



11th Health Sciences Research Assembly

December 12 and 13, 2017

Abstract Book



آغا خان یونیورسٹی
THE AGA KHAN UNIVERSITY

11th Health Sciences Research Assembly
December 12 and 13, 2017

INAUGURAL SESSION
Tuesday, December 12, 2017 | 8:15 am
Aga Khan University Auditorium

Moderator: Dr Natasha Ali

- | | |
|----------|---|
| 8:15 am | Recitation from Holy Qur'an |
| 8:20 am | Introduction
Dr Shahab Abid, Chair, 11th HSRA |
| 8:25 am | Remarks by
Dr David Arthur, Dean, School of Nursing & Midwifery |
| 8:30 am | Remarks by
Dr Farhat Abbas, Dean, Medical College |
| 8:35 am | Research Groups' Presentations (8 minutes each)
1. Developmental Origin of Health and Disease (DOHaD)- Dr. Nuruddin Mohammed
2. Bone and mineral diseases - Dr. Aysha Habib
3. Medical education research - Dr. Kulsoon Ghias
4. Microbiome research - Dr. Najeeha Iqbal
5. TB immunology research - Dr. Zahra Hassan
6. Umeed-e- Nau - Dr Shabina Arif
7. Community based newborn care- Ms Zohra and Shagufta |
| 9:35 am | Best Abstract Awards of 11 th HSRA |
| 9:40 am | FHS Awards for Research Excellence 2017
Outstanding Faculty Researcher Award
Outstanding Junior Faculty Researcher Award
Outstanding Resident/Fellow Researcher Award
Outstanding Student Researcher Award |
| 10:00 am | Vote of thanks
Zohra Jetha, Co-Chair, 11th HSRA |
| 10:05 am | Inauguration of Poster Exhibition |

Themes

- 1.0 Bone and Joint Diseases/Orthopaedics
- 2.0 Cardiovascular Diseases
- 3.0 Clinical Trials
- 4.0 Dental/Orthodontics
- 5.0 Endocrinology/Diabetes
- 6.0 Gastrointestinal and Liver
- 7.0 Genetic Disorders
- 8.0 Haematology and Oncology
- 9.0 Health Education
- 10.0 Infection and Immunity
- 11.0 Neurosciences and Mental Health
- 12.0 Public Health
- 13.0 Renal/Urology
- 14.0 Respiratory Diseases
- 15.0 Techniques/Innovations
- 16.0 Trauma and Violence
- 17.0 Women and Child Health
- 18.0 Miscellaneous

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

Health Sciences Research Assembly (HSRA) plays a significant 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 10th consecutive research assembly with emphasis on compliance on ethics in research; therefore this year only those research studies which had appropriate ethics clearance and those that were exempted from ethical clearance were allowed for submission. HSRA is an 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. We are enthusiastically anticipating more than 400 posters for exhibition from multidisciplinary clinical to translational research from all departments

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

Dr Shahab Abid
Chair, Organizing Committee
11th HSRA

Ms Zohra Jetha
Co-Chair, Organizing Committee
11th HSRA

**Message from
Dean, Medical College**

As AKU moves into the 21st century as a comprehensive, research-led University, it is imperative that we continue to foster and strengthen our research culture and support/create new multidisciplinary and interdisciplinary collaborations, so as to capitalize on the emerging challenges and opportunities; to further deepen our intellectual landscape and impact and to generate new knowledge with the aim of improving the overall quality of human life.

With the ever changing world, the importance and significance of '*multidisciplinarity*', its value and power cannot be overemphasized. In order to continue to make noteworthy contributions to the Knowledge Society, it is important that researchers engage in inquiries and scholarly work that cuts across disciplines to respond to contemporary challenges the world faces today.

While AKU continues to explore research opportunities through various means, one step in this direction is the organisation of the annual Health Sciences Research Assembly which brings together faculty, fellows, residents and students to share, promote and disseminate their ideas and research work both completed and otherwise. The assembly also provides greater opportunities for collegial efforts across disciplines and specialties. I am confident that as previously, the entire University community will actively participate in this annual research based activity which will be tenth in the series.

Herewith, I would like to take this opportunity to thank Dr Shahab Abid for leading this initiative and the Organising Committee for all its efforts in ensuring that the 10th Health Sciences Research Assembly is yet another successful event.

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

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

It is a matter of great pleasure for me to know that AKU is holding its 11th Health Sciences Research Assembly this year on December 12, 2017, and it is more pleasing that it is a joint venture of Medical College and School of Nursing and Midwifery.

Looking at the growing enthusiasm and culture of research activities of faculty and students in both entities, I am confident that this event will again attract them to submit their high quality research abstracts and poster presentations. I would very much encourage all faculty members at AKU in general and the faculty and students of the School of Nursing in particular to participate in this annual event with great enthusiasm and make the event a successful one. I am confident that this assembly will not only provide an opportunity to disseminate research findings, but will also promote dialogue and research collaboration among faculty and students from each department.

The research assembly will be a two day event, and I look forward to your active participation for the success of this event.

Dr David Arthur
Professor & Dean
School of Nursing & Midwifery
The Aga Khan University

Organising Committee
11th Health Sciences Research Assembly
December 12 and 13, 2017

- Dr Shahab Abid (Chair), Department of Medicine
- Zohra Jetha (Co-Chair), School of Nursing and Midwifery
- Dr Mohammad Wasay, Department of Medicine
- Dr Ali Bin Sarwar Zubairi, Department of Medicine
- Dr Emaduddin Siddiqui, Department of Emergency Medicine
- Dr Tania Nadeem, Department of Psychiatry
- Dr Syeda Sadia Fatima, Department of BBS
- Dr Bilal Qureshi, Department of Oncology
- Dr Ayesha Malik, Department of Obstetrics and Gynaecology
- Dr Romaina Iqbal, Department of Community Health Sciences
- Dr Swaleha Tariq, Department of Family Medicine
- Dr Natasha Ali, Department of Pathology and Laboratory Medicine
- Dr Aysha Habib, Department of Pathology and Laboratory Medicine
- Dr Tashfeen Ahmed, Department of Surgery
- Dr Khabir Ahmed, Department of Surgery
- Dr Imrana Masroor, Department of Radiology
- Dr Farah Qamar, Department of Paediatrics and Child Health
- Laila Cassum, School of Nursing and Midwifery
- Parveen Chagani, School of Nursing and Midwifery
- Jack Fernandes, Research Office
- Muhammad Irshad, Conference Secretariat
- Asad Yaqoob, Conference Secretariat
- Hiba Khan, Office of Communications

Secretarial and Logistic Support

- Mr Khawaja Hateem
- Mr Nayab Khan

Table of Contents

Bone and Joint	1
Cardiovascular	6
Clinical Trials	21
Dental/Orthodontics	24
Endocrinology/Diabetes	30
Gastrointestinal and Liver	40
Genetic Disorders	60
Haematology and Oncology	68
Health Education	84
Infection and Immunity	93
Neurosciences and Mental Health	114
Public Health	128
Renal/Urology	144
Respiratory Diseases	150
Techniques/Innovations.....	173
Trauma and Violence	181
Women and Child Health	185
Miscellaneous	201

Bone and Joint

1.1

COMPUTED TOMOGRAPHY GUIDED PERCUTANEOUS RADIOFREQUENCY ABLATION IN TREATING OSTEIOD OSTEOMAS

Mustafa Belal Hafeez Chaudhry, Basit Salam, Muhammad Azeemuddin, Raza Sayani, Tanveer ul Haq

Department of Clinical Imaging, Aga Khan University

Objective: To report our experience in computed tomography (CT) guided percutaneous radiofrequency ablation (RFA) for the treatment of osteoid osteoma (OO) and duration of pain relief, during the past 4 years at tertiary care University hospital. **MATERIAL & METHOD:** A retrospective study was performed at Radiology Department, The Aga Khan University. All patients who underwent RFA for OO between May 2013 to December 2016 were included. All cases were performed under general anesthesia, with additional local anesthesia injection. Soloist needle was used for RFA. Primary success rate, complications, symptom-free interval and follow-up were evaluated. **RESULTS:** In total, 9 patients (7 male, 2 female; age range 5–24 years, mean 14.44 yrs, median 15 yrs) suffering from OO underwent RFA during the period of 44 months. 7 lesions were located in femur and 2 in tibia. The mean nidus size was 8.92 x 6.56 mm [(6.2-11.5) x (5.6-9.1) mm]. All patients were successfully treated with resolution of symptoms including pain in 2.1 months (range: 1-3.1 months). During the follow-up period (3–40 months; mean: 16.9 months & median: 16 months) none of the patient showed relapse or persistent symptoms. No major complication occurred.

Conclusion: RFA is minimally invasive and safe treatment option with high efficiency and technical success for the treatment of OO. Risk of recurrence is remote with all patients achieving independent recovery

Keywords: Osteiod Osteoma, Radiofrequency Ablation, Computed Tomography

1.3

AUDIT TO REVIEW GENERAL RADIOGRAPHS RETAKE/REJECTION IN OUR DEPARTMENT

Mahnoor Akhter, Gohar Ahmed, Baseerat Wasim, Hina Basharat, Raza Sayani

Department of Clinical Imaging, Aga Khan University

Reject analysis is a useful and well-established method for quality control in diagnostic radiology and not

surprisingly, analysis of rejected radiographs provides valuable information about the efficacy of a department. The repetition rate is the responsibility of radiographers to pay attention so that it may be reduced.

Objective: The study is directed to identify the reasons behind repetition of images.

Material and Method: Radiographs of a month from one room of radiology department were reviewed where digital radiography is been in used. All radiographs including chest xrays, abdomen, tibia, humerus, knee, skull, PNS, pelvises were reviewed for this study. The rejected images were analyzed and categorized into eight groups registered as artifact, blur image, poor breathing, collimation, positioning, anatomy cut off, exposure and others.

Result: Total sample size obtained was 1233 images in which the rejected images were 65, that makes a rejection rate of 5%. Internationally the acceptable rejection rate quoted is 10% or less. The overall reject rate was seen to be noted due to poor breathing (46%) and secondly due to positing (12%). Whereas artifact (3%), blur image (2%), collimation (3%), anatomy cut of (18%), exposure (8%) and other reasons were 8% noted.

Conclusion: All reasons need to be managed so that the patients would get rid of excessive or unnecessary exposure.

Keywords: radiographs, poor breathing, exposure

1.4

TOTAL KNEE ARTHROPLASTY: DOES DAY OF SURGERY MATTER?

Azeem Tariq Malik, Shahid Khan, Arif Ali, Syed Hamza Mufarrih, Shahryar Noordin
Department of Surgery, Aga Khan University

Introduction: There has been an influx of newer researches aimed at identifying all factors that contribute to minimizing cost and maximizing postoperative care. Length of Stay has been defined as a significant factor that that contributes to increased burden. We aimed at looking whether Day of Surgery has any significant effect on the LOS (length of stay) and postoperative complications.

Materials & Methods: Retrospective Cohort Study done at Aga Khan University Hospital, Pakistan from January 2007 to December 2015. A total of 611 patients who underwent a unilateral or bilateral TKA

where included in study. 269 (44.0%) patients underwent unilateral TKA and 342 (56.0%) underwent a bilateral TKA.

Results: Kruskal Wallis test and Post-hoc pairwise comparisons showed that unilateral TKAs performed on Tuesday, Saturday and Sunday resulted in a lower median LOS ($p > 0.05$).

Conclusions: Based on our findings, we conclude that unilateral total knee arthroplasties performed earlier during the week and later, on the weekend were associated with a significantly lower length of stay. However, these findings are based off data from one tertiary care hospital and further research involving multiple tertiary care centers are required before reaching to a conclusion. With the advent of service lines in our hospital to enhance patient care and outcomes, further studies are currently under way to see if these changes have favourably affected patient outcomes including length of stay.

Keywords: Day of surgery, Total knee arthroplasty, TKA

1.8 TOTAL KNEE ARTHROPLASTY: RISK FACTORS FOR ALLOGENEIC BLOOD TRANSFUSIONS IN THE SOUTH ASIAN POPULATION

Syed Hamza Mufarrih, Nada Qaisar Qureshi, Arif Ali, Azeem Tariq Malik, Huda Naim, Shahryar Noordin Medical College and Department of Surgery, Aga Khan University

Background Total knee arthroplasty (TKA) is the recommended treatment for end-stage knee osteoarthritis. Considering the various risks associated with intra and postoperative blood transfusions, better understanding is required with respect to the risk factors contributing to a greater possibility of blood transfusion during or after surgery. Although literature highlights several such factors, our study is among the first to identify these risk factors in the South Asian population which differs from other populations in several ways.

Methods The study consists of a review of 658 patients undergoing TKA from 2005 to 2015. Data was obtained from patient medical records and was analysed using logistic regression analysis. The relationship between each predictor and the outcome

variable was calculated as an Odds ratio (OR), the threshold of significance for which was $p = 0.25$ and $p = 0.05$ for univariate and multivariable analysis respectively.

Results The mean age of the patient population was 63 years (78% female), 25% of whom received one or more blood transfusions. Multivariable analysis revealed 5 significant independent predictors for increased risk of blood transfusions including bilateral knee surgery (OR:5.51), preoperative anemia (OR:4.15), higher ASA (American Society of Anaesthesiologists) status (3–4) (OR:1.92), female sex (OR:3.44) and BMI (Body mass index) ≤ 30 (OR:1.79) while increasing co-morbidities and age (> 60) were found to be insignificant.

Conclusions The factors identified for the South Asian population are largely similar to those for other populations. Identification of high risk patients will permit the application of an international multipronged approach which not only targets the modifiable risk factors but also the decision making process and blood management protocols in order to minimize the transfusion associated risks for a patient undergoing a TKA.

