in patients with DVI is associated with increased hospital stay. Mortality was more in patients with AKI, DHF and DSS, respiratory failure, coagulopathy and these patients had more prolonged hospitalization.

**Keywords:** Dengue, Predictors of hospital stay, Mortality

### 13.10 ACQUISITION OF HEPATITIS C VIRUS INFECTION IN PATIENTS ON HEMODIALYSIS

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**Background:** Chronic kidney disease (CKD) has profound effects on morbidity, mortality, and health care costs, as well as important social implications. Data from community based studies in Pakistan reveal an alarmingly high burden of CKD patients.

Hepatitis C Virus (HCV) infection is a global health problem. Patients with end-stage renal disease (ESRD) undergoing maintenance hemodialysis show an increased risk for HCV infection relative to the general population. It is speculated that fragile health structure, unsterilized instruments and use of contaminated equipment may be contributing to the spread of HCV in dialysis community.

**Objectives:** This study was designed to estimate the frequency of acquisition of HCV infection in ESRD patients on hemodialysis at a tertiary care hospital so that the risk of infection among the patients can be assessed and appropriate measures can be taken to mitigate it.

**Methods:** Total 171 patients of ESRD of any duration, any age or sex on hemodialysis for a minimum of 6 months were included in this descriptive cross-sectional study between November, 2011 to April, 2012. It was made sure by checking through their previous medical records that all patients must be seronegative for anti-HCV antibody by ELISA before being placed on hemodialysis. Serum samples were obtained and analyzed for anti-HCV testing by ELISA.

**Results:** Of the 171 subjects, with mean age of  $41.24 \pm 13.72$  years, 103 (60.2%) were male while 68 (39.8%) were female. Overall, 83 (48.5%) patients were found to be seropositive for anti-HCV testing by ELISA while 88 (51.5%) patients were seronegative.

**Conclusions:** This study showed that HCV infection has got a much higher prevalence among the hemodialysis patients in our setup. This reflects the lapses in adhering to the recommended infection control practices. Universal infection control measures are the keystone in the prevention of nosocomial HCV transmission in hemodialysis units.

**Keywords:** End-stage renal disease, Hemodialysis, Hepatitis C virus infection

## **Respiratory Diseases**

#### 14.1

### HYPERCAPNIA AS A MARKER OF ICU ADMISSION AND PROLONGED HOSPITALIZATION IN PATIENTS WITH COMMUNITY-ACQUIRED PNEUMONIA

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*Background:* Hypoxemic respiratory failure is well known prognostic marker in community acquired pneumonia (CAP) while a PaCO<sub>2</sub> level is not considered as a prognostic indicator.

*Objective:* To examine the association between abnormal Paco<sub>2</sub> and ICU admission, length of stay and in-hospital mortality in patients with CAP.

*Methods:* A prospective study was conducted in hospitalized patients with CAP at tertiary care hospital in Karachi, Pakistan. Arterial blood gas analyses were obtained on admission. Multivariate analyses were performed using in-hospital mortality and ICU admission and length of stay as the dependent measures. *Results:* Total 115 patients enrolled. The mean age was 60.20 ± 17.0 years and 61 (53%) were male. Hypocapnia (PaCO<sub>2</sub> < 35 mm Hg) was found in 71(61.7%) and hypercapnia (Paco<sub>2</sub> > 45 mm Hg) in 22(19.1%) patients. Overall mortality was found in 16 (13.9%) and there was no statistical difference among groups (p: 0.74).After adjusting for severity of illness, hypercapnic patients had greater length of hospital stay (OR: 1.13; 95% CI, 1.01-1.27; p: 0.01), higher need for Noninvasive ventilation (NIV) on admission (OR: 3.07; 95%CI .07-8.75; p: 0.04) and ICU admission/mechanical ventilation (OR: 0.45; 95% CI, 0.16-1.41; p: 0.23) as compare to hypocapnic patients. When COPD were excluded from the analysis, the differences persisted.

*Conclusion:* In hospitalized patients with CAP, hypercapnia was associated with an increased need for NIV use and prolonged length of stay as compared to hypocapnic patients. Therefore, hypercapnia should be considered as important severity criteria to identify patients who will require a higher level of care and prolonged hospitalization.

*Keywords:* Pneumonia, Mortality, Length of stay

#### 14.2

### PULMONARY ASPERGILLOUS; CLINICAL FEATURES AND OUTCOMES IN A TERTIARY CARE HOSPITAL

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*Background:* Pulmonary aspergillus has variable course of illness severity and outcomes. Its incidence and outcomes in tertiary care hospital is not completely known especially in this part of world.

*Objective:* To determine the frequency, clinical features and outcomes of pulmonary aspergillous in a tertiary care hospital, Karachi Pakistan.

*Methods:* A retrospective study was conducted in hospitalized patients in last 10 years from 2004 to 2014 with pulmonary aspergillous at tertiary care hospital in Karachi, Pakistan.

*Results:* Total 280 cases were reviewed with aspergillosis but only 69 met the inclusion criteria. The mean age was 45 ± 15.7 years and 48 (69.6%) were male and nonsmoker 43 (62.3%). The average length of stay LOS was 10 ± 10 days. The most commonly isolated specie was aspergillus fumigatus 29 (42.0%) followed by Niger 20 (28.9%). Majority of patients had previous history of tuberculosis TB 27 (39.13%). Mortality rate was 14 (20.2%) ICU admission and ventilation required in 18 (26.08%), Pneumothorax 10 (14.5%) is the most common complication noted in these patients.

*Conclusion:* Aspergillus fumigatus is the most frequent species found especially in patients with Prior history of TB, mortality rate is higher in patients who admitted in ICU and require mechanical ventilation.

*Keywords:* Aspergillosis, Outcomes, Tuberculosis

### 14.3 FREQUENCY OF ANXIETY AND DEPRESSION AND RELATED FACTORS IN ASTHMATIC TEENAGERS VISITING A TERTIARY CARE HOSPITAL IN KARACHI

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*Background:* Pakistan is a country with the higher prevalence of childhood asthma among South Asian countries. It has been estimated that up to 4 % of children attending outpatient clinics present with bronchial asthma. Being a chronic illness, asthma has its own psychosocial aspects. Asthmatic children/teenagers have been shown to have higher rates of depressive disorders compared to non-asthmatics. This study aims to assess the frequency of anxiety and depression and its related factors among asthmatic children and teenagers of age 13-19years.

*Method:* The study conducted using prospective cross-sectional survey at out-patient department of a tertiary care hospital in Karachi. Information collected regarding socio-demographic characteristics of children and their families. The parents were inquired about the family history of asthma. Finally child was screened for anxiety and depression using a validated screening tool ; HADS Scale.

*Results:* The study sample comprised of 50.4% males and 49.6% females. The screening on HADS scale identified , Anxiety (18.0%) and depression (17.6%) among asthmatic teenagers. Final analysis of study showed significant relation between anxiety/depression and gender and father occupation. Other parameters (parental education, smoking exposure, family system) also showed strong relation with anxiety/depression among asthmatic teenagers.

*Conclusion:* Asthmatic children/ teenagers are at high risk of anxiety/depression as the result of chronic morbid illness. Female gender, socioeconomic status, smoking exposure are found to be strong predictor for anxiety/depression among asthmatic teenagers. Frequent screening of these children can help in early identification and

treatment of anxiety and depression among asthmatic children and teenagers and can help in making the outcome better for asthma and reducing emergency visits.

*Keywords:* Asthma, Adolescents/teenagers, Anxiety/Depression

### 14.4 QUANTIFICATION OF STREPTOCOCCUS PNEUMONIAE IN WHOLE BLOOD BY LYTA GENE REAL TIME PCR

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*Introduction:* Streptococcus pneumoniae is a major cause of bacteremia in both children and adults. As sensitivity of conventional culture and serological methods in detection of S.pneumoniae in blood is hindered by prior antibiotic treatment, hence improved diagnostic methods like targeting the S.pneumoniae lytA genes through real time PCR are increasingly used. Quantification of the lytA gene in whole blood may find potential use as a clinical tool in predicting severity of infection and subsequent decisions regarding critical care admissions.

*Objective:* To detect S.pneumoniae lytA gene and quantify in terms of copies/ml on the basis of Ct (Cycle Threshold) values with the help of Standard curve.

*Materials and Methods:* Standard curve was generated by setting up 10-fold serial dilutions of S.pneumoniae ATCC 49619 and suspending in healthy donor's EDTA blood to achieve final concentrations of  $5 \times 10^6$  to  $5 \times 10^2$  colony forming units (cfu)/mL. The assay was optimized to detect 500CFU/ mL of bacteria in 200  $\mu$ L of whole blood. Blood was collected from children < 5 years old with radiologically proven pneumonia as part of the Pneumococcal Conjugate vaccine impact study, which is being conducted in 5 districts of lower Sindh. The study was approved by the Aga Khan University Ethical Review Committee (ERC no

2818-PED-ERC-13). DNA was extracted from 200 µl whole blood by QIAamp DNA blood mini kit and lytA gene real time PCR was carried out using specific primer set on Corbett Rotor gene platform. Cycle Threshold (Ct) values of all lytA gene positive DNA were plotted along the standard curve and quantification of samples were done in CFU/ml and copies of DNA/ml. *Results:* A total of 17 blood samples were positive for lytA gene. The bacterial load ranged from 5x10<sup>7</sup> CFU/ml to 5x10<sup>3</sup> CFU/ml. Of these, 7 samples showed bacterial load of 5x10<sup>6</sup> CFU/ml (equivalent to 1x10<sup>4</sup> DNA copies/2ul), 5 with 5x10<sup>7</sup> CFU/ml (equivalent to 1x10<sup>6</sup> copies of DNA/2ul), 4 samples with 5x10<sup>4</sup> CFU/ml (equivalent to 1x10<sup>2</sup> copies of DNA/2ul) and 1 with 5x10<sup>3</sup> CFU/ml (equivalent to 1x10<sup>1</sup> DNA copies/2ul).

*Conclusion:* We used a small volume of whole blood for lytA gene detection and diagnosis of pneumonia which reveals that only high concentrations of pneumococcal DNA were detectable. Use of higher volumes is likely to increase sensitivity; however, the specificity may be compromised. Quantitative PCR analysis of larger volumes of whole blood from a larger cohort of children with invasive pneumococcal disease is required to assess the clinical value of this assay.

*Keywords:* Streptococcus pneumoniae, LytA gene, Real time PCR

#### 14.5

### BEHIND THE MASK: ENSURING HOSPITAL UNIT SAFETY CLIMATE BY USAGE OF FACIAL PROTECTION TO PREVENT OCCUPATIONAL TRANSMISSION OF COMMUNICABLE RESPIRATORY ILLNESS

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*Introduction:* Communicable respiratory illness has found to be the foremost cause of morbidity among nurses. One of the major reasons is the failure to demonstrate compliance with appropriate barrier precautions, principally facial protection. The objectives of this literature review were to highlight

the determinants that influence nurses' compliance to practice facial protection.

*Method:* Systemic review of literature from 16 research articles from 2012 to 2015 was conducted through electronic medium by using Science direct, JPMA, SAGE and Google search engines.

*Discussions/Implications:* Compliance with facial protection is observed to be poor among health care providers. While adherence with hand hygiene, glove use, and immunization has been well established, use of facial protection to prevent the spread of respiratory disease has not been well noted. It has been found that Cleanliness, orderliness of the workplace and availability of facial protection equipment are the major determinant of compliance with infection control protocols. Additionally nurses who are trained in infection control practices found to be more adherent to apply facial protection. However, demographic factors such as sex, education level, and occupation have not been found to be associated with practice of facial protection among health workers.

*Recommendations/Suggestions:* It has been noted that use of facial protection can be hindered by the long duration of the procedure being performed and lack of time and training to properly use and dispose of the equipment. Training modules should be designed to recommend use of FPE in healthcare setting should focus on availability of equipment, organizational support for health workers and safety, and good communication practices.

*Conclusion:* This abstract endeavor to highlight the strategies and interventions eventually resulting in enhanced compliance with facial protection and, ultimately, a decline in occupational transmission of communicable respiratory illness.

*Keywords:* Facial protection, Occupational Transmission, Respiratory Illnesses

#### 14.6 PREVALENCE AND PREDICTORS OF COPD IN KARACHI, PAKISTAN – THE BOLD SURVEY IN PAKISTAN

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*Background:* COPD is amongst the leading causes of morbidity and mortality worldwide however, there is little information available regarding its prevalence and risk factors, in developing countries including Pakistan. Therefore, study will add significantly to the existing literature on COPD.

*Objectives:* To measure the prevalence of COPD and its risk factors in adult population of Karachi, Pakistan and compare with other developing countries.

*Methods:* A community based cross-sectional survey was conducted in Karachi from May 2014-Feb 2015 comprising 600 (300 male and 300 female) participants  $\geq 40$  years of age. Out of 9600 clusters in Karachi, 75 clusters were randomly selected and from each cluster 24 households were randomly selected. All eligible members from each household were enrolled. Data were collected through a translated and pre-tested version of BOLD questionnaire and spirometry. COPD was defined as post-bronchodilator FEV1/FVC less than the Lower Limit of Normality (LLN).

*Results:* Preliminary findings show the prevalence of COPD to be 8.1% (n=21). Participants diagnosed with COPD were more likely to be men who were smokers or those exposed to second hand smoke. High risk occupations identified in our population include; drivers, construction workers, mechanics, and tailors.

*Conclusion:* This study reports high prevalence of COPD in Pakistan. Information regarding associated factors such as smoking, exposure to second hand smoke and high risk occupations will be extremely important for the policy makers in order to develop preventive strategies in developing countries.

*Keywords:* Chronic obstructive pulmonary disease (COPD), Prevalence and predictors, Spirometry

#### 14.7 PHARMACOLOGICAL BASIS FOR THE MEDICINAL USE OF BLACK PEPPER AND PIPERINE IN AIRWAY DISORDERS

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*Ethnopharmacological relevance:* Piper nigrum commonly known as black pepper, has been used as an anti-asthmatic and expectorant in the traditional systems of medicine. In the present study, we aimed to assess bronchodilatory effects of crude extract of dry fruit of Piper nigrum (Pn.Cr) and piperine using in vivo and in vitro assays.

*Materials and methods:* Bronchodilatory effects of Pn.Cr and piperine were assessed in anaesthetized rats against carbachol (CCh)-induced bronchoconstriction. Isolated tissue bath assembly was used to investigate the effect of Pn.Cr and piperine on isometric contractions of tracheal smooth muscle strips using PowerLab data acquisition system.

*Results:* In anaesthetized rats, Pn.Cr (10-100 mg/kg) and piperine (1-30 mg/kg) showed prominent bronchodilatory effects. In isolated tracheal preparations, Pn.Cr caused relaxation of both CCh (1  $\mu$ M) and K<sup>+</sup> (80 mM)-induced contractions at 0.3–3 mg/mL, which was similar to papaverine. In contrast, verapamil was relatively more potent against K<sup>+</sup> (80 mM)-induced contractions. Pn.Cr also dose-dependently (0.03 mg/mL, 0.1 mg/mL) shifted the isoprenaline-inhibitory dose-response curves (DRCs) to the left, similar to papaverine. Shift of isoprenaline-inhibitory DRCs to the left was also noted when tissues were incubated with progressively higher doses of piperine (10  $\mu$ M, 30  $\mu$ M). The activity guided fractions of Pn.Cr showed distribution of bronchodilatory constituents across the aqueous and organic fractions with varied proportion.



*Conclusion:* These results suggest that black pepper and piperine possess bronchodilatory effect mediated putatively through phosphodiesterase inhibition and Ca<sup>++</sup> antagonist like pathways, which may justify its folk medical use in airway disorders.

*Keywords:* Black Pepper, Bronchodilator, Phosphodiesterase inhibitor

#### **14.8** ROLE OF UNIPORTAL VATS IN THE DIAGNOSIS OF MEDIASTINAL ADENOPATHY IN SOUTH ASIAN POPULATION

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We present a case series of 596 patients who had mediastinal adenopathy who had biopsy via Video-assisted Thoracoscopy (VATS). We used one port in the fourth intercostal space in the mid axillary line to do this biopsy. 21 patients had SVC syndrome. Successful diagnosis was achieved in all except two patients who required repeat biopsies. VATS remain as the best technique in the diagnosis of mediastinal adenopathy in South Asian Population.