Keywords: Total Knee Arthroplasty, Blood transfusions, South Asian

1.9 UNILATERAL VS. BILATERAL TOTAL KNEE ARTHROPLASTY WITH 90-DAY MORBIDITY AND MORTALITY: A RETROSPECTIVE COHORT STUDY

Syed Hamza Mufarrih, Talal Aqueel, Arif Ali, Azeem Tariq Malik, Shahryar Noordin, Shahryar Noordin Medical College and Department of Surgery, Aga Khan University

Background The decision to adopt a unilateral vs. a bilateral approach while performing a total knee arthroplasty (TKA) for a patient with bilateral knee involvement remains a matter of much debate. Previous literature has claimed the supremacy of unilateral surgery in terms of complications where as some evidence supporting no significant difference between the two approaches also exists. In this study, we aim to compare the morbidity and mortality of unilateral with bilateral TKA. **Methodology** A review of 658 patients who underwent TKA (2005–2015) was carried out. Details of patient characteristics, hospital course and complications occurring within 90 post-operatively were recorded. Data was analyzed using

both univariate testing and multivariate regression analysis with a threshold for significance at $p < 0.2$ and $p < 0.05$ respectively. Results The study showed that there is no statistically significant difference in the mortality and major complication between unilateral TKA and bilateral TKA. Further analysis revealed that only higher ASA status (3-4) is associated with higher risk of SSI (RR = 3.42, p -value = 0.034). No variables were found to be significant predictors for cardiac complications and UTI. Interestingly, all 3 cases of DVT occurred in bilateral TKR. Conclusions There is no significant difference between unilateral and bilateral TKA in terms of mortality and morbidity except for DVT. This tips the balance in favor of the simultaneous bilateral approach owing to the added benefits of a combined lower cost of surgery, faster recovery, less work absence, single anesthesia session, single hospital admission and fewer follow-ups. Hence, it can be preferred in selected patients with bilateral osteoarthritis.

Keywords: Total Knee Arthroplasty, complications, Unilateral vs bilateral

1.10

DELETION OF IMAGES IN RADIOGRAPHY: A THREAT OF PATIENT SAFETY

*Gohar Ahmed, Mahnoor Akhter, Huma khalid, Baseerat Wasim, Raza Sayani
Department of Clinical Imaging, Aga Khan University*

Deletion of diagnostic X-ray images has subsequent consequences, such as unnecessary exposure to patients that imposes professional and ethical challenges with in radiological imaging. Radiations may weak and can mutate a human DNA that can lead to cancer. Large amount of exposure causes sickness or may even death within days. This study is conducted to find out the factors behind extra exposure provided to patients and to compare the modalities providing extra exposures due to deleted images. The methodology followed for this study reviews all exposed images from January to July 2017. Retrospective data of 111 deleted images was taken in order to evaluate most common reasons behind the deletion of images. Images of two modalities were reviewed which included CT scan and General radiology. The registered categories are given as: Wrong markers, Wrong address (patient), Wrong procedure, Wrong labelling, Wrong annotation, Rejected by doctor, Wrong charge, Artifact and wrong

accession. Among all deleted images the high deletion rate found to be noted in general (89%) as compare to CT scan (11%). Results showed that Wrong markers (39%), wrong address (23%) and wrong accession (15%) were the main cause of deletion of images in general radiography. But the rate of deleted images due to wrong address is also found to be 74% higher than in CT scan. The reasons for deletion are quite different in digital system. Monitoring and management is necessary to reduce the high rates of deleted images due to certain factors to save patients from extra exposures as it may lead to serious conditions that could be fatal for patient health.

Keywords: Image deletion in Radiography, Patient exposure, Patient safety

1.12

ARE PNEUMATIC TOURNIQUETS A SOURCE OF INFECTION IN ORTHOPEDIC SURGERIES?

*Syed Hamza Mufarrih, Nada Qaisar Qureshi, Dr. Bilal Ahmad, Dr. Seema Irfan, Dr. Rizwan Haroon Rashid, Dr. Shahryar Noordin
Medical College, Department of Surgery and Pathology and Laboratory Medicine, Aga Khan University*

Introduction: According to the WHO, osteoarthritis is expected to become the fourth leading cause of disability by 2020. Estimates declare the rate of Surgical Site Infection following joint arthroplasty to be approximately 2%. Given the drastic consequences including a 300% increase in hospital cost and higher mortality rates, this is undoubtedly enormous. Evidence suggests that besides stethoscopes, phones and marking pens, reusable pneumatic tourniquets may also serve as a possible source of infection in orthopedic surgeries as many hospitals worldwide lack a standard protocol for ensuring sterility of the tourniquets.

Methods: We sampled 12 out of the 14 tourniquets stored in the pneumatic box in the orthopedic department. With collaboration with the microbiology department, a standard protocol was followed for sample collection and processing. Each tourniquet was sampled twice; once after use in a surgical procedure (post-operative), and a second time after the complete disinfection performed on weekends (pre-operative). Growth was documented as bacterial species with the colony count. Analysis was performed using Fisher's exact test.

Results: Out of a total of 12 samples sent to the microbiology lab for sampling, 4 (33.3%) were

contaminated post operatively with 1 and 2 colony forming units of coagulase negative Staphylococcus aureus, whereas none were contaminated preoperatively. The difference between pre and post-operative contamination was statistically significant ($p=0.002$).

Conclusion: The lack of contaminated tourniquets preoperatively highlights the efficiency of the weekend decontamination. However, the significant contamination of tourniquets post-operatively may be a source of surgical site infection through direct inoculation, breach of the hand hygiene protocol and cross infection. Thus, efforts should be made to develop a cost and time effective method of tourniquet disinfection to decrease the rate of post-operative infection and improve overall patient satisfaction.

Keywords: Tourniquet, Surgical Site Infection, Joint Arthroplasty

Cardiovascular

2.1

EFFECT OF LOW DOSE ACETYLSALICYLIC ACID ON HEART RATE, CORONARY FLOW AND FORCE OF CONTRACTION

*Laaibah Ejaz, Dr. Satwat Hashmi, Dr HR Ahmad
Medical College and Department of Biological &
Biomedical Sciences, Aga Khan University*

Introduction: Acetylsalicylic Acid (ASA) has been known for its COX-dependent anti platelet actions (1). Newer studies are reporting many non-COX-dependent actions of ASA

Objective: To observe and measure the direct effect of low dose (40mg/L) ASA on heart rate, force of contraction and coronary flow.

Materials And Methods: The constant pressure model of Langendorff isolated heart preparation was employed (2). 6 rabbit hearts were used for data collection. The heart was given 15 minutes to stabilize before being perfused with 40mg/L ASA. Labchart software was used to monitor the heart rate and force of contraction. Coronary flow was calculated by measuring the effluent perfusate volume per minute.

Results: 1.ASA decreased heart rate, coronary flow and force of contraction. 2.The sharpest decline in all 3 parameters occurred within the first 5 minutes of perfusing with ASA.

Conclusion: Low dose ASA could have a cardioprotective effect when the heart is over stressed. One such application is possibly buffering ischemia reperfusion injury, but more studies are required to fully ascertain this.

Keywords: Acetylsalicylic Acid, Langendorff, inotropy

2.2

LACK OF ASSOCIATION OF POLYMORPHISMS IN METHYLENETETRAHYDROFOLATE REDUCTASE (MTHFR), METHIONINE SYNTHASE (MS) AND CYSTATHIONINE BETA SYNTHASE (CBS) GENES WITH AMI IN PAKISTANI POPULATION

*Naseema Mehboobali, Khalida Iqbal, Asal Khan
Tareen, Siddiqa Parveen, Ghulam Haider, Saleem
Perwaiz Iqbal, Mohammad Perwaiz Iqbal
Department of Biological and Biomedical Sciences,
Aga Khan University*

Objective: To study whether there is an association between methylenetetrahydrofolate reductase (MTHFR) C677T, A1298C; methionine synthase (MS)

A2756G; cystathionine- β -synthase (CBS) 844ins68, G919A polymorphisms and premature acute myocardial infarction (AMI) in a Pakistani population in Karachi. Method: It is a cross-sectional study in which DNA samples of 143 AMI patients (age <45 years) and 153 healthy subjects were genotyped for the above mentioned polymorphisms using PCR-RFLP based assays. Plasma/Serum samples of both patients and healthy subjects were analyzed for homocysteine, folate and vitamin B12. One way ANOVA and chi-squared tests were used for data analysis.

Conclusion: Most common polymorphisms in MTHFR, MS and CBS genes are not associated with premature AMI in a Pakistani population.

Keywords: Acute myocardial infarction, Polymorphisms, Pakistani population

2.4

RADIATION DOSIMETRY OF PATIENTS UNDERGOING DIAGNOSTIC AND INTERVENTIONAL CARDIAC PROCEDURES AT AKUH: A QUALITY INITIATIVE TO ESTABLISH PRELIMINARY REFERENCE LEVELS

*Bisma Imtiaz, Rizwan Merchant, Azmina Atari, Osman
Faheem
Department of Medicine, Aga Khan University*

Background: Diagnostic and Interventional Cardiac procedures although medically beneficial, have significantly contributed to the increased radiation exposure. The radiation dose may vary due to variation in BMI, procedure complexity, equipment performance and procedure protocols. NCRP has suggested SRDL values for different dose metrics (Air Kerma=5Gy, DAP=500Gycm²) intended to alert operators and staff to the possibility of harm. The aim of this study is to establish procedure-specific preliminary reference levels and compare them to the international standards thereby minimizing the radiation exposure without decreasing procedural efficacy.

Methods: The target population comprised of patients who underwent coronary angiography and intervention from February 2017 to August 2017 at cardiac catheterization laboratory of The Aga Khan University Hospital, Karachi. Dose area product (DAP), Air Kerma, fluoroscopy time (FT), patients' BMI, co-morbidities, disease complexity (number of stents), procedure, site of access and immediate complication were collected.

Results: A total 658 patients who had undergone cardiac procedures were analyzed. Mean age of the participants was 58.9 ± 11.4 years out of which the majority (36.3%) fell in the 51-60 years bracket. 530 participants (80.6%) were males. Nearly half of the participants (42.9%) were overweight (>25 to ≤ 30 kg/m²). 35.4% (233) patients were Diabetic, 50.5% (331) were Hypertensive and 12.8% (84) had prior history of Ischemic Heart Disease. Radial access was opted in 63.8% of the participants.

Higher median DAP and Air Kerma values were significantly associated with hypertension ($p=0.02$), prior history of IHD ($p=0.003$) and COPD ($p=0.03$). The values of median DAP and Air Kerma were also significantly higher for BMI >25 kg/m² as compared to normal BMI ($p<0.001$), femoral access as compared to radial access ($p=0.003$) and with increasing number of stents as compared to no stents ($p<0.001$). 75th percentile of our population fall under 5.1mGY and 16.8mGY for DAP in diagnostic and interventional procedure while 834mGY and 3103mGY for Air Kerma in diagnostic and interventional cardiac procedures respectively. Hence, these were the Diagnostic Reference Levels (DRL) for our institution. Multivariable modeling of patient related factors suggested femoral access site ($p=0.005$), obesity ($p<0.001$) and male gender ($p=0.05$) to be significantly associated with high value of DAP in diagnostic procedures while femoral site ($p=0.02$), hypertension ($p=0.006$) and dyslipidemia ($p=0.05$) were associated with high values of DAP in interventional procedure. Similarly, femoral access site ($p=0.01$), overweight and obesity ($p=0.007$ & $p<0.001$) and hypertension ($p=0.05$) were associated with high values of Air Kerma for diagnostic procedures whereas obesity ($p=0.036$) and dyslipidemia ($p=0.007$) were associated with high values of Air Kerma for interventional procedures.

Conclusion: Our study findings suggest that certain patient and procedural characteristics may serve as predictors for higher radiation exposure (Dap and Air Kerma) in patients undergoing diagnostic and interventional cardiac procedures. These predictors may be utilized to identify susceptible patients beforehand, thereby taking all available precautions to reduce the radiation dose during

Keywords: Reference levels, interventional cardiology, radiation dose

2.5

ISOLATED HEMOPTYSIS IN AN ASYMPTOMATIC ADULT WITH PROXIMALLY INTERRUPTED RIGHT PULMONARY ARTERY

Mustafa Belal Hafeez Chaudhry, Kumail Khandwala, Wasim Ahmed Memon, Taha Sheikh, Tanveer ul Haq, Muhammad Arif Saeed

Departments of Clinical Imaging and Medicine, Aga Khan University

A 42 year old lady presented with dyspnea and 3 episodes of hemoptysis since 1 day. Her chest radiograph revealed mild peripheral fibrosis & volume loss in right lung, subsequent HRCT confirmed the findings with additional diagnosis of absence of the right main pulmonary artery. This was further confirmed on digital subtraction angiography and the right lung was solely supplied by the systemic circulation. The conventional angiography did not demonstrate any active extravasation or blush to suggest active bleeder. Empirical embolization was not attempted due to a risk of pulmonary infarction. Patient was managed symptomatically and conservatively.

Keywords: Proximal Interruption of Pulmonary Artery (PIPA), High Resolution Computed Tomography (HRCT), Digital Subtraction Angiography (DSA)

2.6

CARDIO-SUPPRESSANT AND CALCIUM CHANNEL BLOCKING ACTIVITIES OF SALVIA OFFICINALIS

Hasan Salman Siddiqi, Zul Qarnain, Areeb Mustansar, Muhammad Salman Khalil

Department of Biological and Biomedical Sciences, and Medical College, Aga Khan University

Introduction: Hypertension is a chronic cardiovascular disorder with injurious consequences. Mostly lifelong therapy is the only management strategy leading to lack of compliance resulting in high prevalence. Searching for new treatments is thus warranted.

Objective: This study was aimed to investigate the traditional use of Salvia Officinalis as an anti-hypertensive agent by testing its crude extract (So.Cr) on various experimental animal models.

Methods: The aerial parts of the plant were utilized to prepare the extract. Spontaneously beating atria from guinea pigs and aortae from Sprague-Dawley rats were placed in isolated tissue bath assembly, 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: So.Cr produced cardio-suppressant effect in spontaneously beating right atria isolated from guinea pig. It equally inhibited the force as well as the rate. When tested on vasoconstrictions induced by high K⁺ in isolated rat aorta, So.Cr produced a concentration dependent vasodilation by inhibition of calcium channels like verapamil. The Calcium channel blocking activity was further confirmed by right ward shifting of calcium curves in the presence of the extract, just like verapamil, in calcium free medium. *Conclusions:* The cardio-suppressant and vasodilator effects of the aqueous-methanolic extract of *Salvia officinalis* are possibly mediated through calcium channel antagonism which provides pharmacological basis for its use in the management of hypertension.

Keywords: *Salvia Officinalis*, cardio-suppressant, calcium channel blocking activity

2.10 PHARMACOLOGICAL BASIS FOR THE MEDICINAL USE OF LEPIDIUM SATIVUM IN HYPERTENSION

*Hasan Salman Siddiqi, Muhammad Hassaan Arif Maan, Ayat Siddiqi, Zain Yar Khan
Department of Biological and Biomedical Sciences,
and Medical College, Aga Khan University*

Introduction: Hypertension is globally considered as the main cause of cardiovascular diseases, with every third adult suffering from this disease. Currently, anti-hypertensive treatment is expensive with many side-effects and there is a lack of patient compliance towards multiple drug therapy. Therefore other options like herbal medicines deserve scientific investigation to be considered as alternative therapy. *Objective:* The current study was designed to establish the underlying mechanism of anti-hypertensive activity of *Lepidium sativum* with respect to its cardio suppressant and vasodilator activities.

Methods: Aqueous-methanolic (30:70) crude extract was prepared from the seeds of *Lepidium sativum* (Ls.Cr). Aortae from Sprague-Dawley rats and spontaneously beating atria from guinea pigs were placed in isolated tissue bath assembly, 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: On spontaneously beating guinea pig atria, Ls.Cr showed equal inhibition of force as well as rate, thus showing negative inotropic and chronotropic effects. In isolated rat aortic ring preparations, Ls.Cr exhibited a concentration-dependent inhibition on high K⁺-induced vasoconstriction, similar to Verapamil, a known Ca⁺⁺ antagonist which indicates calcium channel blocking activity. This activity was further endorsed when pretreatment of tissue with Ls.Cr shifted Ca⁺⁺ concentration-response curves to the right like Verapamil.

Conclusions: *Lepidium sativum* produces both cardio-suppressant and vasodilator effects, mediated possibly through Ca⁺⁺ antagonism which provides a sound argument for the medicinal use of the plant in hypertension.

Keywords: *Lepidium sativum*, Ca⁺⁺channel blocker, antihypertensive

2.11 MECHANISTIC EXPLORATION OF BLOOD PRESSURE LOWERING ACTIVITIES OF PIMPINELLA ANISUM

*Hasan Salman Siddiqi, Muhammad Shakir Afridi,
Mariam Rashid, Osama Zubair
Department of Biological and Biomedical Sciences,
and Medical College, Aga Khan University*

Introduction: Hypertension is considered to be a major risk factor attributed to global mortality and morbidity. Despite advancements in hypertensive therapies, the prevalence of hypertension and associated morbidities are still immense. Therefore, there is a great need for alternative treatment strategies to combat the condition that affects almost 40% of adults worldwide.

Objective: This investigation is aimed at mechanistic exploration of the blood pressure-lowering activity of *Pimpinella anisum* fruits extract. *Methods:* The fruits of the plant, locally known as "choti saunf", were utilized to prepare the aqueous-methanolic extract (Pa.Cr). Aortae from Sprague-Dawley rats and spontaneously beating atria from guinea pigs were placed in isolated tissue bath assembly, 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: When tested on spontaneously beating right atria, isolated from guinea pigs, Pa.Cr showed equal inhibition of force as well as rate, thus showing negative inotropic and chronotropic effects. In isolated rat aortic ring preparations, Pa.Cr exhibited a concentration-dependent inhibition on high K⁺-induced vasoconstriction, similar to Verapamil which is a known Ca⁺⁺ antagonist. This indicates calcium channel blocking activity, further endorsed when pretreatment of tissue with Pa.Cr shifted Ca⁺⁺ concentration-response curves to the right comparable to Verapamil. **Conclusions:** On the basis of these data, it can be concluded that the fruit extract of *Pimpinella anisum* produces both cardio-suppressant and vasodilator effects, mediated possibly through Ca⁺⁺ channel blocking activity which provides a sound argument for the medicinal use of the plant in hypertension.

Keywords: *Pimpinella anisum*, Ca⁺⁺ channel blocker, hypertension

2.12

PAN-ASIAN RESUSCITATION OUTCOMES STUDY (PAROS) NETWORK: CHARACTERISTICS OF THE SURVIVORS FROM OUT-OF-HOSPITAL CARDIAC ARREST REGISTRY ESTABLISHED IN KARACHI, PAKISTAN

Rubaba Naeem, Minaz Mawani, Uzma Rahim Khan, Ahraz Hussain, Fareed Ahmed, Noor Baig, Munawar Khursheed

Department of Emergency Medicine, Aga Khan University

Introduction: In Pakistan approximately 80% of cases of sudden death from cardiac causes occur in an out of hospital setting and overall survival has been reported to be poor. PAROS Network strives to understand and improve pre-hospital emergency care outcomes across Asia-Pacific Region.

Objective: Aim was to describe the characteristics of the survivors of out-of-hospital cardiac arrest from the PAROS registry established in four major hospitals of Karachi. **Methods** An ongoing prospective observational study on cardiac arrest patients presenting to emergency departments of four major tertiary care hospitals in Karachi, Pakistan has been established. These hospitals include Jinnah Postgraduate Medical Center (JPMC), Tabba Heart Institute (THI), Karachi Institute of Heart Diseases (KIHD) and Aga Khan University Hospital (AKUH). **Results:** During September 2015 to September 2016

we enrolled 525 patients; 121 from AKUH, 236 from JPMC, 92 from THI and 46 from KIHD. Mean (SD) age of these patients was 53.8(20.2) and ranged from 2 to 96 years. Most of the patients were men (62.7%, n=329). Only 55 (10.5%) patients received bystander CPR whereas most of the arrests (96.5%) were witnessed (81.7% bystander family, 9.5% bystander layperson, 3.4% bystander health care provider, 1.9% EMS personnel). Return of spontaneous circulation was achieved in 29(5.5%) patients and only 5 (0.9%) survived till 30 days post cardiac arrest. Survivors were older (mean age 64 vs. 56 years) and four were men. On follow up for quality of life assessment, visual scale was scored 70 (where 0 is worst and 100 is best) in 3, only 1 patient had severe anxiety/depression, 3 patients had moderate pain and discomfort and 2 of them could do self-care after 30 days.

Conclusion: Rates of Bystander CPR are quite low despite having a large number of arrests. Low ROSC indicates there is need for bystander as well as prompt EMS training to complete chain of survivors.

Keywords: out of hospital cardiac arrest, survivors, Pakistan

2.13

VASODILATOR EFFECT OF 1-TRIFLUOROMETHOXYPHENYL-3-(1-PROPIONYLPYPERIDIN-4-YL) UREA (TPPU) IS PREDOMINANTLY MEDIATED THROUGH ACTIVATION OF DOMINANT ACTIVATION OF VOLTAGE-DEPENDENT K⁺ CHANNELS

Malik Hassan Mehmood, Shafiq Ali Shah, Munasib Khan, Ishfaq Ali Bukhari, Anwar-ul-Hassan Gilani
Department of Biological and Biomedical Sciences, Aga Khan University, Department of Pharmacy, University of Malakand, KPK, Pakistan; King Saud University, Riyadh, Saudi Arabia and Chairperson Pakistan Council for Science and Technology, Islamabad, Pakistan

This study was carried out to explore the vasodilator effect of 1-trifluoromethoxyphenyl-3-(1-propionylpiperidin-4-yl) urea (TPPU) and to provide mechanistic basis for its pharmacological use in high blood pressure. In the in-vitro assay, rat isolated aorta was used in the organ bath assembly attached to power lab system using isometric transducer. In the isolated rat aorta preparation, TPPU caused a dose-dependent (0.3-100 μ M) relaxation of low K⁺ (25 mM)-induced contractions whereas partial relaxation was observed against high K⁺ (80 mM). Pretreatment of tissue with

glibenclamide (10 μ M) had negligible effect on the inhibitory effect of TPPU on low K⁺ (25 mM), while 4-aminopyridine (1 mM) completely blocked this effect. Tetraethyl ammonium (TEA; 10 mM) shifted the inhibitory effect of TPPU towards higher dose but with less efficacy than 4-aminopyridine. These results indicate that TPPU possess vasodilatory effect, which is mediated possibly through the dominant activation of voltage-dependent K⁺ channels followed by non-specific K⁺ channels with weak effect on Ca⁺⁺ influx. This study provides sound pharmacological basis for the possible future development of TPPU as drug candidate in the management of cardiovascular disorders such as hypertension.

Keywords: TPPU, Vasorelaxant, voltage-dependent K⁺-channel activation

2.14

A RARE CAUSE OF CHRONIC HEART FAILURE IN A YOUNG MAN

*Bilal Hussain, Fateh Ali Tipoo Sultan
Department of Medicine, Aga Khan University,
Karachi*

Background: Left ventricular non-compaction cardiomyopathy is a rare form of cardiomyopathy characterized by severe left ventricular systolic dysfunction occurring due to failure of the myocardium to fuse resulting in non-compacted trabeculated myocardium. We report a case of isolated left ventricular non-compaction cardiomyopathy (LVNC) that was diagnosed on cardiac magnetic resonance imaging with classical features.
Case: A 25 year old man presented with a history of worsening dyspnea over last 2 years. He had a regular pulse but was tachycardiac. Examination revealed jugular venous distension, pedal edema and bibasilar chest crepitations on chest auscultation. A diagnosis of heart failure was postulated. His echocardiography showed enlarged ventricle with rugged appearance of myocardium and prominent trabeculations. CMR showed prominent recesses with spongiform pattern. The non-compacted to compacted ratio was more than 4:1 during diastole. He was diagnosed to have isolated left ventricular non-compaction cardiomyopathy and started on optimized heart failure medications. On follow up he was doing fine on medical therapy
Discussion: The widely accepted criterion for diagnosing LVNC on ECHO is that the end-systolic ratio between non-compacted and compacted myocardium should be greater than 2.0. The echo of our patient was suggestive of non-compaction. Though

cheap and widely available, ECHO has limitations. CMR overcomes the shortcomings of ECHO. The CMR diagnostic criteria for LVNC includes a non-compacted to compacted myocardial ratio greater than 2.3 as measured in end-diastole. In our patient CMR findings were classical, fulfilling all the criteria for diagnosis of LVNC.

Conclusion: The diagnosis of LVNC should be considered in patients with chronic heart failure. Due to limitations of ECHO, CMR is replacing ECHO as the diagnostic modality of choice for LVNC. Recent advances in CMR have made the diagnosis of LVNC more accurate and have helped in identifying patients who can benefit from device therapy.

Keywords: Heart failure, Non-compaction cardiomyopathy, Cardiac magnetic resonance imaging

2.15

A RARE PRESENTATION OF CONSTRICTIVE PERICARDITIS

*Bilal Hussain, Fateh Ali Tipoo Sultan, Shahruckh Hashmani
Department of Medicine, Aga Khan University,
Karachi*

Introduction: Brucellosis is a zoonosis caused by gram negative bacillus Brucella, characterized by a systemic illness with vague symptoms. Exclusive pericarditis with Brucella without endocardium involvement is rare. The occurrence of exclusive Brucella constrictive pericarditis is extremely rare.

Case: A 36 year old gentleman, presented with symptoms of dyspnea, generalized weakness and low grade fever for last two years. Transthoracic echo showed that the pericardium was thick and shiny. Left ventricular systolic function was normal. The echo features were suggestive of constrictive pericarditis with prominent septal bounce. The Mitral inflow showed large E wave with increased E to A ratio and an E/E' of 5 suggestive of normal myocardial relaxation but pericardial disease. Significant respiratory variation was noted in mitral inflow velocities. Inferior vena cava was dilated with loss of inspiratory collapse. To confirm the echocardiographic findings, a CMR was done which was consistent with constrictive pericarditis. Pericardiectomy was done. The biopsy of pericardium revealed multiple fragments of extensively fibrotic and calcified tissue. Tissue

culture and nucleic acid amplification test for Tuberculosis(GeneXpert) negative. Symptoms of dyspnea improved after surgery yet the patient continued to have low grade fever and generalized weakness. His labs showed that the ESR was raised, *Brucella* serology was strongly positive with titres of serum agglutination test(SAT) of 1:160 for both *Brucella melitensis* and *Brucella abortus* while the rest of the test were negative. On the basis of positive serology, the patient was started on treatment for brucellosis with doxycycline 100mg twice daily and rifampicin 600mg once a day for 6 weeks. He was afebrile and his symptoms had improved on follow up. **Conclusion:** Brucellar constrictive pericarditis is an extremely rare clinical entity but should be considered in patients with chronic fever, with a history of contact with animals or animal products presenting with signs and symptoms of right heart failure. In patients diagnosed with Brucellar constrictive pericarditis, pericardiectomy along with combination antibiotic treatment for six weeks is required for treatment. The choice of antibiotics and the duration of therapy are similar to the treatment of Brucellosis without pericardial involvement.

Keywords: Constrictive pericarditis, Brucellosis

2.16 SEVERITY OF CHEST PAIN AMONG ACUTE CORONARY SYNDROME PATIENTS WITH DIAGONAL BRANCH VESSEL DISEASE: THE SPADE PILOT STUDY

*Nasir Rahman, Farhala Baloch, Azmina, Bilal Hussain
Department of Medicine, Aga Khan University,
Karachi*

Background: Acute Coronary Syndrome (ACS) patients present with variable clinical manifestations, chest pain being the most common. Branch vessel disease patients have been reported to be clinically indistinguishable from those with major vessel disease. However, our experience suggests more severe chest pain among branch vessel disease patients especially diagonal branch.

Purpose: We aim to study the association of chest pain severity among ACS patients upon correlating the angiographic findings.

Methods: The study integrates a case-control design in which 10 cases (ACS patients with diagonal branch disease) and 40 controls (ACS patients with major coronary disease) were recruited retrospectively. Angiograms of patients who underwent coronary angiography at the Aga Khan University Hospital from June 2014 to June 2016 were reviewed. After participant selection, pain scores were retrieved from emergency department's notes upon arrival and before administration of the analgesics. Pain assessment was done utilizing 0-10 Numeric Pain Rating Scale by McCaffrey indicating 0 as no pain and 10 being the worst pain.

Results: The median age of the cases was 61 years (IQR: 16) and that of controls was 59.5 years (IQR: 10.5). Among cases, 40% had hypertension, 50% were diabetics and 20% had family history of CAD in contrast to 87.5%, 60% and 5% of controls respectively. The estimated mean difference in pain ratings of ACS patients with diagonal branch disease and major coronary vessel disease was 2.53 (P-Value: 0.00, 95% CI: 1.76-3.29) adjusted for age and other covariates.

Conclusion: This preliminary study indicates more severe chest pain among ACS patients with diagonal branch disease. It may offer a lead to the clinicians to make appropriate decisions while opting for available treatment options. Future studies may scale up to multiple centers involving a diverse patient population.

Keywords: Pain, Diagonal Disease, Acute Coronary Syndrome

2.17 POST-CLINIC BP VALUES ARE THE CLOSEST TO THE GOLD STANDARD AMBULATORY BLOOD PRESSURE MONITORING (ABPM) READINGS

Hunaina Shahab¹, Hamza Sohail Khan², Aysha Almas³, Mayera Tufail⁴, Khawar Abbas Kazmi¹, Aamir Hameed Khan¹.