*Keywords:* VATS, mediastinum, adenopathy

#### **14.9** SUCCESSFUL TREATMENT OF PULMONARY AV MALFORMATIONS WITH LOBECTOMY

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20 year old boy presented with one year history of cyanosis and clubbing. Echocardiography was normal. The CT chest showed giant AV

malformations involving the left lower lobe. The feeding artery was embolized but the procedure did not resolve the symptoms. Left lower lobectomy was then performed which led to complete resolution of symptoms and cyanosis.

*Keywords:* pulmonary, lobectomy, AV malformations

#### **14.10** SUCCESSFUL TRACHEAL RECONSTRUCTION OF DISTAL TRACHEAL STENOSIS WITH PERICARDIAL PATCH AND RIB

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30 yr old man presented with stridor two months following prolonged intubation after a gunshot wound to the head. CT neck and chest showed 90% stenosis of the trachea, 3 cm in length about 2.5 cm proximal to carina. After few unsuccessful attempts in dilating the trachea, tracheal reconstruction was performed via right thoracotomy. The tracheal stricture was repaired with longitudinal tracheotomy and autologous pericardial patch. Rib piece was placed transversely to give rigidity to the patch. Stridor resolved and patient was discharged in a stable condition.

*Keywords:* trachea, stricture, thoracic

## **Techniques/Innovations**

### 15.1 IS THERE ANY BENEFIT OF DRAIN PLACEMENT ON POSTOPERATIVE COMPLICATIONS IN PATIENTS UNDERGOING SISTRUNK PROCEDURE?

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*Introduction:* Day-care Sistrunk procedure is commonly performed to manage thyroglossal duct cyst anomalies and may lead to postoperative complications. Surgical drains are put to prevent complications, but recent observations show no advantage, and rather increased healthcare costs and patient discomfort. *Objective:* The study evaluated if drain placement in Sistrunk procedure offers any benefit on postoperative complications.

*Method:* Retrospective analysis of patient records having undergone daycare Sistrunk procedure in last 10 years (2004-2014) was done. Of 58 patients (38 males and 20 females) included, 38 did not have drains put and rest 20 had drains placed. Mean and median age of patients was 18.1 and 13.5 yrs, respectively. Postoperative complications of patients with drain versus without drain were statistically analyzed. *Results:* Overall, about 10% patients had H-S (hematoma/seroma) with 6.9% patients needing aspiration for H-S, 3.4% had wound infections, and 1.7% had pus formation. Both patient groups (with drain or without drain) did not show any statistical significant difference in Sistrunk-related complications between them in Fisher's Exact (2 sided) test; H-S group ( $p=0.08$ ); those needing aspiration, ( $p=0.29$ ); wound infection ( $p> 0.05$ ); and pus formation ( $p=0.35$ ). Chi-square test also did not show any significant difference in the groups in terms of number of follow-ups.

*Conclusion:* Surgical placement of drain in Sistrunk procedure does not seem to offer any advantage in terms of reducing common post-operative complications. Day-care Sistrunk procedure without any drain placement may be a safer alternative without necessitating hospitalization. More studies with larger sample size are needed for further substantiation.

*Keywords:* surgical procedure, thyroglossal cyst, postoperative complication, surgical wound infection, drainage

### 15.2 EFFECTIVENESS OF PRECEPTORSHIP MODEL IN BACCALAUREATE NURSING EDUCATION IN PAKISTAN

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*Introduction:* Clinical practice is the backbone of every nursing curriculum. There are different models for the clinical practice; faculty supervision and clinical/preceptor based model. In Pakistan, preceptor-ship model will be applied first time for a course entitled "Advanced Concept of Community Health Nursing (ACCHN)" in the undergraduate Post RN BScN program. Using a blended learning format this course used clinical placements both in Karachi and Hyderabad via the use of preceptors. Therefore, the purpose of this study is twofold; to evaluate the effectiveness of trio model of preceptor-ship model used in this course by students, faculty as well as the preceptor, and to evaluate the course. The course had a blend of face to face and online components including: online modules, moderated discussion forums and activities, self-assessment quizzes, and podcasts.

*Methodology:* A qualitative study design was used. Purposive sampling was utilized in this study. Data was obtained via focus group interviews from four faculty, nine students and six preceptors.

*Findings :* The key findings from faculty included; utilization of preceptors were an innovative way of doing clinicals, students were involved in independent sustainable projects, as well as received opportunities to be involved in community partnerships with stakeholders. The findings from the preceptors included the need for ongoing training. The students reported that the preceptors were helpful and facilitated learning. They reported that the preceptors were the gatekeepers to the community.

*Findings:* from Faculty about the course. The faculty reported that the course website was friendly and easy to navigate. The course was flexible. However, online modules were lengthy.

*Conclusion & Recommendations* Based on the findings from this research study a curricular review has taken place at AKUSONAM. Blended learning pedagogies have been incorporated into present Post| RN Baccalaureate program curriculum.

*Keywords:* Preceptorship, Baccalaureate Nursing Education, Clinical practice.

*Keywords:* Preceptorship, Baccalaureate Nursing Education, Clinical practice

### 15.3

#### IN VITRO ASSESSMENT OF THE ACCURACY OF EXTRAORAL METHOD OF ROOT LENGTH DETERMINATION

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*Background:* Radiographic examination is one of the primary diagnostic tools used in dentistry. In some patients, obtaining a correct intraoral periapical radiograph can be very difficult. These include individuals with severe gag reflex, pediatric patients who are reluctant to intraoral film placement, patients with macroglossia or microstomia, post radiation therapy patients with trismus or patients with limited sulcus depth etc. For such patients, recently an alternative technique was suggested in which periapical radiographs were taken by using extraoral approach. The purpose of our study is to evaluate the accuracy of extra oral periapical radiograph for determining working length by comparing it with two other sets of radiograph obtained with intraoral approaches.

*Objective:* To determine the accuracy of extra oral periapical radiography in obtaining root length by comparing it with the radiographs obtained from standard intraoral approach and extended distance intraoral approach.

*Methods:* It was an in-vitro, comparative study conducted at the dental clinics of AKUH. ERC exemption was obtained for this work, ref # 3407Sur-ERC-14. We included premolars and molars of a standard Phantom head mounted with metal and radiopaque teeth. Radiation was exposed using three radiographic approaches: standard intraoral, extended length intraoral and extra oral. Since, the unit of analysis was individual root, thus, we had a total of 36 images. The images were stored in VinWix software already installed in our clinic setup. The length of the roots was determined using the scale function of the measuring tool inbuilt in the software. Data was analyzed using SPSS version 19.0 and Graph Pad software. Pearson correlation coefficient and Bland-Altman test was applied to determine whether the tooth length readings obtained from three different approaches were correlated. A p-value of 0.05 was taken as statistically significant.

*Results:* The correlation between standard intraoral & extended intraoral was 0.97; correlation between standard intraoral & extraoral method was 0.82 while correlation between extended intraoral & extraoral was 0.76. The results of Bland Altman test showed that the average discrepancy between these methods is not large enough to be considered as significant.

*Conclusions:* It appears that the extra oral radiographic method can be used in root length determination in subjects where intraoral radiography is not possible.

*Keywords:* Extra oral periapical radiography, periapical radiography, invitro experimental

#### 15.4 SIMULTANEOUS DETECTION OF ENTERIC PATHOGENS IN CHILDREN WITH STUNTING USING TAQMAN LOW DENSITY ARRAY (TLDA) AS PART OF NEXT GENERATION MOLECULAR DIAGNOSTIC PLATFORM

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**Introduction:** Children from developing countries suffer from repeated enteric infections due to unsafe drinking water and poor living conditions. These children often suffer from diarrhea and malnutrition in early childhood. Identification of infectious etiology in diarrhea is challenging as several pathogens including bacteria, viruses, and protozoa are responsible for diarrhea and associated pathology such as stunting and wasting. A number of laboratory diagnostics such as bacterial culture, ELISA, conventional-block or real time PCR and microscopy for diagnosis. However, these methodologies have their own limitations of variable sensitivity, prior use of antibiotics and turnaround time. The TaqMan Array Card (TAC) system provides an ideal detection system. It is a 384-well singleplex/multiplex real-time PCR format that has been used to detect 43 gene targets of diarrhea-causing enteropathogens. **Material and Methods:** Paired stool specimen (n=259) were collected from a cohort of newborn at 6 and 9 months from Matiari district. Total Nucleic acid specimen was extracted from stool, using modified Qiagen DNA extraction protocol, followed by TaqMan Array Card Assay.

**Results:** The top 5 targets of enteropathogens were identified as Enterovirus (74% at 6M;76% at 9M), EAEC (70% at 6M;75% at 9M), Giardia (74% at 6M;76% at 9M), EPEC (38% at 6M;47% at 9M) and campylobacter (34% at 6M;49% at 9M) species.

**Conclusion:** The TAC assay allows rapid, and sensitive, tool to accurately quantitate pathogen load across a broad spectrum of enteropathogens. The role of these top 5 pathogens in stunting will require further analysis

**Keywords:** TaqMan Low Density array, Enteric infections, Next Generation Molecular Diagnostics

#### 15.5 EUKARYOTIC CELL ENCYSTATION AND CANCER CELL DORMANCY: IS A GREATER DEVIL VEILED IN THE DETAILS OF A LESSER EVIL?

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**Background:** Cancer cell dormancy and its subsequent recurrence to active form are daunting threats to our fight against cancer. As these cancer dormant cells are at a low profile metabolically as well as in their epigenetic expression, it has become problematic to target these ghost cells. Eukaryotic cell studied as model can help understand this complex state of human cancer.

**Objective:** With the rationale for studying a similar, if not identical process of encystation and excystation in primitive eukaryotes could possibly help our understanding of the metabolism and protein expression in dormant cancer cells. Any similarities, if found could be extended to identify potential therapeutic targets, either to awake and kill or maintain this state for therapeutic gains.

**Methods:** The encystation and excystation processes were studied in the pathogenic eukaryotes to explore cell membrane GPCR's, downstream signalling, organellar proteomics, metabolic dependencies and induction and awaking signals. The findings were extended to dormant cancer cells to see homologies, if any.

**Results:** Vital cell surface receptors, enzymes, and minimally needed metabolic pathways involved were found to be similar if not identical in the cells studied. Nutrition sensing glucose receptors (GLUT-1-4), calmodulin, MAPK, Na-K ATPase, NHE-Pumps and T3-T4 cytoplasmic receptors in particular were the homologies detected.

**Conclusion:** Drugs targeting the above proteins and enzymes were able to induce, maintain and reverse the cancer cell dormancy. Taken together these in-

vitro studies demonstrate for the every first time to our knowledge the homology between cancer cell dormancy and eukaryotic cell hibernation states.

*Keywords:* Cancer dormancy, Encystation, Cancer

## 15.6

### VALIDATION OF DYNAMIC LOG FILES FOR DIFFERENT BEAM RATE IMRT USING DVH AND GAMMA ANALYSIS

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*Introduction:* The purpose of this study is to evaluate the ability of dynamic log files (DynaLogs) for IMRT at 2 dose rates (300 and 600 MU/Min).

*Method:* Seven IMRT plans of head and neck cancer patients were created with 300 and 600 MU/sec dose rates. Planning target volumes (PTV) and organs at risk (OAR) were contoured in all the patients. All patients have similar contoured PTV, OAR's and prescribe dose. Both plans of each patient were delivered on 2D-array (Sun Nuclear®) for dosimetric measurements. The Dynalog files that contains information regarding MLC control points, and planned and actual leaf positions were imported into MATLAB®. The in house MATLAB® program was used to generate new MLC files and fluence maps from the Dynalogs. New IMRT plans of different dose rate with MATLAB® generated MLC files are made for DVH evaluation of PTV and OAR's. Measured fluence maps were evaluated by Verisoft® with gamma index distribution (3%/3 mm).

*Results:* All measured fluence maps by 2D-array and reconstructed fluence maps from Dynalogs passes the confidence limit of 96% for gamma index. The DVH evaluation of original and reconstructed plans with different dose rates for PTV and OAR's shows good degree of correlation with adjusted R-squared ( $R^2 > 0.98$ ). The maximum dose difference among these plans was found to be  $< 2\%$ .

*Conclusion:* As expected, results are within the tolerance level and good degree of agreement found between original and reconstructed plans. This work highlights potential of Dynalogs for used as quality assurance of different dose rate IMRT.

*Keywords:* IMRT, Dynalogs, Dose rate

## 15.7

### COMPARISON OF COMMERCIAL MAGNETIC MULTIPLEX CYTOKINE/CHEMOKINE ASSAYS KITS

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*Background:* Estimation of cytokines and chemokines using multiplex platform allows analysis of multiple analytes in a given sample. In case of paediatric population, biological samples are limited to smaller blood volume and therefore detection of multiple analytes is always challenging. Magnetic bead coated with multiple antibodies is an alternative of cumbersome single cytokine ELISA. However, these assays are technically demanding and require strict quality control such as use of internal or external control. We compared the two commercial magnetic kits for correlation of analytes using serum samples.

*Objective:* To compare the assay protocol of two commercial magnetic multiplex cytokine/chemokine kits and to observe the correlation between analytes analyzed in serum samples.

*Methodology:* Luminex based Human Cytokine 25-Plex Panel (Invitrogen) and Bio-Plex Pro Human Cytokine 27-Plex Assay (BioRad) were compared and levels were measured in paired serum samples obtained from children at 6 and 9 month of age.

*Results:* There was weak to moderate correlation between analytes run from Invitrogen and Biorad kits. The Pearson correlation between analytes assessed by Biorad vs. Invitrogen kits were ranked order as, RANTES ( $r=0.11$ ;  $p=0.144$ ), TNFa

( $r=0.270$ ;  $p=0.001$ ) Eotaxin ( $r=0.512$ ;  $p<0.0001$ ), and IP-10 ( $r=0.603$ ;  $p<0.0001$ ).

*Conclusion:* Among analyzed chemokines, Eotaxin and IP-10 showed highest correlation. The low correlation among analytes reflects lower intensity of beads for a particular analyte which differs considerably from one assay to another. It is important to be consistent with choice of assay as analytes are not comparable in terms of intensity of coated beads in available commercial assays.

*Keywords:* Cytokines, Chemokines, Luminex

### 15.8

Fast and furious 1.5

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*Purpose:* To describe a new and more efficient technique for phacoemulsification cataract surgery

*Setting:* Section of Ophthalmology, Department of Surgery, Aga Khan University Karachi

*Methods:* We are presenting a new technique for phacoemulsification cataract surgery which has evolved in the quest for making the procedure faster and more efficient. It involves the standard phacoemulsification techniques with the exception of using a venturi system and special maneuver during the step of phacoemulsification involving special movements of the phaco probe and much modified machine settings.

*Results:* The technique achieves complete removal of the nucleus in a few seconds. This combined with a few other modifications of the other steps routinely let us finish the complete case in an average of 2 minutes and on occasions 1.5 minutes.

*Conclusions:* Our technique has implications for time and resources needed for cataract surgery, one of the world's most frequently performed surgical procedures.

*Keywords:* cataract surgery, time, phaco

### 15.9

PATIENTS' SATISFACTION AND SPECTACLE INDEPENDENCE AFTER CATARACT SURGERY WITH MULTIFOCAL INTRAOCULAR LENS IMPLANTATION

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*Objective:* To assess patients' satisfaction, spectacle independence and visual disturbance after implantation of multifocal IOLs. *Study Design:* Single group cohort study. *Place and Duration of Study:* Section of Ophthalmology, Department of Surgery, Aga Khan University Hospital (AKUH), Karachi, Pakistan, Jan 2012 and Sept 2013

*Methodology:* Patients who underwent bilateral cataract surgery with multifocal IOL implantation were included. Telephonic interviews were conducted to assess patients' satisfaction, spectacle independence and visual disturbance after surgery.

*Results:* Of 51 patients who underwent surgery, 41 were contactable. Two refused to participate. 39 were included in the study. The mean age of participants was  $55.5 \pm 8.1$  years. The mean ( $\pm$  SD) follow up time was  $9.60 \pm 3.19$  months. The overall satisfaction rate after surgery was found to be 84.6% and there was no statistically significant association of satisfaction with gender, age or education. 84.6%, 94.9% and 84.6% people had spectacle independence for far, intermediate and near, respectively. More than half of participants (59%) had some degree of visual disturbance: mild (30.8%), moderate (23.1%) and severe (5.1%).