*Department of Medicine, Aga Khan University,
²Ziauddin University Hospital, ³Section of Internal
Medicine, Department of Medicine, Aga Khan
University, ⁴Medical Student, Aga Khan University*

Background/objectives: ABPM is the gold standard for assessing hypertension, as it eliminates white coat effect induced by the in-clinic BP. ABPM is however costly, cumbersome and not widely available. Our previous study identified post-clinic BP as the lowest reading in a clinic visit. We therefore aimed to validate post-clinic BP taken 15minutes after physician-patient encounter ends with 24 hour-ABPM.

Methods: A cross-sectional study (3461-Car-ERC-15) was conducted in May 2015 in cardiology clinic at Aga Khan University, on patients ≥ 18 years who were either hypertensive or referred for its diagnosis.

Pregnant females and those with a history of volume loss or taken were excluded. Pre-clinic readings were measured by a nurse, in-clinic by a physician and 15minutes post-clinic by a research assistant using a validated, automated BP device (Omron-HEM7221-E). All patients were then referred for a 24hour-ABPM.

Results: Of 150 participants, 49% were males and 76% were hypertensives. The prevalence of white coat effect was 38%. Mean(SD) SBP taken pre-clinic, in-clinic, 15minutes post-clinic: 153.2 ± 23 mmHg, 152.3 ± 21 mmHg, 140.0 ± 18 mmHg, respectively. Mean(SD) DBP taken pre-clinic, in-clinic, post-clinic were: 83.5 ± 12 mmHg, 90.9 ± 12 mmHg, 86.4 ± 11 mmHg respectively. Mean(SD) pulse taken pre-clinic, in-clinic, post-clinic were: 76.9 ± 16 /minute, 74.1 ± 15 /minute, 70.4 ± 13 /minute, respectively. Mean 24hr-overall ambulatory SBP, DBP and pulse readings were 130.9 ± 13 mmHg, 74.8 ± 9 mmHg and 70.7 ± 13 /minute, respectively. Mean daytime ambulatory SBP, DBP and pulse readings were 134.7 ± 15 mmHg, 78.7 ± 15 mmHg and 72.6 ± 12 /minute, respectively. The Pearson correlation values of pre-clinic, in-clinic and post-clinic SBP with 24hr-overall ambulatory-SBP were 0.405 (p-value:0.000), 0.519 (p-value:0.000) and 0.546 (p-value:0.000), respectively. The Pearson correlation values of pre-clinic, in-clinic and post-clinic SBP with daytime ambulatory-SBP were 0.423 (p-value:0.000), 0.538 (p-value:0.000) and 0.552 (p-value:0.000), respectively.

Conclusion: Post-clinic BP is the closest to the mean ambulatory BP. Our study suggests that post-clinic BP is an important surrogate of ABPM. Therefore we recommend post-clinic BP be used instead of in-clinic BP to manage hypertension.

Keywords: Hypertension, White-coat hypertension, Ambulatory blood pressure monitoring, Blood pressure

2.20

THE PREVALENCE OF CORONARY ARTERY ANOMALIES ON CORONARY CT ANGIOGRAPHY - EXPERIENCE FROM A TERTIARY CARE CENTER IN PAKISTAN

Bilal Hussain, Fateh Ali Tipoo Sultan
Department of Medicine, Aga Khan University, Karachi

Background: Studies showing prevalence of coronary anomalies on Coronary computed tomography angiography (CCTA) are available from different regions of the world. However, there is lack of such data from south Asian countries. This study is an effort to bridge this gap.

Methods: This is a cross sectional, descriptive study done at Aga Khan University Hospital Karachi, Pakistan. All adult patients who underwent coronary CT angiography from 1-1-2005 to 1-11-2016 were included in the study.

Results: Among 897 patients undergoing CCTA, 36 (4.01%) patients were identified as having coronary anomalies. The mean age of patients was 48.3 ± 11.9 years. Male to female ratio was 3:1. The most common indication for CCTA was screening for coronary artery disease (21 patients, 58.3%). 33 patients (91.6% of cases) showed coronary origin and course anomalies, whereas coronary artery fistula were identified in 3 patients (8.3% of cases). The most common anomaly identified was the anomalous origin of coronary artery from opposite coronary sinus with anomalous course (16 patients, 44.4% of cases, prevalence of 1.7%). Of these anomalies the most common anomaly was anomalous origin of RCA from the left coronary sinus with an inter-arterial course (9 patients, 25% of cases, prevalence of 1.0%). Single coronary artery was seen in three cases (8.3% of cases, prevalence of 0.3%), in all these cases the single coronary artery originated from the right coronary cusp. In one patient (2.7% of cases) dual LAD system was identified. Coronary artery fistulas were seen in 3 patients (8.3% of cases). In two cases (5.4% of cases) fistulous connection of LAD with pulmonary artery was seen, while fistula from LAD to coronary sinus was identified in one patient.

Conclusions: This study brings to focus the fact that the prevalence of coronary anomalies on CCTA in this

region is similar to the reported data from rest of the world.

Keywords: Coronary Artery Anomalies, Coronary CT Angiography

2.21 FREQUENCY OF NON-DIPPER BLOOD PRESSURE PROFILE IN HYPERTENSIVE PATIENTS UNDERGOING AMBULATORY BLOOD PRESSURE MONITORING AT A TERTIARY CARE HOSPITAL

*Muhammad Taha Khan, Aamir Hameed khan
Department of Medicine, Aga Khan University*

Background / Objectives: Identification of the frequency of non-dipper blood pressure profile in hypertensive patients is of immense significance as it directly associated with increased incidence of end organ damage. This study aims to assess the frequency of this ambulatory blood pressure profile & its association with coronary artery disease and common CAD risk factors among hypertensive patients undergoing Ambulatory Blood Pressure monitoring.”

Methods: A Cross-sectional study done at section of Cardiology, Department of Medicine, The Aga Khan University Hospital Karachi and ambulatory blood pressure data was reviewed. The sample comprised of 100 subjects (69man, 31woman) & Ambulatory blood pressure monitoring was done over a 24 hour period .Results were used to classify subjects according to circadian profiles and then association of non-dipping profile was assessed with CAD , its common risk factors and anti-hypertensive medications .

Results: Mean age in our study was 51.15 ± 16.24 years. 69 % of subjects were men. The Frequency of non-dipper circadian profile was found to be 34% including 6% people who were reverse dippers the so called risers. CAD, dyslipidemia, obesity, duration of hypertension, and treatment with calcium channel blockers or combination therapy had statistically significant association with non-dipping.

Conclusion: The Frequency of non-dipper profile was bit high in our study and it was more in man. It is associated with CAD, dyslipidemia, obesity and prolonged hypertension. As this profile is linked with end organ damage, individuals with this profile need extra vigilance and meticulous management of hypertension.

Keywords: Non dipper, Coronary artery disease, Ambulatory blood pressure monitoring.

2.22 AN UNCOMMON CAUSE OF RIGHT HEART FAILURE: PRIMARY CARDIAC PRE-B CELL ACUTE LYMPHOBLASTIC LEUKEMIA

*Bilal Hussain, Fateh Ali Tipoo Sultan
Department of Medicine, Aga Khan University,
Karachi*

Background: The occurrence of primary cardiac leukemia presenting as an isolated cardiac mass is extremely rare. We present a case of a young man with one month history of fever and shortness of breath. His examination showed signs of right sided heart failure. On workup he was found to have a cardiac mass in the right atrioventricular groove mass on echocardiogram and computerized tomography (CT) scan of the chest. Surgical biopsy confirmed it to be an extremely rare presentation of Pre B Acute Lymphoblastic leukemia (ALL).

Case: A 40 year old man presented with complaints of low grade fever and worsening shortness of breath for four weeks. His physical examination revealed jugular venous distension, pedal edema and a left sided pleural effusion. Laboratory investigations showed a normal blood cell count and no premature cells in peripheral film. An echocardiogram revealed a large echogenic density within the right atrio-ventricular groove extending through the tricuspid valve into the right ventricle. CT chest with contrast showed a large hypo attenuating intracardiac, lobulated soft tissue mass. Surgical resection of the mass was performed. The tissue biopsy was reported consistent with pre-B cell ALL. He was planned to be started on chemotherapy regimen but he developed pneumonia and despite treatment with broad spectrum antibiotics, he died of over whelming sepsis.

Discussion: Hematological malignancies can present as cardiac masses and should be considered during workup of patients presenting with fever and right heart failure. In this case, pre B ALL presented as an isolated right sided cardiac mass with right heart failure due to acquired tricuspid stenosis. Unfortunately, patients with pre B cell ALL with cardiac involvement may have extremely poor outcomes. In case of an isolated cardiac mass the most appropriate therapy is primarily surgical resection of the mass lesion followed by chemotherapy. However, bone marrow involvement in such case is associated with high mortality.

Keywords: Right Heart failure, Echocardiogram, pre-B cell acute lymphoblastic leukemia

2.23

TREATMENT OF A RARE VASCULAR COMPLICATION OF CORONARY STENTING IN AN OCTOGENARIAN

Hunaina Shahab, Bilal Hussain, Nasir Rahman, Fateh Ali Tipoo Sultan
Department of Medicine, Aga Khan University, Karachi

Background: The reported incidence of coronary artery aneurysms (CAN) after percutaneous intervention is only around 0.35 to 6.0%.

Case: A 85 years old lady, with prior history of percutaneous coronary intervention to left anterior descending artery with CypherTM stent(DES) in 2007, presented with cardiogenic shock. She underwent emergent coronary angiogram that showed tight in stent re-stenosis(ISR) in LAD stent, followed by coronary artery aneurysm in the prior stent. The left circumflex and right coronary artery had mild plaquing.

Percutaneous intervention was planned for the mid LAD stent segment having ISR and aneurysm. The left main was engaged with VL3 6F(Cordis®) guiding catheter and LAD wired with BMW(Abbott®) 0.014 inch wire. Mid LAD prior stent ISR predilated with Sapphire II(OrbusneichTM) 2.0 x 10 mm at 6 atm. Intravascular ultrasound(IVUS) was done which revealed ISR along with positive remodeling and aneurysm in mid LAD prior stent. Xience xpediton(Abbott®)2.5 x 33 mm (DES)was deployed in prior mid LAD stent including proximal and distal segments to it at 10 atm. Stent was post dilated sequentially with NC TREK(Abbott®)2.5 x 15 mm at 14-20 atm. and NC TREK(Abbott®) 3.0 x 8 mm at 10-16 atm.. At the end of procedure, intravascular ultrasound(IVUS) revealed well deployed and apposed stent with minimal gap in between two stent struts. TIMI III flow was achieved in LAD.

Conclusion: Coronary artery stent aneurysms are a rare vascular complication of DES insertion largely resulting from a inhibition of neo-intimal growth and delayed endothelialization. IVUS has a major role in determining the type of aneurysm and identifying patients at high risk of complications with such aneurysms. The optimum treatment of stent aneurysm is still debatable, yet the application of drug eluting stents under IVUS guidance can result in successful treatment of such vascular complications.

Keywords: coronary artery aneurysm, intravascular ultrasound, vascular complication, drug eluting stents

2.24

UNUSUAL CAUSE OF CHEST PAIN IN AN ELDERLY MALE – A CASE REPORT

Shahrukh Hashmani, Fateh Ali Tipoo Sultan,
Department of Medicine, Aga Khan University, Karachi

Background: A 72-year-old man presented to the outpatient clinic with chest pain and dyspnoea on exertion (NYHA III) symptoms for two months. Physical examination was unremarkable with normal first and second heart sounds. Unfortunately, the Valsalva maneuver was not performed. Echocardiogram showed normal LV systolic function with left ventricular hypertrophy and mid cavity gradients of 50 mm of Hg. Cardiac magnetic resonance imaging (CMR) was performed that confirmed hypertrophic cardiomyopathy (HCM). A contrast enhanced CT angiogram (CTA) was done that showed coronary artery fistula arising as multiple small vessels from the proximal left anterior descending artery (LAD) and draining into the pulmonary artery (PA). Initially, the patient was managed medically considering HCM as the cause of his symptoms but subsequently, with the findings of coronary artery fistula by CTA, the surgical correction of the fistula was advised. However, the patient opted for conservative treatment. At one year follow-up, he was well on optimal medical treatment with improvement in functional class from NYHA III to II. This describes a rare case of coronary artery to pulmonary artery fistula in a patient with hypertrophic cardiomyopathy that presented late in life.

Case Discussion: A coronary artery fistula (CAF) is an abnormal vessel communication between the coronary artery and cardiac chamber, great vessel or other vascular structures, with an estimated incidence of 0.002% in the general population. The co-existence of left anterior descending artery to pulmonary artery fistula and hypertrophic cardiomyopathy (HCM) has been rarely reported in the literature.

The clinical presentations in symptomatic patients can vary from angina, atypical chest pain, syncope,

dyspnea, palpitation, congestive heart failure, arrhythmia, and can even lead to sudden cardiac death. Our patient had symptoms of chest pain and dyspnea which could be due to hypertrophic cardiomyopathy or coronary fistula.

The mechanisms of myocardial ischemia in HCM with CAF include increased oxygen demand by the hypertrophied ventricular myocardium, impaired coronary circulation, demand supply mismatch and increased diastolic filling pressures. CAF can result in coronary steal and left-to-right shunt which may further reduce the ventricular perfusion and increase diastolic volume overload. Conservative management with continued follow-up of patients with coronary artery to pulmonary artery fistula appears to be appropriate.

2.25 DOBUTAMINE INDUCED ATYPICAL MID-VARIANT TAKOTSUBO CARDIOMYOPATHY DURING STRESS ECHOCARDIOGRAPHY

Bilal Hussain, Nageeb Basir
Department of Medicine, Aga Khan University,
Karachi

Background: Dobutamine stress echo allows for a relatively safe and accurate assessment of ischemia in patients unable to exercise. However, in the setting of intrinsic catecholamine surge, Dobutamine stress testing can provoke coronary spasm and lead to transient ventricular ballooning. Here we report a case of an elderly lady who developed mid-ventricular transient cardiomyopathy during Dobutamine stress echo.

Case: A 66 years old lady was advised stress echocardiography to rule out coronary ischemia. Dobutamine was incremental doses upto 20 mcg/kg to achieve target heart rate response. At a heart rate of 130beats/min (81% target heart rate), the patient experienced central chest heaviness with profuse sweating. The ECG showed ST elevations in anterolateral leads. The stress echo images showed akinesia of mid to distal septum, anterolateral wall with basal wall hyper contractility. The test was terminated and the patient was transferred for urgent coronary angiogram that showed non-obstructive coronary artery disease. A left ventriculogram showed mid anteroseptal and anterolateral wall systolic ballooning with apical and basal sparing and estimated

ejection fraction of 45%. Her repeat echo after 3 months showed no wall motion abnormalities (WMA).
Discussion: The occurrence of ST elevations during Dobutamine stress echo with focal systolic mid anterolateral and anteroseptal ballooning on left ventriculography and echo along with a non-obstructive coronary angiogram followed by the reversion of ECG and echo changes on follow up are typical enough to label the case as an occurrence of Dobutamine induced atypical Takotsubo cardiomyopathy (TCMP). Takotsubo cardiomyopathy (TCMP), is a transient apical ballooning of the left ventricle known as 'typical TCMP'. However, other patterns of myocardial ballooning such as basal ballooning, mid ventricular ballooning and focal ballooning patterns have been described and termed as 'atypical variants of TCMP'.
Conclusion: Dobutamine stress testing is a relatively safe investigation for patients who are unable to exercise and has mild side effects, however rarely dobutamine stress testing can induce a transient cardiomyopathy.

Keywords: Atypical Takotsubo cardiomyopathy, Dobutamine stress echo

2.26 HYPERDOMINANT LEFT ANTERIOR DESCENDING ARTERY PRESENTING AS ANTERIOR WALL ST SEGMENT ELEVATION MYOCARDIAL INFARCTION: A RARE CORONARY ANOMALY

Shahrukh Hashmani, Abid Laghari
Department of Medicine, Aga Khan University,
Karachi

Background: We report on a 75 year-old man who presented to the emergency department (ED) with severe chest pain for four hours. Physical examination was unremarkable and he was hemodynamically stable. ECG done in the ED showed ST segment elevation (STEMI) in the anterior precordial leads. He was immediately rushed to cath lab where the LAD was 99% occluded in the proximal segment while, distal LCX showed 60-70% lesion. He underwent primary percutaneous coronary intervention (PCI) to LAD with drug eluting stent (DES) and made an uneventful recovery. The LAD was found to be wrapping around the apex and continuing as the posterior descending artery (PDA). To the best of our

knowledge, there are very case reports on the continuation of LAD across the left ventricular apex as posterior descending artery (PDA) in the presence of a normally arising but atretic proximal right coronary artery (RCA).

Case Discussion: Anomalous coronaries are usually discovered incidentally and have an estimated incidence of 0.2-1.2% in the general population. Normally the posteroinferior part of the interventricular septum is supplied by the posterior descending artery (PDA) whose variable origin is reflected by the concept of coronary dominance. We present a rare type of left dominant circulation in which a large LAD continues as PDA after winding round the apex in the presence of a diminutive RCA. Such a large LAD continuing as PDA is referred as “hyperdominant” or “superdominant”. Some authors describe such a LAD as “wrap around LAD” though “wrapped LAD” is defined as a LAD supplying at least one-fourth part of inferior surface of left ventricle and the interventricular septum .

Learning Points:

- Anomalous coronaries are usually discovered incidentally and have an estimated incidence of 0.2-1.2% of routine angiographic studies. Very rarely, the PDA may arise as a continuation of “hyperdominant” LAD.
- In the presence of a “hyperdominant” LAD continuing as PDA, the entire interventricular septum is perfused by the LAD and its occlusion can lead to catastrophic consequences.
- Physicians, interventional cardiologists and cardiac surgeons should be aware of such a rare anomaly as it can have considerable impact on the clinical outcome of a patient and can jeopardize a large segment of the myocardium.

2.27

MITRAL VALVE LEAFLET RING ABSCESS COMPLICATING AORTIC VALVE ENDOCARDITIS – A CASE REPORT

Shahrukh Hashmani¹, Fateh Ali Tipoo Sultan¹, Saulat Fatimi², Bilal Hussain¹

¹Section of Cardiology, Department of Medicine,

²Department of Surgery, Aga Khan University,
Karachi

Background: Mitral valve leaflet abscess formation is rare and most often it is associated with infective endocarditis (IE) of the aortic valve (AV). Possible mechanisms include regurgitant infectious flow from the AV, direct contact with AV vegetation, and direct spread across adjacent structures, such as the mitral–aortic intervalvular fibrous body.[1]Such an abscess poses a threat for septic embolization or rupture. Acute, severe MV regurgitation and hemodynamic deterioration can follow, often necessitating urgent surgery. [2] Current guidelines on the optimal timing of surgery in IE suggest urgent treatment when signs of uncontrolled infection are present, including abscess formation, fistula formation, enlarging vegetation, and pseudoaneurysm formation

We present here a case of native AV endocarditis complicated by anterior MV-leaflet (AMVL) abscess formation and subsequent severe aortic valve regurgitation due to vegetations.

In addition, we review the relevant medical literature.

Case Report: 65-year-old woman, presented with complaints of fever for past two months. On clinical examination, Loud Early diastolic murmur was appreciated on the left parasternal area. Transthoracic echocardiogram showed a mobile echogenic density attached to the non-coronary cusp of aortic valve, suggestive of vegetation. Two sets of blood culture grew streptococcus sanguis that was pan sensitive. So intravenous ceftriaxone was continued and patient became afebrile.

After completing 28 days of antibiotic, she presented to clinic with complaints of shortness of breath. On clinical examination, a new systolic murmur was appreciated at the mitral area that was radiating to the axilla. An echo was done which showed, an echogenic density measuring 0.8 x1.3 cms attached to the noncoronary cusp of the aortic valve, consistent with a vegetation. An echolucent space measuring 0.4x1.6cm was also observed in the left atrium attached to the mitral leaflet suggestive of an abscess cavity.

Intraoperatively, a large, ruptured abscess cavity was noticed on the anterior mitral valve leaflet, along with multiple vegetations that were noted on the aortic valve. A 29-mm bioprosthesis (MEDTRONIC HANCOCK II Porcine heart valve 29 mm) and a mechanical aortic valve (MEDTRONIC 19 mm) were also placed. At her one month evaluation, the patient had no signs of recurrent infection.

Conclusion: Mitral valve leaflet abscess formation is rarely reported in literature. Our patient had native aortic valve endocarditis which partially responded to treatment but later had an abscess formation.

2.28 OUTCOMES OF PERCUTANEOUS LEFT MAIN CORONARY INTERVENTION

*Bilal Hussain, Nasir Rahman, Azmina Abdul
Department of Medicine, Aga Khan University,
Karachi*

Introduction: This study is an effort to put forward 10 year experience of percutaneous left main coronary intervention (LM-PCI) at a PCI capable tertiary health care hospital in Pakistan.

Objectives: To document mortality and major adverse cardiovascular outcomes in patients that underwent LM PCI over an extended period of follow up(1 year or more) and to correlate outcomes to pre-existing risk factors, angiographic findings, technique of procedure ,acute post procedure adverse events and adverse events at follow up.

Methods: Adult patients aged 18 years or more who underwent LM-PCI at Aga Khan University Hospital Karachi from April 2006 till April 2015 were included in the study. Data was collected from review of charts or via phone follow up and entered on a predesigned proforma. Data analysis was done using SPSS V21.0.

Results: 86 patients underwent LM PCI at the Aga Khan University Hospital[table1] from April 2006 to April 2016. Details of PCI are shown in table 2. 61 patients(70.3%) were alive at a mean follow up of 40.4 months. 25(29.7%) patients had died, with the mean time to death of 18.4 months. 11 patients (12.7%) had in-hospital mortality [table 3]. Among the 75 patients that were discharged from the hospital, 64(74.4%) patients were alive at one year follow up.

5patients(5.8%) had died at one year follow up[table 4]. The mean time to death after PCI was 3.60 months. At one year follow up from index PCI to LM, 10(8.6%) patients had MI ,5(5.8%) patients required target lesion revascularization and 7(8.13%) patients had congestive heart failure. No patient had stroke.

Conclusion: LM PCI is a viable option for those patients who require urgent revascularization due to hemodynamic instability or for patients denying bypass surgery. Further prospective studies are required to evaluate the role of PCI for LM lesions in elective setting.

Keywords: percutaneous left main coronary intervention

2.29 FREQUENCY AND IN-HOSPITAL MORTALITY OF PATIENTS WITH QT INTERVAL DISPERSION IN ACUTE CORONARY SYNDROME

*Shahukh Hashmani, Khawar Kazmi, Aamir Hameed
Section of Cardiology, Department of Medicine, Aga
Khan University, Karachi*

Background: Prolonged QTdc interval on ECG in coronary ischemia is a well-known sign to consider in estimating ischemic risk. The early appearance of QTc interval abnormalities is precisely one of its greatest advantages for ACS diagnosis, since it provides evidence of the disease when, in many cases, ST-segment abnormalities have not yet been demonstrated.

Objectives: To determine the frequency of mean QT interval dispersion in patients with acute coronary syndrome at a tertiary care hospital in Pakistan. To determine the association of prolonged QT interval dispersion with In-hospital mortality

Method: It is a descriptive case series of 165 patients, aged 25 - 75 years who presented with the diagnosis of acute coronary syndrome were admitted through the ER of Aga Khan University Hospital between 13th October, 2016 to 13th March, 2017. Data was collected for hypertension, diabetes mellitus, dyslipidemia, history of smoking, troponin values. 12 lead ECG was recorded both at presentation and at 72 hours of hospital stay. QTdc was measured manually on the ECG at baseline and repeat calculation was made at 72 hours. The QT dispersion (QTDC) was then calculated as the difference of maximum and minimum QTc. The frequency of QT dispersion in ACS patients and inhospital mortality among prolonged QT dispersion patients was calculated. For statistical analysis mean and (SD) were used for quantitative variable and frequency(%) for qualitative variable . Chi-square test of independence was used to check for the association between prolonged QTdc interval at presentation and in-hospital mortality.

Results & Conclusion: The frequency of Prolonged QTDC in patients with acute coronary syndrome was 52.7 % which is slightly higher than as observed in western population. There was no significant association of prolong QTDC with diabetes, smoking, family history of CAD, dyslipidemia and HTN. The frequency of in-hospital mortality in patients

presenting with prolonged QTdC is 3.4%. More studies are warranted to find out the mortality in these patients and the factors that are responsible for it.

2.30

UNUSUAL PRESENTATION OF A YOUNG MAN WITH DISSEMINATED TUBERCULOSIS AND RIGHT VENTRICULAR MASS – A CASE REPORT

*Shahrukh Hashmani¹, Fateh Ali Tipoo Sultan¹,
Muhammad Qamar Masood²
Department of Medicine, Aga Khan University,
Karachi*

Background: We report a 22-year-old man who presented to the emergency department with worsening shortness of breath and chronic fever for 2 months. Physical examination was unremarkable except for raised jugular venous pressure and palpable liver. Echocardiogram showed a large right ventricular mass causing obstruction at tricuspid valve. A subsequent chest CT scan confirmed the presence of a large mass in the right ventricle. There were multiple enlarged lymph nodes and consolidation in the right upper lobe. Diagnosis of disseminated tuberculosis (TB) was made and later confirmed by histopathology of lymph node biopsy along with positive sputum culture for acid-fast bacilli. Remarkable recovery was observed on antituberculous therapy, with complete disappearance of the cardiac mass on echocardiogram, at 1-year follow-up. Although unusual and rare, myocardial involvement as a large mass should be kept in mind while treating patients with disseminated TB. *Case Discussion:* TB presenting as an intracardiac mass is an unusual finding. To the best of our knowledge, this is the first case of cardiac tuberculoma which is being reported from Pakistan. Cardiac tuberculomas are rare and often observed in right heart chambers, particularly in the right atrial wall. They are usually well circumscribed and sharply demarcated from the surrounding parenchyma.[3]

Transthoracic echocardiography can reliably identify the mass and its location. The gold standard method for the diagnosis is culture isolation of the organism or characteristic finding on histopathology. The final diagnosis of TB and possible tuberculoma was made on positive sputum culture and histopathology of axillary lymph node biopsy. Antituberculous therapy was continued for 12 months in our patient to prevent any residual disease. This resulted in complete recovery. In our case, complete resolution of the mass

on antituberculous therapy confirmed it to be a tuberculoma.

Learning points

- ▶ Although cardiac tuberculomas are rare, they should be considered as a differential in patients presenting with cardiac mass, particularly in endemic areas for tuberculosis.
- ▶ Diagnosis should be prompt as they can present with tachyarrhythmias, complete atrioventricular block, right ventricular outflow tract obstruction, superior vena cava obstruction, left ventricular aneurysm and even sudden cardiac death.

Keywords: massive pulmonary embolism, seizure, emergent thrombolysis, chest pain.

2.31

TWIDDLER'S SYNDROME PRESENTING AS LIFE THREATENING ELECTRICAL STORM – A CASE REPORT

*Shahrukh Hashmani, Aamir Hameed Khan
Department of Medicine, Aga Khan University,
Karachi*

Background: A 75-year-old man underwent implantation of a single chamber implantable cardioverter defibrillator (ICD) for primary prevention of his underlying severe non-ischemic cardiomyopathy. Thirteen months later, he presented to the emergency room (ER) with inappropriate ICD shocks as a result of over sensing of the right ventricular lead and double counting of the right atrial signals. The chest X-ray (CXR) revealed a right ventricular ICD lead displaced into the right atrium with coiling in the pocket. The right ventricular shocking coil was noted at the tricuspid annulus. The lead was removed from the pocket and was replaced with a new lead. This case represents the classical Twiddler's syndrome in an ICD with potential lethal consequences.

Case Report: A seventy five years old man presented to the **emergency room** with inappropriate ICD shocks. A single chamber ICD (Ellipse St. Jude Medical, CD 1277-36Q) with an active fixation ventricular lead (Durata 7120 Q-58 St. Jude Medical, USA) had been placed in October 2014 for primary prevention of his underlying severe non-ischemic cardiomyopathy.

He presented thirteen months later with multiple shocks delivered by the ICD. At presentation to ER, the device was interrogated and it showed , a series of eight inappropriate shocks and numerous non-

sustained episodes of ventricular tachycardia (VT). CXR showed most part of RV lead was pulled back into the right atrium with significant twisting of lead making a figure of 8 around the pulse generator. The cause of the over sensing was a lead dislodgment due to rotation of the device by manual manipulation by the patient. Upon questioning, he admitted to have manipulated the device within its pocket repetitively because he “**did not get used to it very well!**” The tightly twisted lead (Durata 7120 Q-58 St. Jude Medical) was identified and dissected free. A figure of “8” loop was noted. The lead was unscrewed and removed without any complications. A new lead (Durata 7120 Q-58, St. Jude Medical) was implanted at the RV apex via the left subclavian approach. *Conclusion:* While twiddling is certainly uncommon, it remains a significant clinical problem, as damage to or dislodgement of leads may result in inappropriate shocks with possible injury or death. With more and more ICD implants been undertaken in Pakistan, we have to be cognizant of this life threatening complication.