*Conclusion:* Multifocal IOL implantation provides high levels of satisfaction and spectacle independence despite notable risk of halo or glare symptoms at night. Therefore, careful patient selection and preoperative counselling regarding possible risks and benefits is recommended. (RB and TAC contributed equally and both be considered first authors)

*Keywords:* Patients' satisfaction, multifocal IOLs, spectacle independence

### 15.10 LONG TERM REMISSION INDUCED BY METHYLPREDNISOLONE AND CYCLOPHOSPHAMIDE PULSE THERAPY IN A CASE OF RESISTANT PEMPHIGUS VULGARIS

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*Introduction:* Pemphigus vulgaris (PV) is a chronic, autoimmune mucocutaneous disorder that manifests in the oral mucosa and may later extend to involve the skin all over body and other mucous membranes. Long term immunosuppressive therapy is required to induce and maintain remission. We report a case of a 48-year old gentleman who presented with acute exacerbation of resistant type of PV treated by combination pulse therapy of methylprednisolone and cyclophosphamide.

*Methods And Conclusion:* This gentleman, reported in Emergency room with flare of his disease in April 2013. On examination, patient was in visible discomfort, having pus-filled cutaneous blisters with erosions all over his face, scalp, trunk, limbs and mucosae. The patient was a known case of PV, diagnosed in July 2012 and was on Deltacortil 50mg per day since the past one year with a combination of immunosuppressives. His past medical history was insignificant for any other comorbid condition. He was started monthly pulse therapy of methylprednisolone and cyclophosphamide monthly for 4 months. In between pulse therapy he was given cyclophosphamide 50mg per oral q.d and he remained in remission without any steroids for 1 year duration. There was no untoward lab finding during his treatment. We conclude that this combination pulse therapy was not used before followed by a total steroid free period in between and after 4 pulses has not been reported in literature before. Therefore, it is a safe and effective treatment modality in our experience. However, randomized controlled trials are required to validate this.

*Keywords:* Pemphigus Vulgaris, pulse therapy, treatment

### 15.11 EVALUATION OF METHODS FOR DNA EXTRACTION FROM TUMOR FFPE TISSUE BLOCKS

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*Introduction:* Formalin fixed, paraffin embedded (FFPE) archived tissues are a valuable resource of patient DNA for molecular studies. However, the process through which the tissue is deparaffinized and subsequent steps are not only time-consuming, they may affect the quality of DNA extracted and hence, downstream applications such as PCR. We compared various protocols involving three different protocols for deparaffinization and three different DNA extraction methods.

*Methods:* FFPE tissue processing for DNA extraction involves deparaffinisation, digestion and purification steps. We utilized six tumour FFPE tissues and obtained 15µm slices from each. For deparaffinisation, xylene/ethanol, microwave or thermal heating procedures were employed. Regardless of deparaffinisation process, all samples were digested with proteinase K. Following this, DNA was extracted and purified using either phenol:chloroform, simple boiling or Chelex-100. The quality of the extracted DNA was tested by electrophoresis on 0.8% agarose gel. PCR amplification was performed to determine the effect of deparaffinization and DNA extraction method on a downstream application. *Results/Conclusion:* DNA extracted using phenol:chloroform, simple boiling and Chelex-100 was of equally good quality and quantity. However, the microwave methods appears to be optimal for deparaffinization with regards to quality and quantity of DNA extracted.

*Keywords:* FFPE tissue, DNA extraction, agarose gel electrophoresis



### 15.12 INCIDENCE OF URINARY RETENTION IN PATIENTS UNDERGOING UNILATERAL TOTAL KNEE ARTHROPLASTY- COMPARISON BETWEEN CONTINUOUS EPIDURAL ANALGESIA AND SINGLE SHOT FEMORAL NERVE BLOCK- A RANDOMIZED CONTROLLED STUDY

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*Introduction:* Acute urinary retention is one of the commonly encountered complication after lower limb joint arthroplasty with the incidence ranging from 10.7% to 84%(1). Postoperative urinary retention contributes significantly to morbidity such as prosthetic infection and sepsis (2, 3). Knee arthroplasty is a well-documented factor with a quoted incidence of 2.5% in comparison to 0.64% of hip arthroplasty for urosepsis contributing to deep joint sepsis.(1) Studies have shown increased incidence of urinary retention in patients using epidural when compared with non-epidural techniques.(4) patients receiving peripheral nerve blocks as compared to epidural techniques tend to have a significantly lower incidence of post operative urinary retention.(5-7) However in any of these studies urinary retention has not been looked as primary outcome, we want to study urinary retention as primary outcome as our patients encounter urinary retention very frequently.

*Objective:* The objective of this study was to compare the incidence of urinary retention in patients undergoing unilateral Total knee arthroplasty receiving continuous epidural analgesia vs. single shot Femoral Nerve Block. Study design Randomized controlled study Setting Operating rooms of Aga Khan University Hospital Duration October 2013 – September 2014 Subjects Sixty patients (30 in each group) *Methods:* Over a period of 12 months, we randomized 60 patients in two groups of 30 patients each i.e. Epidural Group (group E) or Femoral nerve block group (group F). Baseline parameters were recorded. Postoperatively patients were followed for upto 24 hours to collect the data regarding urinary retention. Final outcome

was taken at 24 hours post op. Data was analyzed to compare the incidence of urinary retention between the two groups.

*Results:* Incidence of urinary retention was significantly high in Group E than Group F (46.7% vs. 6.7%; p=0.0005).

*Conclusions:* Single shot femoral nerve block offers a more favorable profile in terms of post-operative urinary retention when compared to continuous epidural analgesia in patients undergoing unilateral total knee arthroplasty.

*Keywords:* Total knee arthroplasty, femoral nerve block, urinary retention

### 15.13 THE ANALGESIC EFFICACY OF ULTRASOUND GUIDED BILATERAL SUBCOSTAL VS. POSTERIOR TRANSVERSUS ABDOMINIS PLANE BLOCK AFTER LAPAROSCOPIC CHOLECYSTECTOMY : A RANDOMIZED CONTROLLED

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*Introduction:* Pain after laparoscopic cholecystectomy has several origins including incisional, referred, visceral, and parietal. The Transversus abdominis plane (TAP) block is one such block that has been used for managing postoperative pain after anterior abdominal wall surgeries. This study is design to compare theanalgesic efficacy of ultrasound guided Subcoastal-TAP block technique with ultrasound guided Posterior-TAP block for post-operative pain relief in patients undergoing laparoscopic cholecystectomy under general anaesthesia.

*Objectives:* To compare the mean postoperative pain scores of two groups of patients undergoing laparoscopic cholecystectomy, and receiving either ultrasound guided bilateral Posterior-TAP block or bilateral Subcoastal-TAP block for postoperative analgesia. Setting:Aga Khan University Hospital Karachi Study design:Randomized controlled study

Duration of the study: from 28th March 2013 to 28th September 2013 (6 months).

**Subjects and Methods:** A total of 126 Patients for elective laparoscopic cholecystectomy were included. Patients were randomly allocated (63 each) to one of the two groups., group 1 received ultrasound guided bilateral Posterior TAP-Block with 20ml, 0.375% bupivacaine on each side, and group 2 received ultrasound guided bilateral Subcostal TAP-Block with same concentration and volume for postoperative analgesia. Postoperative Numeric Rating Scale (NRS) for pain at rest (static pain) and on movement (dynamic pain) was evaluated immediately in PACU as zero hour, then at 1hr, 2hr, 6hr, 12hr and 24 hour.

**Results:** The mean age of the patients was  $38.04 \pm 7.65$  years. Our study results showed a statistically significant difference in the mean NRS for static pain at 24 hours in the S-TAP group, suggesting improved analgesic impact of S-TAP as compared to P-TAP while our study did not show any statistically significant difference in mean dynamic pain score at 24 hours.

**Conclusion:** Ultrasound guided bilateral subcostal TAP block improves the quality of postoperative analgesia after Laparoscopic cholecystectomy when compared with the posterior TAP block.

**Keywords:** Subcostal Transversus abdominis plane block, Laparoscopic cholecystectomy, Postoperative pain

#### 15.14

##### DOSIMETRIC COMPARISON 3-D CONFORMAL AND INTENSITY MODULATED RADIOTHERAPY IN RETINOBLASTOMA

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**Objective:** The aim of this study is to present the comparison of two treatment techniques utilized in our department. For each patient plans were made with 3-D Conformal (3DCRT) and Intensity Modulated Radiotherapy (IMRT), but the best plan

was executed for patient of retinoblastoma requiring radiotherapy to the whole eye.

**Method and Material:** Retrospective study was done on 10 patients. Compassion was done on the basis of tumor coverage and doses to Organ at risk (OAR) including Bi-lateral eye, lens, Optic nerve, Optic Chiasm and dose to normal tissue. Treatment Plan were made with both techniques and analyzed with Dose-volume histogram (DVH). Plans were executed with clinical judgment by Physician and Physicist. **Result:** Both techniques provided similar target coverage; conformity was highest for IMRT i.e. Conformity Index CI = 0.8, where as in 3DCRT is around CI = 0.7. The doses of OAR were lower in IMRT technique but in some of the cases lens, retina and optic nerve dose of opposite eye were lower up to 13% in 3DCRT, which helps the clinician to choose the best option for the patient.

**Conclusion:** Retinoblastoma was mostly occur in pediatric patients, treatment modality was chosen by correlating the doses of OAR both techniques considering in of long term survival i.e. late effects. We recommend for pediatric tumor both technique are feasible but preferred technique should be justified by clinical judgment.

**Keywords:** IMRT, 3DCRT, Retinoblastoma

#### 15.15

##### OPTIMIZATION OF METHOD FOR EXTRACTION OF DNA FROM FROZEN HUMAN TISSUE

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**Introduction:** Frozen tissues are an invaluable resource for molecular studies. However, the quality and purity of the extracted nucleic acids depend on the age of tissue and extraction method applied. We used three different protocols for DNA extraction from placental tissue to find the optimal method yielding higher purity and larger amount of DNA.

*Method:* Twelve placental tissues were selected, six of which were recently acquired while the other six were 12-18 months old. DNA from each tissue was extracted using three different protocols: Phenol:Chloroform, Trizol reagent, and alkali lysis. A kit based method was used as a standard. The quantity and purity of the extracted DNA was determined using NanoDrop. Agarose gel electrophoresis was also used to check the quality of the extracted DNA, followed by PCR for a housekeeping gene. *Results and Conclusion:* The success rate for DNA extraction from the archived tissues was only 15% with both the Phenol:Chloroform and Trizol reagent methods. Whereas, the success rate with alkali lysis was 50%. With Qiagen kit, 100% success was obtained hence the kit method was found to be most reliable.

*Keywords:* DNA extraction, frozen tissue, agarose gel electrophoresis

## **Women and Child Health**

## 16.1

### IT SHOULDN'T HURT TO BE A CHILD: A CASE REPORT

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*Introduction:* The term “child abuse” brings to mind extreme physical harm, often bring an extreme image and usually hide the other side of it.. It is often result in underrate of those conducts which is coming underneath the definition of child abuse but flouted due to no apparent hasty harm or misjudge of abuse as a form of discipline strategies and increment in tolerance to these behaviors almost in every culture. The objective is to review the case with relevant literature on the physical, psychological abuse and neglect on children and adolescents.

*Method:* Case report review. The case has been labelled as abuse on the basis of International Child Abuse Screening tool for Parent and child developed by International Society of Prevention of Child Abuse and Neglect.

*Results:* In the present case report, a 15-year-old girl was physically and psychologically abused by her parents and her brother who caused actual bodily and emotional trauma to the girl in the name of disciplinary strategy. She was thrown into water tank by her father, kicked by her brother, slapped by her parents and brother, got hit from hard objects including shoes, belt, hanger, get burned from candles and hot spoon inside mouth, restrained from rope by her parents, insulted by bad names as a disciplinary strategy adopted by family. After adequately dealing the emotional effects of child via additional counseling on proper parenting techniques, the child was feeling better. In addition, parent and child were referred to Abbasi shaheed hospital for psychological counseling. Moreover, Toll-free number was given to child for contacting SAHIL Ngo for individual counseling.

*Conclusion:* parent should adopt positive parenting style. There should be an awareness raising program for adopting a positive parenting style rather than using corporal and extreme punishment as a disciplinary strategy.

*Keywords:* Child abuse, Punishment, Discipline

## 16.2

### A RETROSPECTIVE STUDY OF WOMEN'S REPRODUCTIVE HEALTH RELATED CALLS IN AMAN FOUNDATION TELE-HEALTH CALL CENTRE IN KARACHI, PAKISTAN

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*Objective:* The study aimed to determine the reproductive health related concerns among the female population availing the services of one of the call centers in Karachi, Pakistan. This study also intended to determine the, frequency of calls, self versus surrogate callers (husband or mothers in law calling on behalf of patient), the age of the callers, the level of care provided and the shift timings of the calls. Moreover, this study also aimed to identify the recommendations, advice, and triaging given to the callers.

*Methodology:* A descriptive, retrospective study was conducted to analyze women's reproductive health related calls received in two years from January 01 2012 to December 31 2013 at Aman Foundation telehealth call center Karachi, Pakistan. The collected data of calls received at Aman foundation call center were used by the researcher. Call records of the patients were reviewed; and women reproductive health related symptoms were then extracted from the list and the received data were analyzed using descriptive statistics.

*Results:* The analysis of data revealed that 303 calls were related to women's reproductive health symptoms, out of which majority of the calls were surrogate calls (60.1%). Moreover, most of the calls were received in the morning shift (46.2%) and the mean call duration was 12.25 minutes. This study also revealed that the highest frequency of calls were related to pregnancy (26.1%), followed by urinary incontinence (10.6%) and urinary tract infection (7.9%). The findings indicated that most of the calls were effectively answered by qualified nurses (73.6%) with the use of algorithms and disease summaries. The study findings showed that

majority of the callers (73.9%) were provided self-care instructions or health information from the algorithms for women's reproductive health concerns.

*Conclusion:* The findings of the study revealed the common reproductive health issues amongst the female population availing the services of one of the call centers in Karachi, Pakistan. It is well established from the study that pregnancy-related issues are predominant among the female population of Karachi. The health care providers particularly call center agents, health educators, policy makers, and researchers need to acknowledge that in the South Asian region, women's reproductive health concerns are highly prevalent and patients' access to call centers is increasing day by day. The study also suggests that call centres are experiencing an increasing demand for advice about women's reproductive health concerns. An in-depth knowledge of socio-demographic trends and women's reproductive health symptoms can help call centres to work on software development, staffing and training to meet the increasing demand for telephone advice.

*Keywords:* Tele-health, Call Centers, Sexual and Reproductive Health

### 16.3 BREASTFEEDING TRENDS AMONG NURSING MOTHERS IN KARACHI, PAKISTAN: A HOSPITAL BASED STUDY

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*Introduction:* Recently, much effort has been done in Pakistan to make mothers aware of the benefits of breastfeeding and to encourage them to breastfeed their children with respect to the WHO guidelines. Despite, these endeavors, a recent estimate by the WHO showed that no more than 35% of infants worldwide are exclusively breastfed during the first four months of life.

*Aim:* To determine the Feeding practices by nursing mothers in Karachi

*Methodology:* A structured questionnaire designed and filled by the authors from nursing mothers attending the Gynecology, Obstetrics and Pediatrics departments of Lady Dufferin Hospital, Jinnah Medical College Hospital, and Civil Hospital based on the inclusion criteria (i.e. mothers of children aged up to 2 years).

*Results:* Four hundred (400) nursing mothers were assessed with the help of the questionnaire. 90% mothers went for antenatal visits but only 58% women received any counseling regarding breastfeeding. 90% women initiated breastfeeding, with 75% within the first hour after delivery. Moreover, 61% women gave prelacteal feed. However, only 43% mothers breastfed their child up to 6 months, exclusively. Whereas, only 12.5% breastfed up to 2 years. In addition, the main reasons for adding complementary formula milk are insufficient milk production and pregnancy.

*Conclusion:* Mothers in Pakistan are increasingly adopting breastfeeding as the first feed for their newborns, but they are not practicing it in accordance with the WHO guidelines. There is a clear-cut need for promoting the concepts of early initiations of feeding, exclusive breastfeeding and continuing feeding up to 2 years. This is the responsibility of every Healthcare provider to guide the nursing mothers particularly during their antenatal visits.

*Keywords:* breastfeeding trends, Pakistan, WHO guidelines

#### **16.4** BEREAVEMENT EXPERIENCED BY PEDIATRIC HEALTH CARE PROFESSIONALS WHILE DEALING WITH PEDIATRIC DEATH AND DYING SITUATION AT DIVERSE PEDIATRIC SETTINGS

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*Introduction:* Pediatric death and dying situation not only provokes disruption in the lives of child's immediate family members but also affects well-being of the pediatric health care professionals in many ways. As a matter of fact, many pediatric health care settings lack much needed support programmes for the pediatric health care professionals dealing with pediatric death and dying. Hence, it seems vital to ascertain the bereavement experienced by pediatric health care professionals to be able to initiate need based supportive programmes at diverse pediatric settings.

*Aim:* This review aims at exploring bereavement experienced by pediatric health care professionals while dealing with pediatric death and dying situation at diverse pediatric settings.

*Methods:* Systematic review of literature was undertaken from peer reviewed databases, including PUBMED (2004-2014), MEDLINE (2004-2014) and CINHALL (2004-2014) with the keywords "bereavement", "pediatric setting", "healthcare professionals", and "death and dying". Shortlisted articles from developed and developing countries were reviewed.

*Findings:* Death and dying situation in the pediatric health care setups provokes series of physical, cognitive, behavioural and emotional sequel among pediatric healthcare professionals. The commonly reported reactions among pediatric healthcare professionals are psychosomatic complaints, sense of failure, helplessness, powerlessness, and guilt for not being able to save child's life. Female healthcare professionals reported more distress as compared to males. Moreover, high level of distress and maladaptive coping behaviours have been reported among pediatric healthcare professionals who either repressed their grief, encountered

unexpected pediatric deaths, maintained long-term relationship with patient/family, or involved in aggressive care just before child's death.

*Conclusion:* It seems vital to prevent distress and maladaptive coping among bereaved pediatric healthcare professionals at diverse pediatric setups through need based context specific supportive and educational programmes. Role of counseling, bereavement debriefing sessions, and support group is recommended to restore well-being of the bereaved pediatric healthcare professionals.

*Keywords:* Pediatric settings, Healthcare professionals, Death and dying

#### **16.5** THE DIVIDED WORLD OF THE CHILDREN: DIVORCE AND ROLE OF CO-PARENTING IN CHILD ADJUSTMENT

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The impacts of parental divorce have been reviewed since many years. The numerous studies have been evident that it drastically effects on overall life of partners and their offspring. Many researches also justified that parental divorce has long term effects on children. In spite of these facts many families has still unclear about this phenomena and overlook their children that result in significant problems. Therefore, the aim of this paper is to examine the children adjustment and parental role following divorce. In this paper I have described various internal and external adjustment experiences by children and association of parenting role. Hence, there is no separate study has been conducted for this paper but I did extensive literature review to analyze the concept in a broad perspectives. This literature review approach provides the vast knowledge to the content. My result indicated that child has experience various internalizing and externalizing problems i.e. anxiety, aggression etc. maternal and paternal parenting plays an important role to reduce these problems. Moreover, I have found that co-parenting plan is very effective following divorce. To achieve

the paper objectives, it divides into following parts: introduction, methodology, literature review, result and finding, discussion, conclusion and recommendations. Overall this paper determines the effects on children and association of parenting role followed by divorce.

*Keywords:* parental divorce, child internalizing and externalizing adjustments, co-parenting plan

## **16.6** POOR FINANCIAL CONDITION OVERRIDES WOMEN'S AND CHILDREN'S HEALTH

*Azada Hussain Ali*  
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*Introduction:* Poor Financial Condition Overrides Women's and Children's Health Background and Introduction Being healthy is the greatest blessing of Allah on mankind. WHO defines health as a "state of complete physical, mental and social well-being and not merely the absence of disease." This clearly states that all aspects of wellbeing combines and bring quality health but if a person fails to achieve in any one of them then his/her health would be compromised.

*Objectives:* The study aims to look at the relationship between financial condition and health of a person and his family.

*Methodology:* To look into the study objective literature review was done in which many studies were gone through and the authentic and recent articles were selected and considered in depth.

*Results:* Studies showed that there is a strong relationship between health and financial condition. Healthy life comes with a stable and good financial condition. If a family or a person have good financial condition, they would be able to pay attention and protect their health. But if a family don't have money even for his/her food then how could he/she pay attention to health.

*Conclusion and Recommendations:* In conclusion, poor financial condition is directly proportional to poor health outcomes. There is a big role of health care professionals in developing sustainability so that it gives long lasting strategies in eliminating

extreme poverty and bringing health. Thinking about strategies to increase incomes should be everyone's main concern and along with this government should also take some steps to eradicate this difficult condition at individual level.

*Keywords:* women health, overrides, financial condition

## **16.7** WOMEN IGNORE HER OWN HEALTH

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*Background and Introduction:* In Pakistani context, women are so bounded to household chores that they do not care about their own health. But ultimately those unhealthy women will not be able to take care of their children. According to Sohani (2012) health seeking behavior is to look for medical help every time when needed. Objectives: Delayed in health seeking behavior in women's health was studied along with its reasons and consequences.

*Methodology:* A case study along with literature review was done in which many studies were gone through and the authentic and recent articles were selected and considered in depth.

*Results:* The case study and literature review suggested that women especially housewives gives least priority to her own health. A woman overrides her health to make for happiness of her family which includes her husband and children.

*Conclusion and Recommendations:* In conclusion, women should consider their health seriously and women should be encouraged so that they can make efforts to work for their family's health by looking at their own well being.

*Keywords:* women health, ignorance, health deterioration



### 16.8

**ETHICAL ISSUES FACED BY WOMEN EXPERIENCING RECURRENT SPONTANEOUS PREGNANCY LOSS (3 OR MORE TIMES); A PHENOMENOLOGICAL STUDY IN A PERI-URBAN AREA OF KARACHI, PAKISTAN.**

Saima Shaukat Ali

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*Background and Purpose:* To explore the ethical issues that women face due to recurrent pregnancy loss. What they go through? How the family, Spouse and they are reacting towards this phenomenon and how the society and religion sight it? How do they reason this occurrence?

*Results:* of research or outcome of ethical inquiry; With the help of literature search and formation of synthesis matrix following 7 themes were identified: 1. Mental health alters. (40%) 2. Mental health does not alter after recurrent pregnancy loss. (10%) 3. It has Less impact than deliver a baby with multiple anomalies or opting induced abortion (15%) 4. It has more impact than deliver a baby with multiple anomalies or opting induced abortion (10%) 5. Impacts are un addressed :(25%) 6. Religion and social support are important (40%) 7. Stress is a contributing factor for spontaneous pregnancy loss. (10%) *Discussion:* Early onset of miscarriage, multiple, extended, and sometimes highly invasive traumatic events (frequently of an interpersonal nature and often involving a significant amount of stigma or shame) may be more vulnerable to stress effects. Phenomenological study design is been selected to emphasize on the context in which the event of multiple pregnancy loss occurs. Data collection in this process will need in depth inquiry of feelings of women. An In-depth interview technique will be used for needs assessment, program refinement and issue identification.

*Conclusion:* Woman is also an individual. She should be respected, loved and cared for regardless of her ability to produce children.

*Keywords:* Ethical issues, recurrent pregnancy loss, phenomenological study

### 16.9

**IMPACT OF PARENTAL PSYCHIATRIC DISABILITIES ON A CHILD'S DEVELOPMENT**

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*Background:* Mental illnesses are amongst the major health care system's burden Worldwide, which is taking its step in every home due to unstable life conditions and adversities. These illnesses not only affect the lives of sufferers but also the people living around them, and so the parental psychiatric disabilities on pediatric population.

*Objective:* However, not much research currently exists on impact of parental psychiatric illnesses on different developmental stages of their children. Thus, this research paper aims to highlight the impact on different developmental stages of a child living with mentally ill parent along with its causative factors, strategies and recommendations to support them.

*Method:* Therefore, a systemic review of literature from 19 research articles (2008- 2013) from CINAHL and SAGE databases was conducted to study the impact of parental psychiatric disabilities on their child's development.

*Result:* The findings suggest that such children since their infancy to adolescence are vulnerable and can experience greater levels of physical, biological, emotional, social, psychological and behavioral problems according to their specific unattained developmental tasks. Besides hereditary factors, poor parenting, parent's emotional and mood disturbances, impaired parent-child attachment, conflict between parents and chaotic family life arising due to psychiatric disorders exaggerates the situation. In this way a child's development is jeopardized, creating obstacles for their successful transition towards a healthy adulthood.

*Conclusion:* Keeping in view of the increasing trends of mental illnesses globally, there is a dire need to implement certain preventive programs and interventions to support such parents and their children for improving their quality of life.

**Keywords:** Poor parenting, Hereditary, Conflicts

### 16.10

#### A STUDY OF SOCIAL CAUSES INVOLVED IN CHILD MORTALITY WITH SPECIAL REFERENCE TO PERI- URBAN AREAS OF KARACHI.

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**Introduction/Objectives:** Child Mortality is significant measuring indicator of health. The aim of this study was to find out the social causes and risk factor of child mortality in Peri-Urban areas. Province Sindh has poor child health indicators specifically rural Sindh as per PDHS 2007, infant death ratio 81 per 1000 live births and child death ratio 101 per 1000 live births. Both are highest to the other provinces of Pakistan.

**Methodology:** Researcher utilized to cross-sectional survey method to reach objectives. The study site was Peri-urban areas of District Malir in the Karachi, from Sep 2011 to Sep 2013. Children under 0 to 59 months of age were included. Structured questionnaire were used estimated research Population 92, 318. A two staged sampling technique was adopted. Randomly 79 Goth were selected from Rural Malir district and purposively 384 households were surveyed.

**Results:** A total of 384 cases were investigated. 69.7% infants, 30.2% child deaths. Gender specification was male 55% in infants and female 51% in child. 72.3% mothers and 56.9% fathers were illiterate, 79% mothers not use family planning method. 57% babies were low birth weight. 60.2% not immunized. 81% were ill. 38.7 % do nothing and home remedy. 68.7% used self-medication. 91% did not facilities in the health center for their child treatment.

**Conclusion:** A major percentage of population has not living a quality of life, unschooled, unsafe drinking water and insufficient sanitation facilities and lowly access to Health care facilities; all these

factors are significant relationship with the child mortality.

**Keywords:** Social Cause, Child, Mortality

### 16.12

#### COMPARISON OF LOWER URINARY TRACT SYMPTOMS (LUTS) AFTER VAGINAL AND ABDOMINAL HYSTRECTOMY

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**Objectives:** To determine frequency of lower urinary tract symptoms (LUTS) after catheter removal in women undergoing vaginal and abdominal hysterectomy performed for benign indications.

**Sample Selection Criteria:** Inclusion Criteria: •Age between 40 to 75 years. •All women giving consent for study. •Women undergoing hysterectomy for benign indications like fibroid, menorrhagia, uterovaginal prolapsed, and post-menopausal bleeding.

**Exclusion Criteria:** •Women with preoperative LUTS. •Women having concomitant surgery for urinary incontinence. •Women having intra operatively urinary tract injury (Iatrogenic.) •Women having indwelling catheter for more than 72 hours.

**Methodology:** Women undergo hysterectomy meeting for inclusion criteria will be enrolled in study, taking from obstetrics and gynecology department. Post operation catheter will be removed at least after 24 hour. First patients will be assessed after 24 hour of catheter removal to assess LUTS then at 1 week and finally at 4 week (follow up) after catheter removal. LUTS will be noted down as defined in operational definition along with age, parity, height, weight, BMI, co morbid, menopause, route of hysterectomy, indication of operation, presenting complain and duration of indwelling catheter. Patient will be followed till 4 week. Outcome (LUTS) will be assessed following & final outcome will be measured at the end of 4th week after catheter removal. 1. 24 hour after catheter

removal. 2. 1 week after catheter removal. 3. 4 week after catheter removal.

**Results:** A total of 76 women undergoing hysterectomy for benign indication were included in this study. Age distribution of the women is presented & average age of the women was  $51.72 \pm 8.30$  years. Similarly average height, weight, body mass index, duration of indwelling catheter and duration of surgery are also observed. Most of the women had multiparity i.e. 73.68% (56/76). Menopausal was observed in 50%. Regarding co morbid, 19.74% women were diabetic and 30.26% were hypertensive. Most common presenting complain of the women was something coming out from vaginal 32.9% followed by Postmenopausal bleeding 23.7%, Menorrhagia 19.7% and Irregular cycle 9.2%. Similarly most common indication of surgery was uterine fibroid, complete uterovaginal prolapse and cervical descent. Frequency of lower urinary tract symptoms after removal in women in both vaginal and abdominal hysterectomy was 32.9% (25/76), frequency needed to go wash room 28.9%, urgency was 22.4%, urge urinary incontinence was 14.5% and stress urinary incontinence was 10.5%. Rate of LUTS was 47.4% in vaginal hysterectomy and 18.4% was observed in abdominal hysterectomy ( $p=0.014$ ), frequency was also significantly high in vaginal hysterectomy as compare to abdominal hysterectomy ( $p=0.011$ ) while urgency, urge urinary incontinence and stress urinary incontinence was insignificant between vaginal and abdominal hysterectomy. Rate of lower urinary tract symptoms was also observed with respect to age groups and body mass index but insignificant difference was observed. In parity, only stress urinary incontinence was significantly high in those women who had grand multiparity ( $p=0.0005$ ).

**Conclusion:** In conclusion the results of our study showed that bothersome LUTS after catheter removal is only significant (P value is 0.024), for frequency of urine i.e. this particular urinary symptoms is more in vaginal hysterectomy group as compare to abdominal hysterectomy, other LUTS like urgency, SUI and UUI is has not significant means that there is no difference in both surgical group for a period of 4 week of post operatively

**Keywords:** Lower urinary tract symptoms(LUTS), vaginal Hysterectomy, Abdominal hysterectomy

### 16.13

#### ASSOCIATION BETWEEN OBESITY AND LIFE STYLE FACTORS IN CHILDREN PRESENTING TO THE OUTPATIENT CLINICS OF A TERTIARY CARE HOSPITAL IN PAKISTAN: A CASE CONTROL STUDY

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**Introduction:** The rising prevalence of childhood obesity continues to be of concern, with an estimated ten percent of school-aged children being overweight and a quarter of these being obese globally. Pakistan is a country in transition and now faces double burden of coexistent over nutrition and under nutrition. This study will be conducted to determine the associated risk factors of obesity among children presenting to outpatient clinics of a tertiary care hospital of Karachi so that recommendations for controlling these risks can be formulated. By doing so, the study shall serve the purpose of primordial prevention by identifying the risk factors earlier in childhood and thus help prevent the health consequences later in life.

**Objective:** To determine the association between life style factors (unhealthy diet, lack of sleep and physical inactivity) and obesity in children aged 5 to 16 years presenting to outpatient clinics of a tertiary care hospital in a case control study. Hypothesis: Null hypothesis: There is no significant association between obesity and at least two of the life style factors (unhealthy diet, physical inactivity and lack of sleep) in cases and controls.

**Material And Methods:** This study is being conducted in the Pediatric outpatient clinics of The Aga Khan University Hospital, Karachi.

**Results:** (Still in progress): Amongst the eating habits, eating vegetables less than twice a week, skipping breakfast, and eating between meals was significantly associated with obesity in children ( $p<0.05$ )

**Conclusion:** There is significant association between obesity and at least two of the life style factors (unhealthy diet, physical inactivity and lack of sleep) in cases and controls.

**Keywords:** Obesity, Lifestyle factors, Children

#### 16.14

#### APPLICATION OF ICF CORE SETS IN CHILDREN WITH SPASTIC CEREBRAL PALSY.

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**Background:** The International Classification of Functioning, Health & Disability (ICF), provides a new conceptualization for understanding health & disability. It applies different codes to the body structures, body functioning, activities & participation & environmental factors influencing quality of life. **Objective:** To apply brief ICF-CY core sets in children with spastic CP. Design: Descriptive cross sectional study.