2.32

AORTITIS; AN ATYPICAL PRESENTATION

Muhammad Zain Mushtaq¹, Muhammad Atif Waqar², Komal Baloch³
Department of Medicine, Aga Khan University, Karachi

Introduction: Aortitis is an entity with inflammatory changes of the aortic wall; the inflammation can be secondary to an infectious or more commonly noninfectious cause due to large-vessel vasculitides. This can lead to delays in accurate diagnosis and may result in increased morbidity and mortality. *CASE:* We present the case of a 65 year old male patient who presented with complaints of backache and shortness of breath. His past medical history is significant for hypertension and tobacco dependence (120 pack). His pulmonary examination revealed decreased chest movements on left side, dull percussion notes on the left lower zone below the 7th rib. His breath sounds were also found to be decreased in the lower zones, no crackles or rub was noted. A chest X-ray showed left costophrenic angle obliteration. His renal function was deranged on admission (creatinine of 1.4) which improved after hydration. He had a raised WBC count ($25.5 \times 10^9/L$) and a raised C-reactive protein of 16.96). An US guided left sided pleural tap was performed which demonstrated hemorrhagic and exudative lymphocytic fluid. The Pleural fluid DR showed (protein of 4.5

gm/dl, TLC of 1930/cumm with 80% lymphocytes and RBC's of $57600 \times 10^6/uL$). His pleural Fluid Cytology was negative for malignancy. The patient was managed along the lines of a community acquired pneumonia with a resulting parapneumonic effusion. He was started on broad spectrum antibiotics (Ceftriaxone & Azithromycin) and analgesics after which his pain improved and his TLC counts started to decrease. His echocardiogram was done which revealed an EF of 55% with no valvular defects. He also underwent a CT scan of the chest with contrast which ruled out any dissection or aneurysm. Interestingly, however, it was noted that there was diffuse concentric thickening of the thoracic and visualized abdominal aorta with mild periaortic fat stranding. Aortic thickening also extending into the left renal artery. Multiple foci of nipping of intraluminal contrast into the walls were also noted in the descending thoracic and abdominal aorta. The patient improved clinically and was discharged from the hospital. Upon outpatient follow up, the patient's infectious markers were noted to be elevated and a further diagnostic workup and specialty consultations were requested.

Discussion: The majority of the cases of aortitis are non-infectious and idiopathic; having no other systemic disease to be correlated with. Though a less common occurrence, an infectious etiology should always be ruled out before attributing the cause as inflammatory or idiopathic. Our case was interesting since the findings suggestive of aortitis were purely incidental. Our review of the literature also seemed to suggest that extensive investigations and continuous follow up of patients with inflammatory aortitis is mandatory in order to achieve better outcomes.

Keywords: Aortitis, Aorta, Pleural Effusion, DISH

Clinical Trials

3.1

DOSIMETRIC ANALYSIS ON PLANNING TARGET VOLUME (PTV) DUE TO THE PRESENCE OF AIR CAVITIES WITHIN PTV OF NASOPHARYNGEAL CARCINOMA

Hasham Ahmed, Shahzaib Naeem, Shoukat Ali
Department of Oncology, Aga Khan University

Background: Based on clinical studies comparing with Intensity modulated radiation intensity (IMRT) and other treatment techniques IMRT is superior in many aspects. It gives better target coverage, high dose conformity and minimal doses to normal organs. IMRT is extensively use in many head and neck tumors although it increase treatment time, number of monitor unit and integral dose. The purpose of IMRT treatment plans are to achieve 98-105% target coverage and reduce the dose of surrounding health tissue. Sometime it is difficult to achieve because of the presence of healthy tissue and air cavities with in Planning target volume. The objective of this study is to investigate the dosimetric impact on Planning target volume (PTV) due to the presence of air cavities within PTV of nasopharyngeal carcinoma.

Methods and materials: Ten patients of nasopharyngeal carcinoma were selected in this study. All patients were undergo for conventional followed by CT simulation. Physician Contour gross tumor volume (GTV), Clinical target volume (CTV) and PTV. The prescribe dose was 70Gy for gross disease and 50Gy for elective nodal region. Dosimetrist contour organs at risk (OAR's) and air cavities present within PTV. The PTV-air cavity was obtain by subtracting volume of air cavity from actual PTV. Two plans, plan A for actual PTV and plan B for PTV-air cavity were optimize by applying seven coplanar 6MV IMRT fields. The treatment plans were compare by analyzing target coverage, OAR's doses, planning time, number of monitor units, homogeneity and conformity index. Results: It was observed that mean 3% (2.5-4.5%) increase in target coverage for plan A. The mean 5% less time required for plan A optimization. On average 3.5% (1.7-4.9%) deviation in homogeneity index observed between two plans. The mean 2% (1.5-3.1) difference was observed for the doses of OAR's. The less than 1% deviation between numbers of monitor units was observed between two plans.

Conclusion: Dose constraints applied on PTV-air cavity can increase target coverage by reducing OAR's doses.

Keywords: Intensity modulated radiation therapy, Planning target Volume, Homogeneity index, conformity index

3.2

CHILD-FRIENDLY ACTIVITIES ON PATIENT SATISFACTION IN THE PEDIATRIC EMERGENCY DEPARTMENT: AN INTERVENTIONAL TRIAL

Rubaba naee, Salima Bhemai, Asher Feroze, Uzma Rahim Khan, Asad Iqbal
Department of Emergency Medicine, Aga Khan University

Introduction: Child- and family-centered care in the Pediatric Emergency Department (PED) is imperative for patient quality and safety, as well as for allaying anxiety in both parents and their children. Objective: To assess satisfaction of children before and after introduction of child-friendly activities in PED of a low-resource country.

Methods: This was an interventional trial conducted at Aga Khan University PED, Karachi, Pakistan, between October 2014 and February 2015. Children (6 months – 16 years) presenting to PED and categorized as priority levels 3-5 per Emergency Severity Index were enrolled in two phases. No intervention was provided in first phase (control group). In second phase, after a month, age-appropriate, low cost child-friendly activities were introduced (intervention group). Satisfaction was gauged using the modified Wong-Baker scale administered to patients (over 6 years) or parents (with children under 6 years), by pre-trained data collectors before and after introduction of child-friendly activities in PED.

Results: a total of 606 patients were enrolled, 303 in each control and intervention group respectively. Mean age in the control group was higher at 66 months vs. 62 in the intervention group. No significant difference was observed in mean satisfaction levels for overall treatment between the two groups (2.2 in control vs. 2.3 in intervention). However, more patients were categorized as priority level P3 (urgent) on triage within the intervention group versus control group (98% vs. 93%; p=0.004). Similarly, more than half of patients were discharged (55%) and about a third admitted (34%) in the intervention group, compared with 65% discharged and 30% admitted in the control group (p

Conclusion: To conclude, child-friendly activities in the PED did not improve patient satisfaction. Additional strategies may be needed to help the

pediatric population deal with emotional turmoil during their visits to the low-resource PED.

Keywords: child-friendly activities, child-centric care, intervention

Dental/Orthodontics

4.1 TOOTH BRUSHING FREQUENCY AND ITS SOCIO-DEMOGRAPHIC CORRELATES AMONG SCHOOL-GOING CHILDREN IN SINDH, PAKISTAN

Mehak Pervaiz
Department of Human Development Programme, Aga
Khan University

Introduction: Tooth brushing is important to preserve good oral hygiene. Tooth brushing habits learnt during early years of life influence good oral hygiene later in life. This study aimed to explore tooth brushing frequency and their associated socio-demographic characteristics among school-going children in Sindh. *Methodology:* A cross-sectional study was carried out in 8 districts of Sindh, including Karachi, Sukkur, Dadu, Kamber Shadadkot, Khairpur, Jacobabad, Larkana and Kashmore. A total of 1109 school children from classes 2-5 were approached from 36 schools. The information about children's socio-demographic characteristics and tooth brushing frequency was obtained through a self-administrated questionnaire. The responses to tooth brushing frequency were categorized as 0 = tooth brushing less than once a day and 1 = daily tooth brushing. Data was entered into a computerized program using EpiData 3.1. Data analyses were performed using SPSS 20.0. *Results:* The mean age was 9 (SD±1.2) years and 53% were boys. Prevalence of daily tooth brushing was almost 50%. The frequency of daily tooth brushing was higher among girls (57%), compared to boys (43%) (p=0.05).

Conclusion: Socio-demographic factors including gender, geographical area and educational level of school children can influence their frequency of teeth brushing. It can possibly indicate presence of oral health inequalities among school children.

Keywords: oral health, teeth brushing, school children

4.2 PREDICTING THE SAGITTAL SKELETAL PATTERN USING DENTAL CAST AND FACIAL PROFILE PHOTOGRAPHS IN CHILDREN AGED 9 TO 14 YEARS AT THE AGA KHAN UNIVERSITY AND HOSPITAL KARACHI

*Rashna Hoshang Sukhia, Rozina Nuruddin, Syed Iqbal
Azam, Mubassar Fida*
Departments of Surgery and Community Health
Sciences, Aga Khan University

Introduction: Cephalometric radiographs which are routinely used to assess a patients sagittal skeletal pattern are costly, might not be available in all dental setups especially in rural areas and expose the individual to harmful radiation exposure. Hence there is a need to explore non radiological methods to arrive at a diagnosis.

Objective: To quantify prediction of sagittal skeletal pattern (ANB angle) using anteroposterior dental relationships on dental casts and facial profile photograph soft tissue analyses, adjusting for demographic, behavioral, respiratory illness and familial factors, among children aged 9 to 14 years.

Methods: A cross sectional study was carried out from December 2016 to July 2017 at the Orthodontic Clinic of the Aga Khan University Hospital Karachi on a random sample of 76 patients who attended the clinic in last five years. The sagittal skeletal relationship was assessed on the cephalometric radiograph using the ANB angle. Anteroposterior dental and facial cephalometric measurements were done on their dental cast and facial profile photograph. Multiple linear regression was used to make a prediction model for ANB angle using anteroposterior dental relationships and facial profile photograph soft tissue analyses.

Results: Highest percentage of variability (47.4%) in ANB angle by the soft tissue ANB' angle was observed. 54.9% of the variability in the ANB angle can be explained by overjet, soft tissue ANB' angle, lower lip to E line distance, Class II incisor relationship, history of malocclusion and thumb sucking, interaction terms between Class II incisor relationship and history of malocclusion, and history of thumb sucking and soft tissue ANB' angle.

Conclusion: Sagittal skeletal relationship in an individual can be hence be predicted using the prediction equation incorporating dental and facial variables along with history of malocclusion and thumb-sucking.

Keywords: prediction, sagittal skeletal pattern, dental relationships

4.3 PREDICTING THE BRACKET BOND FAILURE RATE IN ORTHODONTIC PATIENTS AT A DENTAL HOSPITAL IN KARACHI, PAKISTAN: A RETROSPECTIVE COHORT STUDY

Rashna Hoshang Sukhia, Hoshang Rumi Sukhia, Syed Iqbal Azam, Rozina Nuruddin, Azra Rizwan, Sabeena Jalal Khan

Departments of Surgery, Aga Khan University and Department of Orthodontics, Sir Syed College of Medical Sciences, Karachi

Objective: The aim of this study was to determine the risk factors associated with orthodontic bracket bond failure and to develop a prediction equation for orthodontic bracket bond failure rate using the risk factors.

Materials and Methods: This was a retrospective cohort study conducted on a sample of 690 brackets in orthodontic patients aged 10 to 28 years (mean age 17.97 ± 5.11 years) visiting a dental hospital in Karachi. The effect of bracket material, bond material, maxillary or mandibular jaw, anterior or posterior site, right or left side, overjet, overbite, incisor and molar classification, gender and age was assessed on bracket failure rate using survival analysis. Parametric (Exponential) regression analysis was used to determine the risk factors associated with bracket failure and a prediction equation was formulated to predict the bracket failure rate.

Results: The overall mean survival time for the brackets was 3.04 (2.9 – 3.17) years. The univariable analysis showed a statistically significant ($p < 0.05$) association of bracket material, site, overjet, overbite, incisor and molar classification and age. The multivariable analysis showed a significant interaction between site and side alongwith bracket material, jaw, overjet and overbite in the model. The risk of bracket failure on the right posterior region is 7.7 (4.3 – 13.6) times that in the right anterior region when adjusted for all other variables in the model.

Conclusion: The model including bracket material, jaw, overjet, overbite and interaction between site and side can be used as a predictor of hazard rate for orthodontic bracket failure.

Keywords: orthodontic bracket, forecasting, bond failure

4.4 VISUAL AND MICROSCOPIC EVALUATION OF THE SURFACE ALTERATIONS IN THE PRO-TAPER FILES AFTER SINGLE CLINICAL USE

Surhan aziz, Robia Ghafoor, Meisha Gul, Farhan Raza Khan

Department of Surgery, Aga Khan University

Introduction: Different studies have been conducted in which defects of Ni-Ti files were reported after multiple usages but limited data is available regarding the defects in the rotary Ni-Ti files subjected to single clinical use. **Objective:** To determine the frequency of surface defects caused by fatigue in the rotary ProTaper files after single clinical use assessed with visual and microscopic examination methods.

Materials & Methods: A cross-sectional study was conducted in the dental clinics of The Aga Khan University Hospital, Karachi, Pakistan. A total of 189 ProTaper Ni-Ti files (after single clinical use in multi-rooted molars) were analyzed visually and then under stereomicroscope at 10X magnification for surface defects (straightening, denting, bending, twisting, pitting and change in length). Chi Square test was used to determine association between type of file and type of defect. Spearman's correlation test was used for determination of correlation between visual and microscopic examinations at 0.05 level of significance. **Results:** 19% of files showed straightening on visual assessment as compared to 66.1% under microscopic examination. There was a statistically significant association between the file type and the straightening of file ($p \text{ value} \leq 0.001$). A weak correlation existed between visual and microscopic examination for all the defects, except for the change in length.

Conclusions: The defects of ProTapers files are best detected by the microscopic examination.

Straightening is the most common defect observed visually and microscopically. The first shaping and first finishing files underwent significantly more surface defects than the rest of the rotary files in the series.