**Methods:** A total 30 children with Spastic CP (age 1-6 yrs) were included in study conducted in AKUH Karachi. On the basis of history & examination of children, we applied brief ICF core sets to children with spastic CP to assess their functional status.

**Results:** Total patients were 30. Spastic diplegia was most frequent type seen 13(43%). In body structure: 23(77%) had severe impairment in structure of brain (s110). In body functions: more than 50% patients had severe impairment in mobility of joints (b710) & muscle tone function (b735). In activities & participation: more than 40% of patients had difficulty in walking (d450), difficulty in moving around different locations (d460) & difficulty in toileting (d530). In Environmental factors: majority of patients facing severe environmental barriers in their daily routine life.

**Conclusion:** Most common areas of impairments were body functions and activities & participation in our study. Environmental factors were major limitation in the care of CP. The application of ICF

Core Sets in this study provides a novel and standardized approach in describing the functional profile of children with CP. Through application of these core sets we can standardize the functional assessments of CP worldwide.

**Keywords:** ICF-CY, Core sets, Spastic CP

#### 16.15

#### LABOR ANALGESIA: TRAMADOL VS. PENTAZOCINE

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**Objective:** To compare the efficacy and safety of intramuscular Tramadol and Pentazocine during labor, in our women. Design: Double blind randomized trial. Setting: Secondary care hospital, Karachi, Pakistan.

**Methods:** 231 women, 114 in Tramadol group and 117 in Pentazocine group, were included in the analysis, with term singleton pregnancy cephalic presentation that were in active phase of labor and had a baseline VAS score of more than 7. Tramadol 100 mg and Pentazocine 30 mg intramuscular were given to assigned subjects. Pain was assessed at 30 and 60 minutes of drug administration on VAS score (0 – 10) and maternal satisfaction on Likert's scale (1 – 5) two hours after delivery. Maternal vital signs, nausea, vomiting, sedation, duration of labor, mode of delivery, APGARs at 1 and 5 minutes, NICU admission and need for Naloxone were recorded.

**Results:** The mean VAS score declined significantly in both the groups after analgesia (p-value<0.001), but no significant difference was observed between the two groups (p-value=0.839). Overall maternal satisfaction recorded at 2 hours of delivery, showed marginally significant difference in both the groups, with more women satisfied in Pentazocine group (p-value=0.05). No significant difference was observed for maternal and neonatal outcomes. Sedation was

found to be significantly more in Pentazocine group (p-value<0.001).

**Conclusion:** Tramadol and Pentazocine were found to be safe and equally effective for labor analgesia with comparable maternal and neonatal outcomes. So, either drug can be used for analgesia and labor.

**Keywords:** Labor Analgesia, opioids in labor, Tramadol vs Pentazocine.

### 16.16

#### CELIAC DISEASE WITH A DOUBLE BURDEN OF INTESTINAL TUBERCULOSIS AND SEIZURES – A CASE REPORT

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**Introduction:** Celiac disease (CD) is combination of an autoimmune disorder and food intolerance that occurs in genetically susceptible individuals following ingestion of gluten. CD is also associated with a number of immune mediated associations. We present a case of a 12 year old child, known case of Celiac disease, presenting with complaints of leg swelling, decreased oral intake and intermittent abdominal pain. Clinical examination revealed bilateral pedal edema and ascites. She was managed as Protein Calorie Malnutrition. During her first week of stay she developed issues of fresh bleeding per rectum followed by melena and hematemesis. CBC showed anemia and thrombocytopenia. An upper GI and lower GI endoscopy was done which showed diffuse oozing from terminal ileum, ulceration and edema of illeocecal valve. Due to suspicion of Tuberculosis, specimens were sent for Expert MTB/RIF assay, AFB culture, and Histopathology. TB was confirmed based on a positive GeneXpert and granuloma formation on biopsy, and patient was started on Anti-Tubercular therapy. The child developed seizures during stay, which was diagnosed as partial cerebral venous thrombosis.

She was discharged home seizure free on Levetiracetam and ATT.

**Conclusion:** Both intestinal tuberculosis and CD can cause malnutrition and failure to thrive, and a high index of suspicion is required to diagnose intestinal tuberculosis in CD. The effect of malnutrition as well as a common genetic association could play an important part in the increased risk of TB. There may be an autoimmune mechanism for celiac disease associated cerebral venous thrombosis as well.

**Keywords:** celiac disease, TB, Seizure

### 16.17

#### EFFECTS OF THE INTRA-PARTUM MALPRACTICE ON MOTHERHOOD AND CHILD HEALTH

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**Purpose:** Study aims to draw health care personals' attention towards intrapartum malpractice on motherhood and ways to overcome it.

**Method:** Clinical case study of 27 years old female patient having first gestation (G1) and Para one (PI) undergoing procedure of lower segment cesarean section is supported with recent literature to elucidate effects of intrapartum malpractice on motherhood. It is noted by strict time management and safe functional equipment intrapartum infection can be control easily. According to Mian et al (2012) "An important recurring theme in California Maternal Quality Care Collaborative interviews was hospital and cultural factors (notably, those related to time efficiencies) that affect physician practice variation. Competing demands on physicians for office appointments and for balance between work and home life, resulting in the multitasking physicians' impatience" (P.1196). Moreover, it should be considered that mortality rate of infants while perinatal hospital stay is indicator of quality care delivered in hospital. According to Robert (2012) one of important causes of perinatal mortality is intrapartum infection with associative

factors quality of care available in hospitals (P.188). Clinical mistakes which are due to human factor should be monitor via team work and strict monitoring with each other.

*Conclusion:* It is clinically implied with cultural context of Pakistan is that in public is not much aware of reproductive health. Cases are presented in hospital in chronic stage where intrapartm malpractice is another adding cause of maternal death or child health. Noncompliance with guideline or policies for infection control can leads to actual infections or death as well as life long disability of child like cerebral palsy, cerebral abscess and mental retardation. Which can be prevented and it also enhance hospital quality indicator

*Keywords:* Malpractice, Multitasking, HUMAN FACTOR

### 16.18

#### IMPACT OF EDUCATION ON SEEKING FAMILY PLANNING METHODS AND ANTENATAL SERVICES AMONG WOMEN IN SINDH. PDHS 2013 ANALYSIS

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*Introduction:* Despite the fact that contraceptive usage has increased over a period of time, there exists a Knowledge Attitude and Practice -gap regarding contraception. Literature reports that married women who attained primary and secondary plus level of education show increase probability of using family planning practices. The aim of this study was to determine the impact of education on the family planning and reproductive health indicators among the women in Sindh.

*Methods:* Secondary data analysis of Pakistan demographic and health survey (PDHS) 2012-013 was performed on the data set consisted of 3133 ever married females aged 15-49 years of age, representing from Sindh Pakistan.

*Results:* The mean age of the women were 32.5 years and mean age at marriage at 19 years. 41.7 % of the women were educated. The current

contraception method used by women was 28.2% among them 83% were using modern methods and 17% were using traditional methods. The unmet need for family planning is 52.8%. 43.2 % of the women seek antennal care. The contraception use among educated women were (aOR: 1.96, CI: 1.45, 2.64), unmet need for family planning (aOR: 1.69, CI: 1.24, 2.30), antenatal visit (aOR: 3.22, CI: 2.16, 4.78) and wanted last child (aOR: 1.83, CI: 1.06, 3.17).

*Conclusion:* The support and encouragement for women to complete formal education is essential in bringing about a socio-cultural change in attitude towards the social value of family planning. This study suggests that education can address the imbalance in decision making about family planning methods choices among women.

*Keywords:* Impact, Family planning, Sindh

### 16.19

#### BARRIERS IN ADOPTION OF IMPROVED STOVES: INQUIRY AMONG USERS, NON-USERS AND PROGRAM MANAGERS IN SINDH AND PUNJAB PROVINCES IN PAKISTAN.

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*Background:* Improved stoves are considered as the mainstay intervention for household air pollution due to biomass use. Several small scales stove intervention initiatives have been undertaken in Pakistan. However, no intervention has been seen to sustain. This article inquires about the barriers of adoption of improved stoves in two programs in the provinces of Sindh and Punjab, Pakistan.

*Methods:* This qualitative study was conducted in Kasur district in Punjab province and Dhabeji in Sindh during May-August, 2014. Two key-informants, in-depth interviews were carried out with program managers and six focus group discussions (3 each from improved and traditional stoves users) were conducted using semi-structured

questionnaire. The study explored the factors facilitating or inhibiting the adoption of improved stoves.

*Results:* Of total 48 women participated in the study who were main cook in the household, 18 were using improved and 30 were using traditional stoves. Women used improved stoves perceived that it decreases respiratory symptoms and illnesses, eye discomfort and prevent blackening of utensils and kitchen. Women were more satisfied with the traditional stoves, owing to the decreased amount of fuel and time consumed. Repairing or constructing a new stove was found easier with those using traditional stoves. Improved stoves once damaged or destroyed, women perceive it difficulty in repairing. Also the chimney is costly and not easily available for replacement.

*Conclusion:* Women perceive the health and social benefits of improved stoves. However, the main barrier in adoption for improved stoves were time for cooking and fuel consumption. Fuel-efficient stoves need to be designed to improve adoption along with strengthening of the program credit and supply-chain

*Keywords:* Improved stoves, qualitative research, Pakistan

## 16.20

### LITERATURE ANALYSIS PRESENTING: LACK OF EMPOWERED WOMEN IN TODAY'S SOCIETY

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*Background:* this papers addressing social aspect of a women's life in today's society. It highlights common incidences women's face within their culture boundaries due to lack of women empowerment and cultural norms. Therefore, women have inferior status in many society and they need to struggle for their basic human rights. As being in democratic world, it's obligatory for not only women but every individual to get their basic human rights to live a quality of life.

*Method:* Journal research article from 2009-2013 were chosen and these domain provide

enhancement and ongoing enrichment of care through significant investigation, application of best accessible care which promote effectiveness and advancement in women empowerment. In conclusion, it is evident that cultural values pressurized women status in society. It is essential to boost up women's rights in educational, political, social and health sector. Healthcare worker should be accountable for the welfare of women's right and should provide primary care. A step towards women empowerment will provide awareness about women's status and ultimately contribute in leading a healthy family.

*Keywords:* Empowerment, Human Rights, Awareness

## 16.21

### TEN YEARS REVIEW OF OBSTETRICAL POPULATION ADMITTED TO ICU

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*Background:* ICU admission of an ill obstetrical patient poses a real challenge both to ICU primary team and the attending obstetrician. Although obstetrical population may form a very small figure of total yearly ICU admission but mortality and morbidity is very high.

*Objectives:* To assess the obstetrical cases admitted to ICU, causes of admission, intervention required, rate of morbidity and mortality and associated risk factors for admission to ICU. Materials and methods: Retrospective record view of obstetrical patients admitted in ICU at Aga Khan University Hospital Karachi in last 10 years.

*Findings:* 61% of patients admitted to ICU with organ failure, 40% of the patients were admitted with shock and only 4.2% of patients were admitted because of anesthetic complications. 56% of patient presented with hematological complications and pre eclampsia was the main cause for admission. We also observed that 86.2% of patient was admitted for organ support mainly ventilatory support. In

terms of demographics the median age was 34 years and minimum length of ICU stay of 24 hours and maximum stay was 53 days.

*Conclusion/Recommendations:* Hemorrhage, hypertension, unsafe abortion, infections and obstructed labour are most common factors contributing to the higher mortality rate among pregnant women. Timely ICU admission with invasive hemodynamic monitoring (i/v fluid and blood transfusion with measuring CVP) and ventilatory support were the main interventions provided in all cases. *Keywords:* epidemiology; pregnancy; critical care.

*Keywords:* epidemiology, pregnancy, critical care

## 16.22

### ASSESSMENT OF DIETARY INTAKE OF PREGNANT WOMEN ATTENDING A SECONDARY CARE HOSPITAL

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*Karachi*

*Introduction/Background:* The maternal diet plays a vital part in shaping fetal development and health. Eighteen million low birth weight babies are born to malnourished mothers every year which is the leading cause of infant morbidity and mortality in developing countries. This demonstrates the significance of intervening before conception and throughout pregnancy. *Purpose:* Pakistan has had numerous national nutrition surveys previously, however, limited dietary intake information has been collected and there is dearth of information on dietary intake of women in general and in particular pregnant women.

*Material and Methods:* A cross sectional survey of 472 pregnant women selected from the antenatal clinics lists at Hyderabad, AKUH will be undertaken. Hb, weight height, MUAC and BMI will be recorded. A validated 56 items food frequency questionnaire will be used to analyze the dietary intake of pregnant women. The SPSS (version 14) will be used to analyze the data.

Descriptive tests will include means, standard deviation and ranges for the FFQ data. Multivariate analysis will be performed to measure the association of different factors at multivariable level and will report adjusted prevalence ratio with 95% confidence interval. We will treat P-value of less than 5% as significant.

*Results/Findings:* The study got ERC approval in January 2015 and will commence after the budget approval.

*Keywords:* malnutrition, pregnancy, Pakistani women

## 16.23

### PHYSICAL AND PSYCHOSOCIAL WELL-BEING OF PRESCHOOLERS SUFFERING FROM FATAL ILLNESSES

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*University, Karachi*

*Introduction:* Death is an inevitable conclusion to life, sustaining a truth that every human is born to die. Some people enjoy the essence of their lives with full courage however; few seize in the arms of life threatening illnesses. These illnesses not merely drag human life to a very depressing decline but also situate them in intense suffering. Likewise, a child suffering from fatal illness also embraces intense pain along with facing stern alterations in every aspect of his life. For such patients, pediatric palliative care can enhance their quality of life until death. *Objective:* To show the effects of life threatening illnesses on child development along with notifying that how immensely a preschooler suffers socially, psychologically and physiologically by the effects of these illnesses.

*Methods:* This paper reviews different literature from the year 2007 to 2014 viewing the effects of fatal illnesses on the physical and psycho-social well-being of preschoolers. Pub Med, Google scholarly, CINHALL and science direct are the referred search engines for this paper

*Results:* Literature supports that the children who suffered fatal illnesses develops physical problems



such as muscular weakness, myalgia and arthralgia due to the side-effects of chemotherapeutic drugs. Moreover, symptoms like fatigue, mouth sores, anemia, constipation, weight loss and vomiting give rise to nutritional imbalances that further deteriorates child entire well-being. Besides, social problems such as social isolation due to stigmatization along with the feeling of being indifferent from others lead to distorted self perception and internalizing problems.

*Conclusion:* In conclusion, fatal illnesses impose stern alteration in human life hence palliative care is the only path to grant them relief. For this, I recommend that infrastructure of funded hospitals and communities should be made better so that patients get socialize and exterminate toxic stress from their lives. Also, medical institutions should design courses regarding psycho-oncology to help nurses in dealing patient's psychological needs. Lastly, pediatric hospices should be established for improving child's health with enhancing their quality of life.

*Keywords:* Palliative Care, life and death, suffering

#### **16.24** IMPACTS OF DOMESTIC VIOLENCE ON WOMEN'S HEALTH

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*University, Karachi*

*Introduction:* Woman plays an imperative role in the society. Both woman and man have an equal right to participate in the society, to get education and to pursue their life goals according to their wishes and desires. But, today the view of society is still the same, considering women as inferior to men, and conferring men an authoritarian control over the women. This gender inequality has placed the women at augmented risk of domestic violence by men. Also, domestic violence impacts entire woman's wellbeing by divulging her to various negative health consequences. The most prevalent nature of domestic violence is intimate partner violence.

*Objective:* This paper intends to provide a deep insight about causes and effects of intimate partner violence on women's well-being.

*Method:* This paper reviews different literatures from the year 2002 to 2014 viewing the causes and impacts of domestic violence on women's health. PubMed, Google scholarly and science direct are the referred search engines for this paper.

*Results:* Literature supports that the factors of intimate partner violence can be elucidated in the light of different theoretical models. These include sociological, psychopathological, gender and family system theoretical models. In addition, the effects of intimate partner violence can be categorized into physical, psychological and sexual effects. Physical effects including fractures, bruises formation, chronic pain syndrome, head trauma and GI disorders. Sexual effects encompass unintended pregnancies, vaginal tearing, bladder infections, sexual dysfunctions and infertility. Psychological effects include post-traumatic stress syndrome, eating and sleep disorders, phobias and panic disorder, psychosomatic disorders, suicidal and homicidal ideations, substance abuse, depression and anxiety, and low self-esteem. *Conclusion:* In conclusion, IPV can occur in many different forms including physical, sexual and emotional. It deeply impacts on women's wellbeing by exposing her to various physical, sexual and mental health consequences. Therefore, efforts should be made at individual, societal and governmental level to enhance women empowerment.

*Keywords:* intimate partner violence, women's health, cause and effects

#### **16.25** FAMILY IGNORANCE TOWARDS THE END OF LIFE

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*Introduction:* "Dying is an integral part of life, as natural and predictable as being born". However, it becomes difficult when human body is clutched by

incurable illness. Especially, when untreatable infirmity grab hold a young child. Palliative care becomes crucial at such tedious times as it doesn't only deal with the physical need, but also tackle psychological, spiritual, social and sexual needs. At such critical time family serves as a primary caregiver and support system to the patient. However, when primary care giver becomes heedless, it increases patient's suffering and psychological turmoil. *Objective:* To show causes and effects of family ignorance and how a child suffers emotionally, psychologically and socially by parents negligence.

*Methods:* This paper reviews different literatures from the year 2008 to 2014 viewing the effects of family ignorance towards the end of life. PubMed, Google scholar and science direct are the referred search engines for this paper.

*Results:* Literature supports that child who suffers from loss of parental attention at such crucial time can disturb their self-esteem and he may consider himself as a neglected child. It could also lead to emotional insecurity, low self-confidence, devaluing self, over-whelming stress and feeling of worthlessness. Nurse can reduce psychological turmoil by family encouraging family to get involved in patient care and using therapeutic approach to foster trusting relationship and to ventilate client's feelings.

*Conclusion:* Family plays a key role in patient satisfaction. If this satisfaction gets depreciated due to parental ignorance it could lead to psychological distress. However, providing holistic care and covering all aspect of palliative care is the key role of nursing profession to ease the journey of patient from life to death. Therefore, the nurse must join the specialty of palliative care to alleviate patient's suffering and enhance quality of life. Utilization of Evidence (Actual or Potential): Potential evidences are used

*Keywords:* family ignorance, palliative care, child psychology

## 16.26

### COMMUNITY BASED MANAGEMENT OF FAST BREATHING IN INFANTS AGED <60 DAYS: A DOUBLE-BLIND, RANDOMIZED PLACEBO-CONTROLLED TRIAL IN LOW-INCOME SETTLEMENTS OF KARACHI

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*Background:* According to WHO, infants presented with fast breathing (RR $\geq$ 60) should be considered of hospital referral. However, due to the high prevalence of fast breathing, referral may increase the burden on tertiary care hospital as well as source nosocomial infections. In our observational cohort, infants with isolated fast breathing can be managed at home without antibiotics. The purpose of the study is to determine strategies for optimal treatment of isolated fast breathing in young infants in a trial design conducted in primary care settings.

*Objective:* To assess if 7 day's treatment of oral amoxicillin is equivalent to placebo in young infants with fast breathing in out-patient setup.

*Methods:* This double blind randomized placebo controlled trial was conducted at community setting run by the Department of Paediatrics Aga Khan University, Karachi, Pakistan. Infants of  $\geq$ 60 b/min and oxygen saturation of  $\geq$ 90% were determined for eligibility. After informed consent treatment was assigned through the serial number. Randomization was taking place at clinical trial unit, Aga Khan University. Each enrolled infant were followed daily for 7 days by community health workers except on day 3 and 8 when the infant was seen by a doctor, and on days 11 and 14th of enrollment. The primary outcome was treatment failure. The data was recorded in case report forms. The trial was stopped based on DSMB recommendations.

*Results:* There were no significant differences in proportion of treatment failure in placebo vs. amoxicillin arm. Overall 37 infants failed treatment by day 7 [25 (5.9%) placebo arm and 12 (2.8%) to Amoxicillin arm]. The difference of proportion of treatment failure was (RD 3.1, 95% CI: 0.3, 5.8).

The proportions of adverse events are similar across the group except two deaths which were in placebo arm only. The proportion of relapse is evenly distributed across treatment arms

*Conclusion:* In the results of this study, we conclude that the benefit of antibiotics in young infants with isolated fast breathing should be treated with oral antibiotics. There is a need to revise the WHO guidelines on management of isolated fast breathing.

*Keywords:* Young infant, fast breathing, placebo controlled trial

### **16.27** EFFECTIVENESS OF FOOD/NUTRIENT BASED INTERVENTIONS TO PREVENT STUNTING AMONG CHILDREN UNDER FIVE IN THATTA AND SAJAWAL DISTRICTS, SINDH PROVINCE

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*Introduction/Objective:* Evidence suggests that targeting nutrition interventions earlier in life, before children become stunted, might be more effective for reduction of stunting rates. The broader objective of this survey was to provide baseline indicators and frame work for the implementation of stunting prevention project in districts Thatta and Sajawal, Sindh.

*Methods:* A cross-sectional survey was conducted in 29 Union Councils of study area. Target population included pregnant women, lactating mothers and children under the age of five years.

*Results:* Baseline household survey collected information from 4,350 households. About 77% of the sample population had no education at all, 79% households had access to improved water and 78% to electricity. Prevalence of Stunting among the children under-five was 48.2%, and prevalence was slightly higher (51%) in boys compared to girls (45%). Sixteen percent of children were wasted

while 2.5% children were overweight. The proportion of wasting in both genders and age groups was not remarkably different. 80.4% children were moderately anemic and 6.4% were estimated severely anemic. Only 37% of infants under-six months were exclusively breastfed, while 68% of these children were predominantly breastfed. The prevalence of minimum acceptable diet from 6-59 months old was 7.9%. Overall, 57% women had normal weight, 33.4% were thin and 9.7% were overweight/obese.

*Conclusions:* The findings of baseline household survey revealed that malnutrition was widespread among the under- two and under five year old, and has not improved since NNS 2001. The food/nutrient based interventions together with improving the IYCF and hygiene practices should be targeted to improve malnutrition.

*Keywords:* Effectiveness, Stunting, Prevention

### **16.28** HYPERMANGANESEMIA WITH DYSTONIA, POLYCYTHEMIA, AND CHRONIC LIVER DISEASE (HMDPC) DUE TO MUTATION IN SLC30A10 GENE

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Environmental manganese (Mn) toxicity causes an extrapyramidal, parkinsonian-type movement disorder with characteristic magnetic resonance images of Mn accumulation in the basal ganglia. We are reporting a case series of 3 siblings with autosomal recessively inherited syndrome of hepatic cirrhosis, dystonia, polycythemia, hypermanganesemia & basal ganglion hyperintensity on T1 weighted MRI brain due to mutations in the SLC30A10 gene, encoding a Mn transporter. It is highly expressed in the liver and brain. After ruling out common disorders, literature search guided us the Hypermanganesemia as possible explanation. Following which blood Mn levels were checked in affected patients & were found to be markedly elevated. We ruled out the

environmental Mn exposure, and checked Mn content of their drinking water which was normal. So profound elevation of Mn in our patients with dystonia, Polycythemia, characteristics MRI findings & one sib had evidence of chronic liver disease suggested an inherited form of disorder called Hypermanganesemia with dystonia, polycythemia, & cirrhosis (HMDPC). DNA sample of these patients has been sent to UCL Institute, London to identify the SLC30A10 mutation analysis. The index case shows the missense mutation of SLC30A10 gene, while other 2 sibs report is pending. We are treating these patients with Chelation therapy with intravenous disodium calcium edetate (EDTA) infusion 5days/ 4 weekly. We wish to highlight this rare disorder, which together with Wilson's disease is the only potentially treatable inherited metal storage disorder to date & can be fatal if untreated due to complications of cirrhosis & basal ganglion involvement.

**Keywords:** Inherited hypermanganesemia, Dystonia, SLC30A10

### 16.29

#### TO DETERMINE THE RATES, PROPORTION AND RISK FACTORS OF COMMON BIRTH DEFECTS IN NEWBORNS IN KARACHI

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**Background:** Birth defects or congenital anomalies are one of the leading causes of infant and childhood deaths and long term disability. A registry system for congenital anomalies is an entity which is well recognized throughout the world. European Surveillance of Congenital Anomalies (EUROCAT) and Congenital Anomaly Register and Information Service (CARIS) are the successful examples of how occurrence of anomalies are being recorded, monitored and prevented in European countries. In Pakistan, data is scarce regarding the

incidence and prevention of congenital anomalies. A registry or surveillance system for keeping a tract of congenital anomaly is lacking as well.

**Objective:** To determine the rates, proportion and risk factors of common birth defects in newborns in Karachi.

**Methods:** Study design & setting: This is a descriptive cross sectional study, which includes all the possible types of anomalies that are being delivered in Aga Khan University Hospital Karachi, Pakistan. **Study duration:** The study is proposed for five years whereas pilot testing is being conducted for one year from October 2014 to October 2015. Ethical approval has been obtained from university ethical review committee. **Inclusion criteria:** The study population will include pregnant women diagnosed with fetus congenital anomaly (by antenatal screening or clinical examination), delivered, pregnancy terminated or spontaneous abortion at this hospital. **Exclusion criteria:** Women not consenting will be excluded from the study. **Data Collection** is in process for pilot study. In addition, authors are in process of exploring granting opportunities.

**Keywords:** birth defects, childhood death, spontaneous abortion

### 16.30

#### CALORIC INTAKE AND FOOD GROUPS AMONG URBAN AND RURAL LACTATING WOMEN AND YOUNG CHILD (1-3YEAR OLD) OF PAKISTAN: FOOD DUPLICATE STUDY

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**Background:** A great majority of women and young children suffer from malnutrition in developing countries. Assessment of nutritional status is often inconsistent due to subjective nature of measurement tools. **Objective:** assessment and measurement of calorie intake, macro and micronutrients, for women and young children is an important first step.

**Objective:** To determine the food groups and daily intake of calories of young child (1-3 years) and breastfeeding mother in urban and rural communities of Pakistan.

**Methodology:** We are recruiting pregnant women from Obstetrics and Gynecology Unit of Qatar Hospital in Karachi and Gambat Institute of Health Sciences. A total of 100 families, 50 each from urban and rural location are being recruited and enrolled. Families are approached one month after delivery at their households and three-day duplicate food samples are collected for the mother and young child (1-3 year old). A structured food frequency questionnaire (FFQ) is administered and food diary is maintained for three days. Each item of the food sample is weighed separately and processed for determining caloric, macro and micronutrient intake. **Discussion:** This is the first study which will provide objective measure of calories, macro and micronutrients among breastfeeding women and children in urban and rural areas in Pakistan.

**Keywords:** food duplicates, food frequency questionnaire, maternal health

### 16.31

#### SUBFERTILITY: A CURSE TO WOMEN ONLY

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**Introduction:** Becoming parents commence new life for men and women. It's important for one's sexual health to reproduce. But there are couples who cannot generate a new life; they are being stigmatized as "infertile" by the society. The condition becomes more critical when gender biases are associated with it. In our society, infertility is usually linked with females. Even if both male and female have fertility issues, miseries are only for women.

**Method:** Literature review was done in order to gain insight on the issue. About 10 articles in the last 10 years were reviewed.

**Result:** Literature suggests that term subfertility is used for the couple who cannot give birth to a baby

because both partners have reduced fertility (Davidson, London & Ladewig, 2012). But it has been observed in the society that women only suffer. Significance of this incident should not be underrated as it has always been the dark side of our society. Among infertile couples men are considered as passive and faultless by the society as it is the domain of women (Mumtaz, Shahid & Levay, 2013,).

**Conclusion:** The curse associated with infertility especially among women is basically due to stigma by society and gender differences prevailing in our society. Our work as a health care provider is to aware the community regarding infertility and to remove misconceptions so that society don't stigmatize infertility. Moreover, work should be done for the acceptance of male infertility, formulate support groups for such couples for their help in hard time.

**Keywords:** Subfertility, Reproduce, Gender

### 16.32

#### PALLIATIVE CARE: A LADDER IN PROGRESSING THE PHYSICAL AND PSYCHOSOCIAL HEALTH OF AN INFANT

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**A Ladder in Progressing the Physical and Psychosocial Health of an Infant Introduction:** Death and dying is the natural phenomenon in every human's life. At a certain stage of life, illness has enormous impact on the patient, parent and their family members. Moreover, survival from certain disease might be shortened, but the treatment facilities available for all intricate illness. Similarly, for the terminal illness and end stage of life the palliative care is an imperative element for the individual's life and the family members. Palliative care is the pathway that ameliorates the quality of life for those suffering from the terminal illness.

**Objective:** This paper intends to discuss the physical and psychosocial impact of life threatening illness on a child's health.

**Methods:** This paper reviews different literature from the year 2007 to 2014 viewing physical and psychosocial health of the infant client with cancer. PubMed, Google scholarly and science direct are the referred search engines for this paper.

**Results:** Literature supports that physical and psychosocial aspect is the essential components that trigger the patient's and family's function pattern. Some common physical symptoms include pain, deviation in primitive reflex i.e. sucking reflex, rooting reflex, fever, nausea and vomiting, disturb sleep pattern, weight loss and nutrition imbalance. Moreover, psychosocial aspects should also be given equal attention. This includes social isolation, decrease responsiveness and lack of interest in playing ultimately impacting the child development.

**Conclusion:** Palliative care is the significant component in the life-threatening illness as it provides a firm support physically and in all major aspects of human life like psychological, psychosocial and spiritual. Also, it assist in improving patient's overall well being. Furthermore, health care professional plays an integral role in providing a quality of care to ease patient's suffering, and to help them cope effectively in the entire phase of their disease process.

**Keywords:** palliative care, child health, physical and psychosocial aspect

### 16.33

#### A STEP FORWARD: ASSESSING PHYSIOLOGICAL AND PSYCHOSOCIAL NEEDS OF A PEDIATRIC CLIENT

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**Introduction:** Death and dying are inevitable experienced by every individual. But it becomes complex when certain diseases take control of

human body and limit their life span. At such point in time palliative care is unavoidable. Palliative care is not just limited to determine a patient on the basis of physical, psychological, emotional and spiritual aspect but to a certain extent it is a network of care which focuses on preventing and relieving suffering of patient and their families by providing highest quality of life (QOL).

**Objective:** This paper intends to focus on physical and psychosocial aspect of child's health when confronting with life limiting illness.

**Methods:** This paper reviews different literatures from the year 2006 to 2014 showing variation in physical and psychosocial domains in a child suffering from life threatening illness. CINAHL, Google, science direct and Springer link are the referred search engines for this paper.

**Result:** Literature supports that fatal illness impacts child physical and psychosocial needs as it totally affects a person's level of functioning. Some common physical symptoms includes mouth sore, nausea, paling of skin, loss of appetite which ultimately leads to weight loss and hindrance in level of functioning. However it imposes dependency on caregivers and social relationships are compromised. Moreover, psychosocial symptoms that require unique approach include level of depression, uneasiness, isolation and worries regarding illness which ultimately affect his coping mechanism.

**Conclusion:** Palliative care is essential for providing quality care for patients suffering from life threatening illness. Thus, it is an interdisciplinary team approach that focuses on comfort and quality of life rather than decreasing patient suffering. Therefore, efforts should be made at individual, societal and governmental level to minimize patient's level of distress.

**Keywords:** palliative care, physiological and psychosocial domains, life threatening illness

### 16.34

#### UNDERSTANDING MATERNAL DECISION MAKING AUTONOMY IN RURAL PAKISTANI WOMEN ABOUT CHILD AND HER OWN HEALTH

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*Background:* Emerging literature shows that women's autonomy in decision making may mediate woman's own physical and mental wellbeing, as well her child's survival, growth and development. As Pakistan has poor child and maternal health indicators, it is important to study maternal autonomy. *Objectives:* The objective of this study is to describe trends of women's, decision making regarding her and child care, health and its association with maternal education and age from a rural setting in Naushero Feroze, Pakistan.