Keywords: root canal preparation, root canal therapy, instrumentation

4.6

MOST EFFECTIVE LOCAL ANESTHETIC TECHNIQUE FOR MANDIBULAR POSTERIOR TEETH WITH IRREVERSIBLE PULPITIS: A SYSTEMATIC REVIEW AND META- ANALYSIS

Muhammad Rizwan Nazeer, Kamil Zafar, Farhan Raza Khan, Robia Ghafoor
Department of Surgery, Aga Khan University

Background: The inferior alveolar nerve block is considered as the gold standard local anesthetic technique for anesthetizing the mandibular posterior teeth for performing root canal treatment. However, it is not effective among 30-80% of the patients presenting with symptomatic irreversible pulpitis. The aim of the present systematic review is to compare the standard inferior alveolar nerve block with other local anesthesia techniques for effectively anesthetizing the mandibular posterior teeth that presents with irreversible pulpitis.

Data source: A systematic review protocol was registered at Prospero (CRD# 42016051209). Following databases were searched: PubMed (NLM), CINAHL, Cochrane, EBSCO Oral and Dentistry Database and trip database along with hand search using strict inclusion and exclusion criteria. The following PICOS model was employed: Participants: The mandibular posterior teeth presenting with irreversible pulpitis. Intervention: Standard Inferior alveolar nerve block technique (IANB). Comparators: Gow-Gates technique, Vazirani-Akinosi technique, Intra-osseous technique, Supplemental infiltration techniques. Outcome: Most effective anesthesia technique Study *Designs:* Randomized controlled trials. Study selection: We included all randomized control trials on the topic published in English language only. Narrative reviews, case reports/series, case control, cohort and single arm clinical studies were excluded. Results: The first electronic search yielded 1,211 articles and after including 2 more articles from hand search, a total of 1213 articles were collected. After going through extensive screening and eligibility process, only 8 articles were finally selected for the review. There were total 10 comparison groups (techniques of anesthesia in mandible) reported in 8 trials. There were six Articaine Infiltration technique groups; two were based on intra-osseous technique, and one each on Gow-Gates and Vazirani-Akinosi methods. The standard IANB method was compared with other mandibular anesthesia techniques pooled together. A meta-analysis was carried out to compare inferior alveolar nerve block with the articaine infiltration. The difference among two set of

techniques was found to be non-significant (p - value = 0.07). However, the overall result of the meta-analysis favour articaine infiltration.

Conclusions: None of the anesthetic technique provided 100% anesthesia. Infiltration (IF) and Intra-osseous (IO) appeared to be viable alternative to standard inferior alveolar nerve block (IANB) in the posterior teeth with irreversible pulpitis. The result of the meta-analysis favour articaine infiltration when compared with to standard inferior alveolar nerve block (IANB). There is not enough evidence to infer upon the effectiveness of Gow-Gates (GG) and Vazirani-Akinosi (VA) techniques. It's safe to recommend that in addition to IANB, supplemental local Anesthesia techniques (such as GG, AZ or IO) could be employed for anesthetizing mandibular teeth with irreversible pulpitis

Keywords: Inferior alveolar nerve block technique, Irreversible pulpitis, Gow-Gates technique

4.7

COMPARISON OF MARGINAL BONE LOSS AROUND CEMENT AND SCREW-RETAINED FIXED IMPLANT PROSTHESIS

Muhammad Hasan Hameed, Farhan Raza Khan, Robia Ghafoor, Sheikh Bilal Badar
Department of Surgery, Aga Khan University

Background: Fixed implant-supported restorations are considered as the standard treatment for replacement of missing teeth. These can be either screw or cement retained. The success or failure of implant restorations depend upon amount of marginal bone loss (MBL). The present study is to compare the MBL around cement and screw-retained implant prosthesis and to determine various predictors of the MBL.

Materials and Methods: A retrospective charts review was conducted at the dental clinics, Aga Khan University Hospital, Karachi from October 2016 to December 2016 in which 104 implants restorations were evaluated using periapical radiographs. MBL was calculated at baseline and at 12 months and the difference was recorded on a proforma. SPSS version 21.0 was used for statistical analysis. Descriptive statistics was computed. Independent sample t-test was used to determine the difference in the MBL between the two groups (cement-retained vs. screw-retained) crowns and fixed partial dentures. Binary logistic regression was applied to determine the predictors of MBL (≥ 1.5 mm). Level of significance was kept at ≤ 0.05 .

Results: There were 104 implant restorations belonging to 41 patients. There was no difference of the MBL around screw retained versus cement retained crowns. However, the distal surface of screw retained fixed partial dentures showed significantly greater MBL (p-value = 0.028). Age, gender, implant location and implant diameter were associated with the MBL.
Conclusions: MBL on the distal surface around screw retained fixed partial dentures was significantly greater compared to the cement retained fixed partial dentures. Age >65 years, posterior maxilla and implant diameter >4.7mm were found to be weak predictors of MBL. Only male gender turned out to be strongly associated with MBL.

Keywords: Dental implants, Implant supported dental prosthesis, alveolar bone loss

4.8 EFFECTIVENESS of HALL TECHNIQUE: A SYSTEMATIC REVIEW

*Sadia Tabassum, Farhan Raza Khan
Department of Surgery, Aga Khan University*

Introduction: Dental decay in young children has been a serious challenge in developing as well as developed countries. Untreated decay can have a social bearing on a child's quality of life as well as economic consequences on the parents' lives. Consequently, timely treatment of carious primary molars is essential in order to maintain space for the developing permanent molars. Caries has been managed historically by restoration as well as prevention. Restoration of teeth with filling materials can often lead to a structurally weak tooth. Preformed metal crowns on the other hand, have shown significant clinical success and are considered a favorable restoration option for moderate to severe caries involving two or more surfaces of primary molars.
Objective: To evaluate the effectiveness of Hall Technique compared with dental restorations placed after mechanical debridement (amalgam, composite, GIC, RMGIC, compomer or SS crown) Methods: In addition to search engines like PubMed, CINAHL plus (Ebsco) and COCHRANE, Scopus and Dent & Oral science, hand search was also used to search articles related to our review question using the key terms and different permutations: (Hall technique* OR "hall's technique" OR "preformed metal crown" OR stainless steel crown) AND (caries OR carious molar* OR deciduous tooth* OR baby tooth* OR milk tooth OR primary tooth). Initial electronic search yielded 472

articles which were narrowed down to 4 articles that fulfilled our inclusion criteria.

Results: A total of 4 studies were included in the systematic review among which 2 were randomized control trials and 2 were retrospective chart reviews. Outcome measures like longevity or survival of the SS crown, major failure and minor failure were seen.
Conclusions: Randomized trials concluded that Hall Technique is a predictable restorative option, with low failure and Hall Technique statistically, and clinically, significantly outperformed the standard restorations. Retrospective studies concluded that Hall Technique has a similar success rate to some other, more conventional, restorative techniques and similar success rate were seen for SSCs placed with the traditional technique or the Hall technique.

Keywords: Hall Technique, SS crowns, deciduous carious molar

4.9 EVALUATION OF ROOT MORPHOLOGY AND CANAL CONFIGURATION OF MAXILLARY PREMOLAR IN A SAMPLE OF PAKISTANI POPULATION BY USING CONE BEAM COMPUTED TOMOGRAPHY

*Dr Shizrah Jamal, Dr Rizwan Nazeer, Dr Farhan Raza Khan, Dr Robia Ghafoor
Department of Surgery, Aga Khan University*

Abstract Objectives: To evaluate the root canal morphology of maxillary premolars.
Method: This retrospective study was conducted from November 2016 to January 2017 at Aga Khan University Hospital, Karachi, and reviewed Cone Beam Computed Tomography images of maxillary first and second premolars done from November 2014 to October 2016. Frequency distribution of Vertucci's classification was determined. Chi square test was applied to determine any association between Vertucci's type and gender. SPSS 19 was used for data analysis.
Results: Of the 114 first premolars, 74(68.6%) were bi-rooted and 36(31.5%) were single-rooted. The mean lengths of buccal and palatal roots were 20.6 ± 1.7 mm and 19.5 ± 2.0 mm, respectively. The most common canal morphology reported for maxillary first premolars was type I 127(68%) followed by type II 24(12.9%). Of the 115 maxillary second premolars, 97(84%) were single-rooted. The mean lengths of buccal and palatal root were 20.7 ± 1.6 mm and 19.0 ± 1.45 mm. The most common canal morphology

reported for second premolars was type I 71(53.4%) followed by type II 18(13.5%).

Conclusion: Vertucci's type I was the most common canal configuration and there was no gender-based difference for root canal morphology of maxillary first and second premolars.

Keywords: Root canal, Endodontic treatment, CBCT

4.12

ASSESSMENT OF CONTAMINATION ON STERILIZED DENTAL BURS AFTER BEING SUBJECTED TO VARIOUS PRE-CLEANING METHODS

Meisha Gul, Robia Ghafoor, Surhan Aziz, Farhan Raza Khan
Department of Surgery, Aga Khan University

Background: Due to complex architecture of dental burs, pre-cleaning and sterilization is difficult to achieve. Improper sterilization leads to transmission of infectious diseases.

Objective: To determine the effectiveness of different pre-cleaning methods by determining frequency and site of contamination remaining on the sterilized dental burs using Phloxine B dye.

Methods: An in-vitro experimental study was conducted at dental clinics of a tertiary care hospital Karachi, Pakistan. Diamond dental burs (n=210) meeting inclusion criteria were selected and divided into six groups, two controls (Negative = new burs, Positive= used contaminated burs) and four test groups (Group I= manual, Group II= Ultrasonic, Group III= manual + enzyme and Group IV= manual + ultrasonic + enzyme). Phloxine B dye was used to determine the contamination. The images of the burs were taken and enlarged at 15X before subjected to visual assessment. Chi square test was applied to determine any association between contamination and the pre-cleaning methods, p-value of ≤ 0.05 was taken as statistically significant.

Results: One bur (2.8%) showed contamination in control group I, whereas no bur in the control group II exhibited contamination. Around, 77.1%, 82.8%, 77.1%, and 68.5% of diamond burs showed contamination in groups I, II, III and IV, respectively. There was no association between type of pre-cleaning method with the frequency of contamination (p = 0.57). The head of bur was the most frequently contaminated site. (p = < 0.001)

Conclusions: None of the pre-cleaning method was found to be effective. However, combination of multiple pre-cleaning methods was relatively better

method to decontaminate diamond burs prior to the sterilization. Head of bur was the most frequently contaminated site.

Keywords: Decontamination, Phloxine B, Sterilization

Endocrinology/Diabetes

5.1

CLINICAL UTILITY OF ENDOCRINE MARKERS PREDICTING MYOCARDIAL SIDEROSIS IN TRANSFUSION DEPENDENT THALASSEMIA MAJOR (TDTM): A T2* CARDIAC MRI BASED STUDY

Lubaina Ehsan, Mariam Rashid, Najveen Alvi, Khadija Awais, Omair Nadeem, Aleezay Asghar, Fatimah Sajjad, Malika Fatima, Asim Qidwai, Shabneez Hussain, Erum Hasan, Nick Brown, Sadaf Altaf, Babar Hasan, Salman Kirmani
Medical College, Department of Paediatrics & Child Helath, Aga Khan University, Afzaal Memorial Thalassaemia Foundation, Laboratory and Clinical Department, Fatimid Foundation, Kashif Iqbal Thalassaemia Care Centre, Karachi and Paediatric Department, Salisbury District Hospital, Salsisbury, Wiltshire, United Kingdom

Endocrinopathies due to iron overload are the most common complications among Transfusion Dependent Thalassaemia Major (TDTM) patients, whereas myocardial siderosis causing toxic cardiomyopathy is the leading cause of mortality in these patients. If detected early, this can be treated with aggressive chelation protocols. Given the proven unreliability of serum Ferritin as a marker of iron overload, T2* Cardiac Magnetic Resonance Imaging (CMR) guided chelation protocols are now the gold standard but have limited availability in low-middle income countries (LMIC) like Pakistan. We hypothesized that markers of endocrine dysfunction would be associated with T2* CMR and, thus, be used as a potential proxy to predict the severity of myocardial siderosis, and guide chelation therapy. We undertook a multicenter retrospective study of 280 TDTM patients to look at the prevalence of endocrinopathies and to assess the predictive value of a number of individual and composite markers of endocrinopathy with T2*CMR. The prevalence of hypogonadism, stunting, hypoparathyroidism and hypothyroidism was 82%, 69%, 40% and 30%, respectively. The sensitivity of hypogonadism and stunting predicting severe iron overload was 90% and 80%, respectively. We conclude that the clinical markers of endocrine dysfunction, especially hypogonadism (LR+=1.4) and stunting (LR+=1.3) in TDTM can predict severe iron overload and can potentially guide chelation therapy, especially where access to T2*CMR is limited.

Keywords: Thalassaemia Major, T2*, Endocrinopathy

5.3

STUDIES ON THE EFFECT OF COUMARIN ON METABOLIC PARAMETERS AND FETUIN-A EXPRESSION IN FRUCTOSE-FED-DIABETIC RATS

Ali Aahil Noorali, Malik Hassan Mehmood, Shafiq Ali Shah, Ghulam Haider, Ishfaq Ahmed Bukhari, Anwarul Hassan Gilani
Medical College, Department of Biological and Biomedical Sciences Aga Khan University, Department of Pharmacy, University of Malakan, KPK, Pakistan Council for Science and Technology, Islamabad, Pakistan and King Saud University, Riyadh, Saudi Arabia

Background and Objective: Coumarins are secondary metabolites found in edible plants such as tonka bean extracts, woodruff and cinnamon. Their multiple therapeutic benefits include anticoagulant, antithrombotic and antioxidant properties which have been studied in literature. This study targets the potential anti-diabetic effect of coumarins on pancreatic B-islet cells and the expression of Fetuin-A using fructose-fed diabetic rats.

Method: The fructose-induced diabetes model was developed in rats after administering 40% fructose for 8-12 weeks. Upon the development of diabetes, coumarin (treatment arm) was administered at two doses (C1: 30 and C2: 70 mg/kg). Metformin (300 mg/kg) was also administered as positive control. Each group had an equal number of animals ranging from 8-10. On the terminal day of the experiment, serum samples were analyzed for glucose and lipid profile while aortic, pancreatic and hepatic tissues were isolated for vasomodulatory, histological and immunohistochemical investigations respectively.