*Methods:* A questionnaire was developed and tested in the setting before use. It was based on maternal report of decisions for child care, health and for her own health: whether the decisions were done by her, if it was a shared decision or decision was taken by someone else. Twelve hundred and ninety four mothers with young children were interviewed. This assessment was part of larger battery of maternal assessments.

*Findings:* Mothers were more autonomous in deciding child's food (Alone = 71.9%, shared = 15.3%, someone else = 13.1%). Less than half of mothers could decide when to seek medical help for child, (Alone= 41.7 %, shared = 24.8 %, someone else = 33.5%). More than half of mothers couldn't decide alone about family planning (Alone= 21.2 %, shared = 53 %, someone else = 21.8%). About one third of mothers could decide alone for medical help when they fall sick (Alone = 34.2%, shared = 33.6 %, someone else = 32.1%). Similarly 33% mothers could decide for place of deliver and antennal checkups (Alone = 33, Shared = 38.8, someone else = 25.6). Maternal decision making had small positive significant correlation with maternal education ( $r = .20$ ,  $p = 0.00$ ), and no association with age ( $r = .07$   $p=0.005$ ) was found.

*Conclusion:* Maternal autonomy was restricted in district Naushahro Feroze for child and maternal health. Child health and development intervention programs need to consider this aspect in their design.

*Keywords:* Maternal autonomy, Decision making, Child health

### 16.35

#### FEMALE GENITAL TRACT FISTULA: A LITERATURE REVIEW OF CAUSES, PSYCHOSOCIAL IMPACT AND COPING STRATEGIES.

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WHO refers maternal health to "the health of women during pregnancy, childbirth and the postpartum period". Improvement of maternal health is amongst the United Nations millennium development goals and, one way of doing this is by preventing and managing genital tract fistula. According to WHO (2014) each year, between 50000 to 100000 women around the world develop it. Genital tract fistula is a devastating injury in which an abnormal opening between a woman's bladder and vagina is formed resulting in urinary incontinence, leading to physical and psychosocial impact on the woman. It is congenital or caused by obstructed labour due to prolong pressure on vaginal tissues, rape, or sexually transmitted infections .Fistula imposes lifelong isolation, shame and stigma, as women are typically rejected by their communities, families, and unable to work or participate in organized social activities (Peterman A, Johnson K, 2008). It is evident from a crosssectional study in the International Journal of Tropical Disease & Health that these women have adopted certain coping strategies such as hiding from public, strict hygiene, drinking more eating less, ignoring comments, reverting to prayers and church and keeping busy in handicraft making (Kabayambi J et al, 2014).In order to combat this problem there should be policy making, increased public awareness, prioritizing of woman's

reproductive health especially in developing countries, expanding access to emergency obstetric services, and creation of fistula repair centres. Alleviation of illiteracy and positive attitude towards women is also a fundamental change and need. References: 1. Kabayambi J, Barageine JK, Matovu JKB, Beyeza J, Ekirapa E, Wanyenze RK. Living with Obstetric Fistula: Perceived Causes, Challenges and Coping Strategies among Women Attending the Fistula Clinic at Mulago Hospital, Uganda. *Trop. Med Int Health* 2014; 4(3): 352-61. 2. Peterman A, Johnson K. Incontinence and trauma: Sexual violence, female genital cutting and proxy measures of gynecological fistula. *J. Soc Sci Med* 2008; 12:006. 3. WHO 10 Facts on Female Genital Tract Fistula, May 2014.

*Keywords:* Genital Tract, Fistula, Coping

### 16.36

ATYPICAL KAWASAKI DISEASE OR EVOLVING SYSTEMIC JUVENILE IDIOPATHIC ARTHRITIS – DIFFERENT ENTITIES WITH SIMILAR PRESENTATIONS: A CASE SERIES OF TWO PATIENTS

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Kawasaki disease (KD) is an acute febrile condition seen in children. However, it is also well recognized that some patients do not fulfill the classic diagnostic criteria for the diagnosis of Kawasaki Disease. The incomplete form of Kawasaki Disease is termed as 'Incomplete KD' or 'Atypical KD'. We present a case series of two patients with JIA (Juvenile Idiopathic Arthritis), both of whom were initially treated as Kawasaki, however showed no improvement, and improved drastically when given methylprednisolone. Patient 1, a six year old girl, who initially presented with fever and a maculopapular rash, was refractory to two doses of intravenous immune globulin and therefore was started on methylprednisolone, to which she responded dramatically. Patient 2, a two year old

boy, presented with cracked lips, periungual skin peeling and swollen palms and feet. The left anterior superior cervical lymph node was palpable was refractory to a single dose of IVIG, along with aspirin, and just like patient 1, also showed great improvement on methylprednisolone. Patient 2 had lack of tapering of coronary vessels on echocardiogram, suggestive of Atypical KD. In both the cases, the patients presented with joint pain after being initially treated for Kawasaki disease. So, were these cases of incomplete Kawasaki refractory to intravenous immune globulin therapy or systemic juvenile idiopathic arthritis? We suggest that physicians should be cognizant of the fact that they must individualize every patient's management to the best of their knowledge and judgment, rather than merely going by the guidelines.

*Keywords:* Atypical Kawasaki, JIA, Children

### 16.37

EMPOWERING PROFESSIONALS IN EMERGING PEDIATRIC ENVIRONMENTAL HEALTH (PEH) IN DEVELOPING COUNTRIES, A LITERATURE REVIEW.

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As we are heading towards industrialization and economic development, environmental hazards are increasing and it is becoming difficult to achieve less threatening environment for children. According to the WHO (2013) more than 30% of the global burden of disease in children is prevalent due to environmental factors. Systemic review of literature from 10 research articles from 2006-2014 was conducted through electronic medium by using search engines. The literature evidently highlights that children's health is a matter of concern. Developed countries have made significant strides in improving and protecting children's health; however in developing countries this issue is relatively at low priority, which needs to be analyzed. This systematic review is aimed to



highlight the significance of building expertise in the field of Pediatric Environmental health (PEH) particularly in developing countries. It is found that PEH is emerging as a separate field in the health care and by incorporating PEH education in medical and nursing curriculum it has provided advance knowledge and practice to health care professionals through which the number of preventable illnesses and deaths in children and adolescents are reduced. Moreover, we need to initiate Pediatric Environmental health special units (PEHSUs) across the developing countries in empowering health care professionals and also parents, in order to prevent, recognize, manage, and improve environmental related diseases in children.

*Keywords:* Environmental Health, developing countries, child health

### 16.38

FREQUENCY OF HYPERBILIRUBINEMIA AT 72 HOURS OF LIFE IN TERM NEWBORNS WITH A HIGH-INTERMEDIATE RISK SERUM BILIRUBIN LEVEL AT 48 HOURS OF LIFE, AT A TERTIARY CARE HOSPITAL IN KARACHI.

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*Objective:* To determine the frequency of hyperbilirubinemia at 72 hours of life in term newborns with a high-intermediate risk serum bilirubin level at 48 hours of life, at a tertiary care hospital in Karachi. Study design: Cross sectional study Place and duration of study: Well baby unit at Aga Khan University Hospital Karachi, from January 2014 to present. Background: Neonatal jaundice is common affecting over half (50-60%) of all babies in the first week of life. Severe jaundice can result into significant morbidity in the form of Kernicterus. There are studies available regarding neonatal hyperbilirubinemia with underlying risk factors; however, data for significant hyperbilirubinemia in term healthy newborns is missing. This study will help to anticipate and manage term healthy neonates with

hyperbilirubinemia and to established guideline to prevent kernicterus.

*Methodology:* All term newborns delivered at Aga Khan University Hospital whose TSB levels are done at 48 hours of life are being approached. Subjects fulfilling the inclusion and exclusion criteria are being enrolled after acquiring parental consent. Confidentiality of participants is being ensured by keeping all data in lock & key. Data is being collected on a proforma and include basic demographic information, including gestational age, birth weight, gender, bilirubin level at 48 hours, baby and mother blood group. The study population is followed till 72 hours of life to determine the repeat TSB level. Frequency and percentages will be calculated for gender of the baby, mother and baby blood group and hyperbilirubinemia. Post stratification chi-square test will be applied, taking P-value of  $\leq 0.05$  as significant.

*Results:* Study in progress. Results will be presented as to what happens to level of bilirubin in term healthy newborns, those initially do not require management for neonatal jaundice.

*Keywords:* neonatal hyperbilirubinemia, neonatal jaundice, jaundice in term healthy newborn

### 16.39

SCHOOL VIOLENCE IN PAKISTAN

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*Introduction:* Childhood should be carefree, playing in the sun; not living a nightmare in the darkness of the soul. This paper will discuss about the school violence and its types, like corporal punishment, verbal and sexual abuse etc, in Pakistan. Its causes in our society and its impact on vulnerable population. Additionally, it will discuss some of the recommendation and laws which are helpful for the victims and some prevention methods. Nowadays, this kind of violence is common in schools in Pakistan. School violence is defined as multi-faceted construct that involves both criminal acts and aggression in schools, which inhibit development and learning, as well as harm the

school's climate. Violence affects the environment of the school and hinders the learning of the students. A survey was conducted in 2012 by Human Development Resource Centre, which concluded that about 43% of all types of punishments were reported by children in government primary schools, about 30% in government middle schools, 10% in government high schools, and 16% in private schools of Pakistan. Parents, School management, Teachers, Health care professionals and Government can stop.

*Material and Methods:* Journal articles from years 2008 to 2014 were thoroughly studied about the school violence and to prevent it, with the help of parents, government and school management.

*Result:* After literature review, it concluded that school nurses can educate families that how they can talk and give time to victimized child for verbalizing their feelings. She should collaborate with the school management and can make sure the children safety. School administration should arrange prevention programs and give knowledge about self-protection to the children. Furthermore management should assign well trained, educated and professional teachers, who can understand the child's mentality. With the collaboration of the provincial assemblies school administration should work on the implementation of laws and policies against violence. We should refer the students who are at risk or victim of abuse to NGOs like, "community model schools" as they provide social protection to the students, counsel students and teachers, conduct workshops related to abuse for parents and employers.

*Conclusion:* All in all, school violence on students is increasing day by day in our country, having a bad impact on educational and physical development of the child. It is violating the child's right to protection, education, and development. Government, Parents and school management has to make sure the safety and security of the student in schools in all provinces of Pakistan. So that parents can send their boys and girls to the schools as they are the shining future leaders of our country.

*Keywords:* mental stress, stigma, role of government

## 16.40

### BORDERLINE MUCINOUS TUMOURS OF THE OVARY: EXPERIENCE AT A MAJOR CENTER FOR HISTOPATHOLOGY IN PAKISTAN

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*Objectives:* To observe the outcome of patients with Borderline Mucinous Tumours (BMTs) of the ovary diagnosed over a period of ten years at a tertiary care hospital.

*Methods:* A retrospective study was performed over a period of 10 years, from 2003 TO 2012. A total of 73 cases diagnosed as BMTs of the ovary during the period, were retrieved and follow up was taken for the disease outcome. Favourable outcome was defined as recurrence free survival, without chemo or radiotherapy, whereas poor outcomes were defined as recurrence and death of the patient.

*Results:* Mean age was 40.95 years. Of the 71 patients, follow up was available for 48 patients. Out of the 48 patients, 3 patients died. Of these 3, 2 died 2 at a period of 2 years and 6 years respectively, after initial surgical resection. The duration of survival for the third patient could not be known. All 3 patients were above 50 years of age at the time of initial surgical resection. One of these 3 patients had concurrent Benign Mucinous Cystadenoma of the appendix, and had also received chemotherapy. Another had serosal implants on the appendix and colon. The capsules of the ovarian cysts in both of these patients were breached. The capsule of the ovarian cyst was intact in the third patient, who, however, had evidence of endometriosis in the contralateral ovary. In this patient the cause of death could not be attributed to the ovarian cyst with full certainty. Of the 45 patients who were alive and healthy at the time of follow up, 2 had foci of microinvasion. Capsule of the ovarian cyst was intact in 35 cases and ruptured in 5. Status of capsule could not be determined in 5 patients. Out of these, tissue blocks were received for second opinion in 2 cases and we did not receive the surgical specimen; while in 3 patients, the cyst was received in multiple pieces.

**Conclusion:** - BMTs of the ovary are associated with favourable outcomes in most instances. - Adequate sampling according to the size of the cyst is very important. - The possibility of metastasis should also be ruled out even in borderline tumours.

**Keywords:** Borderline Mucinous Tumours, Ovarian tumours, Cystadenocarcinoma

#### 16.41

#### AWARENESS OF CHILDHOOD IMMUNIZATION AMONG PREGNANT WOMEN

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**Objective:** To assess the level of awareness of childhood immunization among pregnant women.

**Background:** Immunization remains one of the most important ways of preventing outbreaks of deadly diseases. Even with full-fledged active EPI programs initiated in Pakistan, the percentage of children getting vaccinated remain far below our required levels. Infant mortality in Pakistan is highest among SAARC countries, which at present stand at 70 deaths per 1,000 live births, according to a report compiled by the Society for the Protection of the Rights of the Child (SPARC). It also states that one child dies every minute from curable diseases. Hence, immunizing children against preventable diseases would be the sole strategy in acquiring statistics of low infant mortality due to such diseases.

**Methods:** Four hundred pregnant women were interviewed for a cross-sectional study in both OPDs and wards of Lady Dufferin Hospital and JMCH Karachi. The questionnaire contained a total of nineteen questions. All of them were self asked in local language.

**Results:** A significant number of child bearing women (81.5%) had good knowledge about childhood immunization and are likely to get their children vaccinated.

**Conclusion:** The higher the people are aware regarding childhood immunization, the more they

are likely to get their children vaccinated. The level of awareness directly correlates with the level of education of pregnant women. This tells us the literacy rate along with efficient immunization campaigns can help us fight against the war of high infant mortality rate against curable diseases.

**Keywords:** Awareness, Childhood Immunization, Pregnant Women

#### 16.43

#### SOCIOECONOMIC AND GEOGRAPHIC DISPARITIES IN THE BURDEN OF MATERNAL NIGHT BLINDNESS IN SOUTH ASIA

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**Objective:** To examine the burden of maternal night blindness in South East Asia and identify disparities by socioeconomic status and geographic region.

**Methods:** We analysed population-based data from Demographic and Health Surveys (DHS) on maternal night blindness undertaken in five South Asian countries during 2004 to 2009. Women who gave birth in the five years preceding the survey were asked if they had night blindness during their last pregnancy. **Results:** Overall, 2.8-15.8% women in these countries reported having night blindness during their last pregnancy. The rate of maternal night blindness was 6.5% (95% CI, 5.8, 7.2) in Bangladesh, 8.9% (8.5, 9.3) in India, 2.8% (2.2, 3.5) in Maldives, 15.8 % (14.7, 16.8) in Pakistan and 12.9 % (11.7, 14) in Nepal. After exclusion of women who also reported daytime vision problems (as currently recommended), the prevalence rate of maternal night blindness was 5.6% (5.3, 5.9) in India, 5.2% (4.5, 6.0) in Nepal, 4.7% (4.0, 5.3) in Pakistan, 3.1% (2.6, 3.6) in Bangladesh and 1.7% (1.2, 2.3) in Maldives There were striking disparities in the burden of night blindness by SES and urbanity.

**Conclusion:** Maternal night blindness is widespread in South Asia, with large disparities by wealth

index, education and urbanity. This knowledge should help in mobilizing resources for prevention.

*Keywords:* Night blindness, women, eye

#### 16.44

#### VARIOUS PRESENTATIONS OF CELIAC DISEASE IN CHILDREN PRESENTING TO A TERTIARY CARE HOSPITAL IN PAKISTAN

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*Introduction:* Celiac disease is an autoimmune gluten sensitivity that has come up as an emerging issue in Pakistan over the past years with regional prevalence comparable to that in America and Europe. It has not been the subject of much research in Pakistan and given the morbidity and mortality associated with it, it is important to identify its presenting features and other characteristics among the Pakistani population.

*Methods:* A retrospective case review of all the patients (n=62) who underwent duodenal biopsy at AKUH for suspected Celiac disease was carried out using a self-structured questionnaire.

*Results:* The mean age of presentation was 6 years. The gender predilection of Celiac disease in our study was males (62.9%). 5.3% patients had a first degree relative with the same disease. 37 of the 62 patients diagnosed to have Celiac disease presented with typical features. Atypical and mixed presentations were seen in 15 and 7 patients, respectively. Amongst the typical symptoms, the most common presenting complaint was chronic diarrhea (89.2%) followed by bloating and abdominal distension (48.65%). Tissue transglutaminase antibody (TTG-A) was found to be positive in 96% (50 out of 52) of the patients in which it was tested.

*Conclusion:* Our data is not consistent with previous studies that pointed out that atypical symptoms are more common among Pakistani patients with Celiac disease. Further studies are required to reach at a

definite conclusion. TTG-A is likely to be a sensitive marker of Celiac disease in the Pakistani population as well.

*Keywords:* Celiac disease, presentations, Pakistani population

#### 16.45

#### PSYCHOMOTOR DEVELOPMENT UP TO 24 MONTHS: MEASUREMENT ISSUES AND SOURCES OF VARIABILITY IN AN HIV-EXPOSED POPULATION

*Patricia Kitsao-Wekulo, Penny Holding, Christopher King*  
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*Introduction:* Studies in Africa demonstrate an association between in utero exposure to HIV infection and children's developmental outcomes, even for uninfected children. The current study sought to investigate sources of variability in outcome for both HIV exposed and non-exposed infants.

*Method:* The offspring of pregnant women enrolled into the study through one rural and one urban district hospital were followed up from birth to 24 months. Information on disease exposure in utero was obtained via histological tests at birth. Anthropometric measurements were taken. Using a locally developed and validated tool, the Kilifi Developmental Inventory (KDI), children's psychomotor skills were assessed at 6, 12, 18 and 24 months. Univariate and multivariate analyses were used to examine various associations.

*Results:* Undernourished children in both groups scored consistently lower than their well-nourished counterparts at all ages. Significant gender differences were observed within the non-exposed group at 24 months. At 12, 18 and 24 months, both exposed and non-exposed rural children had significantly higher scores than urban children. Area of residence predicted outcome at 12, 18 and 24 months. Weight-for-height and weight-for-age predicted performance in the non-exposed group at

12 and 18 months, respectively. Gender was also associated with outcome within the non-exposed group at 24 months.

*Conclusion:* The variability observed in KDI scores suggests that strategies to mitigate the effects of modifiable risk factors should consider different factors at each time point. The limited predictive power of some of the factors studied may point to ambiguity in scoring some of the KDI items

*Keywords:* psychomotor development, sources of variability, HIV exposed

#### 16.46

### PREVALENCE OF INTERPERSONAL SEXUAL ABUSE AMONG MARRIED FEMALE HEALTHCARE PROVIDERS KARACHI, PAKISTAN

*Azmat Jehan Khan, Tazeen Saeed Ali, Rozina Karmaliani, Nargis Asad*  
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*Objective:* To estimate the prevalence of sexual abuse among married female healthcare (nurses and doctors) providers in tertiary care hospitals in Karachi, Pakistan perpetrated by family members. Design A descriptive cross-sectional study was done by using a random sample technique. Setting One public and two private tertiary healthcare hospitals from Karachi, Pakistan Population 350 married female nurses and doctors were recruited.

*Methods:* Descriptive and unvaried statistical methods used to analyze data. Main Outcome Measures Participant's and husband's socio-demographic variables, types of domestic violence (DV), sexual abuse by husband and in-laws, response to sexual abuse, most frequent perpetrator, and reason of last violence. *Results:* The study revealed that of the total sample of 350 married female nurses and doctors, 97.7% (n= 342) were reported one or more types of DV at some point in their life. Whereby, 59.6% (n= 204) reported sexual abuse by their family members at some point in their married life. Out of which mainly the husband 94.6% (n=193) created sexual abuse, followed by

brother in-law 17.6% (n=36). Participants living in extended families [72.2% (n=26)], those who were undergraduate [50% (n=18)] and nurses [61.1% (n=22)] experienced sexual abuse by in-laws.

*Conclusions:* In conclusion, nurses and doctors are victims of sexual abuse, because of socio-demographic factors such as extended family, educated and professional. The study participants were confronting to sexual abuse as the same level as those who were uneducated and poor. DV (Prevention and Protection) Act 2012 has been passed but needs strategies and commitment for enforcement.

*Keywords:* Domestic violence,, sexual abuse by family in-laws, nurses and doctors

#### 16.47

### COMPARING NEONATAL RESPIRATORY MORBIDITY IN NEONATES DELIVERED AT TERM BY ELECTIVE CAESAREAN SECTION WITH AND WITHOUT DEXAMETHASONE: RETROSPECTIVE COHORT STUDY

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*Background:* Neonatal Respiratory Morbidity (NRM) is a complication of elective cesarean section conducted between 37-38+6 weeks of pregnancy. During labor there is rise in corticosteroids level which allow lungs to switch from fluid secretion to fluid absorption. EL- LSCS bypasses this mechanism. Various guidelines recommend administering prophylactic dexamethasone for EL-LSCS planned prior to 39 weeks to reduce risk of neonatal respiratory morbidity.

*Objective:* To assess the effect of dexamethasone on NRM in babies delivered by early term (37-38+6 weeks) Elective Lower Segment Cesarean Section (EL-LSCS).

*Methods:* This was retrospective cohort study conducted at secondary level hospital in Karachi, Pakistan. We reviewed medical record of 196

pregnant women and their babies who delivered by EL-LSCS at 37–38+6 weeks of pregnancy. Women were divided into exposed group (Group A) who received prophylactic dexamethasone and non-exposed group (Group B) who did not receive it. Rate of NRM in both groups was compared.

*Results:* In group A, out of 98 deliveries only 1 (1%) baby developed TTN compared to 10 (10%) babies in group B. Association between dexamethasone and TTN was found significant (P value 0.005). There was also higher rate of baby's admission in our nursery (11%) in non-exposed group compared to exposed group (1%) (11 babies vs 1) and this association was also significant (P value 0.005). No baby was referred in tertiary care hospital for NICU.

*Conclusion:* This retrospective study found beneficial effects of prophylactic dexamethasone in neonatal respiratory morbidity but large prospective studies are required to confirm the findings.

*Keywords:* Cesarean Section, Antenatal corticosteroids, Transient Tachypnea of Newborn

#### 16.48

#### PARTICIPATION OF A HUSBAND DURING CHILDBIRTH PROCESS IN LABOR AND DELIVERY ROOM; AN APPROACH TOWARDS SUCCESSFUL ADJUSTMENTS OF THEIR NEW ROLES

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*Introduction/Objective:* Fathers are considered to be the most significant person for mothers during childbirth process. The paper aims to establish significance of father's presence in the labor and delivery room during childbirth process

*Methodology:* A comprehensive literature review was done including 15 studies from 2005 to date, using various scientific databases and search engines.

*Findings:* The purpose of husband's presence signifies company to his wife, in its deepest sense to create their families. His presence during labor and couples satisfaction with the childbirth experience

lead to a successful adjustment to their new roles (Gungor & Beji, 2007). Moreover, researches have shown that a positive birthing experience has an impact on a women and a baby, their wellbeing and relationship along with the relationship between husband and a wife as well (G. kainze et al., 2010). For any reason, if a women goes through a negative birthing experience, there are higher chances that it may result in intensified situations in future.

*Recommendations/conclude:* Being a healthcare providers, it is better to assess client's concerns, needs, and fears prior. The concept of family centered perinatal care are acceptable in many hospitals but are prohibited in others due to socio-cultural and religious factors. Therefore, enough counseling and consent taking during antenatal period is recommended. In whole, husband's participation during childbirth process is momentous as to strengthen women to alleviate sufferings by providing physical and emotional support.

*Keywords:* Husbands, Childbirth process, Healthy Motherhood

#### 16.49

#### PREVENTING DELAYS BY PROMPTLY DEALING WITH URGENCY OF CESAREAN SECTIONS. THE IMPLEMENTATION OF COLOR CODES.

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*Objectives:* To achieve internationally accepted Decision to Delivery Interval of Emergent Cesarean Sections by reducing delays from 42% to 10% by the end of July, 2014. Rationale: Aga Khan Hospital for women and children Kharadar is a secondary care facility where full time faculty (obstetricians, anesthetist ) is not on floor after 1700hrs. There is only one operating room in kharadar where at times it becomes difficult to priorities the cases .A strong need was felt to implement a system which priorities the cases as per clinical urgency and is easily communicated to all staff. Implementation of

color codes will decrease the delays due to improved communication.

**Methodology:** Brain storming sessions, team formation, pareto analysis, root cause analysis, implementation of color code with strategies. Informal sessions of the end users were taken . Red code = immediate threat to life DDI < 60 min Green code = no immediate threat to life < 120min. A data collection form is devised in which all clinical emergencies are categorized as per international standardized decision to delivery intervals and color codes. It is filled by RMO on duty who declares the emergency and inform operating room. The time when decision is taken and OR is informed is taken as decision time .The time when baby is delivered is recorded by midwife in OR, will be taken as delivery time. The time difference is calculated. Causes of delay also identified. Since Labor Room is considered to be the origin of emergency alert, a process flow was established for LR staff to deal with emergency cases. The tasks are predetermined with defined responsibilities for specified roles.If primary consultant is not available consultant on floor will proceed. If Code Red is declared the consultant living nearby is sought to proceed with case.

**Results:** Before implementation of the project the delays were found to be 42% . After implementation of the project, 167 emergency cesarean sections were done from march to july 2014 . out of 167 , 17 cesarean sections were delayed and did not meet the required decision to delivery interval which is about 10%. Second outcome was improved communication and effective team work, effective utilization of OR.

**Conclusion:** Preventing delays improve maternal and neonatal outcomes.

**Keywords:** color codes, system redesign, cesarean sections

## 16.50

### RETROSPECTIVE REVIEW OF CHILDREN WITH PSYCHOSOMATIC DISORDERS ADMITTED AT PEDIATRIC UNIT OF A TERTIARY CARE HOSPITAL IN KARACHI, PAKISTAN

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**Introduction:** In Pakistan where limited number of mental health services is available for the children, rising rates of mental health disorders especially psychosomatic disorders have been reported among children.

**Purpose:** To estimate the depth of psychosomatic disorders, as well as to ascertain the demographic characteristics, commonly reported symptoms and the predisposing factors of psychosomatic disorders among children aged 5 to 17 years who required hospital admission.

**Method:** A retrospective review from patients' medical records was undertaken for the pediatric patients aged 5 to 17 years who presented with the psychosomatic disorders and required admission at inpatient unit of pediatric unit of a private tertiary care setting of Karachi, Pakistan from January 1, 2008 to December 31, 2012. This study received exemption from the Ethical Review Committees of the identified setting.

**Results:** In the period of 5 years, 67 pediatric patients with psychosomatic disorders required hospital admissions. Mean age of the reported cases was 12.6 years (SD=2.3years). Hospital admissions and complaints of psychosomatic disorders were reported more among girls (n=43; 64.2%) as compared to boys. 67.2% (n=45) pediatric patients presented with multiple symptoms with no pathologic cause. The commonly reported symptoms included abdominal pain, breathing problems, seizures, paralysis, behavioural issues and body aches. Nature of stressors of 76.1% pediatric patients was known, and of them 17.9% patients were exposed to multiple stressors. Major stressors included health issues, stress due to exams,

punitive actions of supervising adults, and death/conflict in the family.

*Conclusion:* This study indicated that psychosomatic disorder related hospital admissions are reported more among adolescent females. Identified predisposing factors suggest need to initiate mental health programmes for the adolescent population, especially for girls at the level of their family, community, education and health care system.

*Keywords:* Psychosomatic disorder, Pakistan, Pediatric Patients

### 16.51

#### ASSESSING THE ADHERENCE OF OBSTETRICIANS TOWARDS POSTPARTUM DIABETES SCREENING GUIDELINES: A PRE AND POST INTERVENTION STUDY AT SECONDARY CARE HOSPITAL IN KARACHI, PAKISTAN

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*Introduction:* Gestational diabetes mellitus (GDM) is a significant risk factor for the development of type 2 diabetes (T2DM). It is defined as "Any degree of glucose intolerance with onset or first recognition during pregnancy." Poses increased risk of adverse pregnancy outcomes and later risk for developing T 2 DM, and cardiovascular disease. Children of women with GDM are at increased risk of obesity and overt diabetes mellitus in adult life. The Fifth International Conference on GDM recommends intensive postpartum monitoring: Random/fasting blood glucose 1 to 3 days postpartum; OGTT 6 to 12 weeks later, to be repeated 1 year postpartum and tri annually thereafter with annual FBG in between. Postpartum screening rates are low due to failure of obstetrician to provide appropriate test and patient non-compliance. The objective of this study is to assess the adherence of obstetricians to the guidelines for postpartum screening of GDM affected women. In

Pakistan where appropriate obstetrical care is lacking GDM may have particularly severe consequences for mother and child. Studies have shown that postpartum diabetes screening has the potential for future prevention of T 2 DM in the mother and offspring thus reducing the burden of disease.

*Methods:* Eligibility Criteria: All Obstetricians practicing at AKHW-K will be assessed for their adherence to postpartum DM screening guidelines. All booked women with GDM delivered in the 6 months before intervention and those delivering in 6 the months following intervention will be included. *Intervention:* Refresher lecture/presentation on postpartum DM screening guidelines to create awareness and refresh the knowledge. *Outcome:* Primary outcome variable is documented plan of postpartum OGTT in Medical record of patient +/- OGTT report.

*Data Collection:* On a predesigned performa by reviewing the MR of women with GDM affected pregnancy who delivered in the 6 months before and after intervention.

*Keywords:* GDM, Postpartum, OGTT

### 16.52

#### ROLE OF EDUCATION ON WOMEN OF KARACHI ABOUT AWARENESS, KNOWLEDGE OF HUMAN PAPILLOMAVIRUS (HPV) AND HPV VACCINE

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*Objective:* To assess the Role of Education on women of Karachi about Awareness, knowledge of Human Papillomavirus (HPV) and HPV vaccine *Introduction:* HPV is one of the top most common causative pathogen of sexually transmitted infections (STIs) around the globe. Although 80-90% of the infections are short lived and cleared by body's immune system. Adolescents with HPV associated condition may remain asymptomatic but continuous replication of viral DNA could be



manifested as genital warts, cervical dysplasia, and a precancerous conditions which leads to cervical cancer. Despite of these facts, there is a lack of knowledge regarding HPV and its vaccine in the targeted population. HPV infections are more prevalent in women than men therefore present research focuses more on women. The objective of this study is to evaluate the role of education on HPV among women in Karachi. Study Design: cross-sectional survey

*Methodology:* A cross sectional study was done on total 600 women age group 17-50 years for interview from out-patient area of a private tertiary care hospital Karachi from Aug 2011- Aug 2012. Convenience sampling was applied. A self-administered questionnaire was used to obtain the Role of Education *Results:* Majority of the women with intermediate education lack knowledge about HPV, its related infection and cervical cancer. While women acquired Bachelor or higher degrees having better knowledge about STI, HPV and Cervical cancer but hold little awareness regarding the causal relationship between HPV and cervical cancer. About 51.9% graduate, 8.4% undergraduate women knew about Pap smear. *Conclusion:* Awareness among women varies with the level of education acquires. As shown by results, a less number of undergraduate women aware about HPV and its related diseases as compared to graduate women who gained a better knowledge about HPV, STI and cervical cancer.

*Keywords:* STI, HPV, HPV vaccine

### 16.53

#### ROLE OF VATS DECORTICATION IN CHILDREN WITH EMPYEMA\_ CASE SERIES FROM A TERTIARY CARE CENTER IN SOUTH EAST ASIA

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We present a case series of 47 children with age range of 3 months to 16 years with Empyema

thoracis. 36 patients had multiloculated empyema secondary to complication of pneumonia. 9 patients had ruptured lung abscesses as the cause of this empyema. 1 patient had ruptured liver abscess and 1 patient had pancreatitis. All patients had VATS decortication. 4 out of 47 patients required thoracotomy due to poor visualization of the pleural cavity due to lung adhesions or inability of the lung to expand completely after decortication. VATS is the best way to deal with multiloculated empyema. Apart from benefits such as early discharge, less pain, less financial burden and early return to full activity, in children it does not deform the chest and allows it to grow symmetrically.

*Keywords:* VATS, empyema, children