Results & Discussion: Administration of coumarin produced protection against fructose-induced diabetes and improved serum parameters, mean number of islets of β -cells (C1= 5, C2= 4 vs diseased = 3.6), mean size of islets (C1= 40.5, C2= 38.4 vs diseased = 23.4 μ m) and mean thickness of septa (C1= 5.8, C2= 5.4 vs diseased = 13.0 μ m) in histological findings when compared with diseased group. Similarly, immunohistochemistry results showed that the intensity of fetuin-A staining was significantly reduced in the treatment arm compared to the diseased arm. Fetuin-A is a hepatokine (plasma glycoprotein) that inhibits insulin's tyrosine kinase receptor and causes a rise in inflammatory cytokines.

Conclusion: This study highlights the protective effect of coumarin against fructose-induced-diabetes by improvement in both β -cells mass and the histology of

hepatic and pancreatic tissues. This intervention has also attenuated the expression of Fetuin-A which has an established inverse relationship with disease progression.

Keywords: coumarins, fetuin-A, fructose-induced-diabetes

5.4

ALTERATION OF LIPID PROFILE AND ITS ASSOCIATED ATHEROGENIC INDICES DUE TO HYPOTHYROIDISM AMONG POSTMENOPAUSAL FEMALES.

Syeda hiba hashmi, muhammad nisar, Nimra Naz Siddiqui
Department of Clinical Imaging, Aga Khan University, Department of Physiology, University of Karachi and Panjwani Center for Molecular Medicine and Drug Research, International Center for Chemical and Biological Sciences

Background: Menopause is a natural process of cessation of menstruation. This leads due to estrogen deficiency and accelerate atherogenic processes including dyslipidemia. Prevalence of thyroid dysfunction is reported as high in postmenopausal women.

Aims and Objectives: We aim to study the associations between TSH, T3 and T4 WITH lipid profile on Overt Hypo and Subclinical Hypothyroid postmenopausal female.

Methodology: We have performed a case-control study of 120 postmenopausal females of age group (47-63) who visited Civil hospital from August 2016 to November 2016. 40 females were taken as control, 40 were taken as subclinical hypothyroid and 40 were taken as overt hypothyroid. BMI and age remains constant in each group. Lipid profile was assessed by using CHOD-PAP method for total cholesterol, GPO-PAP method for triglycerides, CHOD-POP method for HDL-C, whereas LDL-C and VLDL were calculated by using Friedwald's formula. Thyroid hormone function test was done by using ELISA method. Data analysis was performed with SPSS 20.

Results: In our results, one-way ANOVA showed that lipid profile and atherogenic indices were found to be significant in subclinical and overt hypothyroid group as compared to control euthyroid group ($p < 0.05$). Significant correlation was found between elevated lipid profiles as well as altered atherogenic indices with hypothyroidism (p value < 0.05). Negative correlation was found between lipid profile and T3 as well as T4 in overt hypothyroidism and positive

correlation was found in lipid profile and TSH among both the groups

Conclusion: Our present study shows that subclinical hypothyroidism as well as overt hypothyroidism leads toward elevated levels of lipid profile and altered atherogenic indices as compared to control group. It will cause dyslipidemia in postmenopausal females and being one of the reason of having atherosclerosis and coronary heart diseases.

Keywords: Subclinical hypothyroid, overt hypothyroid, post-menopause

5.5

AHSG RS4918 POLYMORPHISM POSES A WEAK PREDISPOSITION TO INSULIN RESISTANCE DURING PREGNANCY

Aisha Tariq, Aleezhay Asghar, Syeda Sadia Fatima, Faiza Alam
Medical College and Department of Biological & Biomedical Sciences, Aga Khan University

Objective: AHSG or Fetuin A has been associated with increased insulin resistance the development of type 2 diabetes mellitus and gestational diabetes mellitus (GDM). This study was aimed to identify the association between Fetuin A levels and genetic polymorphism with GDM among pregnant women visiting a tertiary care center.

Methods: This study recruited 44 females with GDM and 44 females with normal blood glucose as control group. We recruited pregnant females in their second trimester from December 2015 to September 2016 at the Aga Khan University Hospital, Karachi. 10 ml blood samples were collected from each individual; serum and DNA were extracted and stored at -80°C . Fetuin-A levels were quantified using ELISA assay while genotyping for AHSG rs4918 was performed using restriction fragment length polymorphism technique. Written informed ethical consent was taken from all patients before recruitment.

Results: Serum Fetuin A concentration was higher in subjects with GDM when compared to the normoglycemic individuals (p

Keywords: Fetuin A, GDM, AHSG polymorphism,

5.6

ASSOCIATION OF SERUM IRISIN WITH INSULIN RESISTANCE AND LIPID PROFILE IN PRE-DIABETIC AND TYPE 2 DIABETES MELLITUS

Nimra Naz Siddiqui, M.Nisar, Syeda Hiba Hashmi
Department of Clinical Imaging, Aga Khan University,
Department of Physiology, University of Karachi and
Panjwani Center for Molecular Medicine and Drug
Research, International Center for Chemical and
Biological Sciences

Introduction The newly identified muscle secreting Irisin is found in mice models and in Humans. FNDC5 gene is responsible for its production followed by the action of PPAR- γ co-activator-1 α (PGC-1 α). This myokine regulates energy homeostasis, reduces obesity and forms brown fat from white adipose tissue.

Aims and Objectives The aim of the study was to identify the level of serum Irisin in Pre-diabetes and T2DM and to establish the association of Irisin with Insulin Resistance, Fasting Plasma Glucose and Lipid Profile.

Methodology This Case-control study was performed in 120 subjects, out of which 40 were control, 40 were pre-diabetic and 40 were diabetic. All subjects were between the age of 55 to 65. WHO criteria was used for diagnosis of both pre-diabetes and diabetes. Fasting blood sample were taken to identify the levels of fasting plasma insulin, FPG, irisin and lipid profile. HOMA calculator (version 2.2.3) was used for estimation of insulin resistance, percent beta cell and insulin sensitivity. For Statistical analysis, SPSS version 22 was used.

Result: Serum Irisin were significantly decreased in both pre-diabetic and diabetic as compare to normoglycemic subjects (p

Keywords: Insulin Resistance, Glucose Tolerance, Myokine

5.7

ANALYTICAL AND CLINICAL VALIDATION OF ANTIBODIES TO GLUTAMIC ACID DECARBOXYLASE (ANTI-GAD)

Shabnum Khawaja, Lena Jafri, Aysha Habib Khan, Nanik Ram, Hafsamajid
Departments of Pathology and Laboratory Medicine,
and Medicine, Aga Khan University

Aim: To optimize and validate the analytical and clinical performance of Anti-GAD Antibodies assay.

Methods: A Cross-sectional study using samples from patients, controls and calibrators. Anti-GAD antibodies were measured on ETI-max 3000 immunoassay analyzer by ELISA method using kits by Immune-Biological Laboratories (IBL international). For analytical measuring range (AMR), accuracy and linearity calibrators were run in triplicate. Control material were used for precision with 20 replicates for 5 days. Alternate assessment was done using split sample analysis method and comparing with Mayo Medical Laboratories, US. For clinical validation patients suspected for type I Diabetes were recruited from outpatient endocrine clinics, identified by an Endocrinologist. Subjects were categorized into Diabetes and pre-diabetes based on HbA1c values. EP evaluator and SPSS version 20 were used for statistical analysis.

Results: Precision study on ETI max 3000 showed CV of 3.8% with mean 59.1IU/ml. Four standards were run in triplicate to verify AMR/linearity and accuracy from 0-500IU/ml with slope 0.94, intercept 0.0. On method comparison of RIA and ELISA, anti-GAD antibody showed very good agreement; Cohen kappa was 100% over a range of 2-500IU/ml. For clinical validation (n=30) samples were used with mean age and BMI 27.9 \pm 13.8years, 28.1 \pm 9.5kg/m² respectively. Based on HbA1c levels 83% (n=25) subjects were diabetic, remaining were prediabetic with mean of 9.1 \pm 2.65% and 6.6 \pm 0.01% respectively. While anti-GAD antibody levels were 60.9 \pm 104 IU/ml and 5.04 \pm 4.08IU/ml for diabetic and prediabetic groups respectively. Seventy three percent subjects (n=22) had type 1 diabetes based on positive Anti-GAD antibody levels.

Conclusion: Anti-GAD antibody assay results on ELISA correlated well with the RIA. Its testing should be a routine practice for assessing all patients with diabetes to classify them into type 1 diabetes or Latent Autoimmune Diabetes of Adulthood

Keywords: Anti-GAD antibodies, diabetes Mellitus, , Endocrine clinics

5.8

USE OF CAMEL MILK BY TYPE 2 DIABETIC PATIENTS IN KARACHI: A CROSS SECTIONAL SURVEY

Zainab Hasan, Zeba Saeed, Fadeilah Sohail
Jinnah Medical & Dental College , Karachi

Objectives: To determine the frequency of camel milk users as a dietary adjunct therapy in Diabetes Type 2.

Study Design. A cross sectional questionnaire based survey. Period: May to August 2013. Setting: Liaquat National Hospital & Jinnah Medical College Hospital) and one public sector hospital (Jinnah Postgraduate Medical Centre) in Karachi. *Methods:* Minimum sample size using 11.1% prevalence of type II diabetes mellitus, confidence interval of 95% and 5% margin of error and finite population correction for large population was calculated to be 152. Using purposive sampling, type II diabetes patients (taking oral hypoglycemic medication or insulin to control serum blood glucose) visiting outpatient departments for diabetes management at two private and one public sector hospital in Karachi, were requested to participate. After obtaining informed consent, a structured pre-coded questionnaire was filled by trained interviewer. Two laboratory assessed fasting blood (FBG) readings from previous three months were also recorded from their files. Those who affirmed the use of camel milk were asked further questions on reasons and consumption pattern. All responses were entered into SPSS version 17.0 and descriptive frequencies and statistics were obtained for camel milk users and non-users.

Results: 300 patients consented to participate and filled the questionnaire. 36 forms did not have two FBG lab reports from previous three months and were excluded. In the remaining sample size of $n = 264$, camel milk use frequency was 35.98% ($n=95$). In the preceding three months, the median FBG of users was 121.0 mg/dl as compared to median FBS of non-users (64.01%; $n = 169$) of 202.06 mg/dl. 90.5% ($n=86$) of all users considered oral medications as main modality for control and only 15.8% of these patients attributed blood glucose control solely to use of camel milk. Camel milk users were found to use more of home remedies (13.7%, $n = 13$), homeopathic medicine (15.8%, $n = 15$) and exercise (45.3%, $n=43$) as adjunct modalities to control their blood glucose as compared to 6.5%, 8.9% and 31.4% of non-users. 71.6% ($n= 121$) of non- users used dietary modification to manage diabetes as compared to 47.4% ($n = 45$) users. 71% ($n = 121$) non-users were regularly measuring their blood glucose levels as compared to 56.8% ($n=54$) users of camel milk.

Conclusions: Diabetics drinking camel milk showed a marked decrease in mean Fasting Blood Sugar values as compared to non-users. More experimental studies should be conducted on a larger scale and on different regions so as to ascertain the biological plausibility.

Keywords: diabetes, camel milk, blood sugar

5.9

FROM LABORATORY TO CLINIC: TPPU A NOVEL THERAPEUTIC OPTION FOR CARDIOVASCULAR AND METABOLIC DYSFUNCTIONS

Malik Hassan Mehmood, Shafiq Ali Shah, Ishfaq Ali Bukhari, Ghulam Haider, Munasib Khan, Anwar-ul-Hassan Gilani

Medical College, Department of Biological and Biomedical Sciences Aga Khan University, Department of Pharmacy, University of Malakan, KPK, Pakistan Council for Science and Technology, Islamabad, Pakistan and King Saud University, Riyadh, Saudi Arabia

Background: Cardiovascular disorders and diabetes mellitus are the major public concern. By an estimate, 285 million people in the world have diabetes mellitus in 2010 which will increase to 7.7% by 2030. There is a lot more need to halt these disorders at initial stage like pre-hypertension, pre-hyperlipidemia or pre-diabetes, cumulatively reflecting metabolic syndrome (MS). Now a day, the only intervention available for MS is lifestyle modification and intake of healthy diet. This study has been designed to evaluate the use of 1-trifluoromethoxyphenyl-3-(1-propionylpiperidin-4-yl) urea (TPPU) as therapeutic agent for metabolic disorders, such as insulin resistance, abnormal lipid profiles, hypertension. *Material & Methods:* TPPU was studied in the in-vivo and in-vitro assays using Sprague Dawley rats and the aortic preparations from these animals. For the assessment of acetylcholine-induced vasodilatation in isolated aortic rings, isometric transducers coupled with PowerLab data acquisition system were used. *Result:* The oral administration of the TPPU (2 mg/kg, p.o) to fructose (25%)–fed rats for 12 weeks caused marked protection against hyperglycemia (94.42 ± 4.13 vs. 130 ± 4.13 mg/dl), hypertension (115 ± 7.66 vs. 139.58 ± 9.87 mm of Hg), hyperlipidemia, (Total cholesterol 51.71 ± 4.13 vs 68.16 ± 3.40 mg/dl, low-density lipoprotein 7.16 ± 0.4 vs 9.83 ± 0.4 mg/dl, high density lipoprotein 53.5 ± 2.75 vs 38.5 ± 2.37 mg/dl) and endothelial dysfunction (89 ± 7.50 vs 25.5 ± 4.48 % endothelial dependent relaxation) when compared with only fructose-fed animals. Histology and immunohistochemistry findings on the part of pancreatic tissue preparations of TPPU administered rats showed positive influence on number of islets of Langerhans and number of beta cells compared to only fructose fed rats. In addition, SIRT1 but not Fetuin A protein levels were found revived in treatment groups vs. control, though these sets of experiments are under

progress. Conclusion: This study that TPPU possesses antihyperglycemic, antihypertensive, antihyperlipidemic and endothelial modulatory effects possibly by protective effect on beta cells degeneration. Thus, these preliminary findings provide an evidence to the promising use of TPPU for metabolic syndrome.

Keywords: TPPU, antihyperglycemic, endothelial modulatory

5.10 PATTERNS, CONTROL AND COMPLICATIONS OF DIABETES FROM A HOSPITAL BASED REGISTRY ESTABLISHED IN A LOW INCOME COUNTRY

Jaweed Akhter, Asma Ahmed, Minaz Mawani, Laila Lakhani, Ayaz Kalsekar, Shehla Tabassum, Najmul Islam

Department of Medicine, Aga Khan University, SETMA Diabetes Center, Beaumont, Texas, and UT Houston Internal Medicine, United States

Diabetes registry enables practitioners to measure the characteristics and patterns of diabetes across their patient population. They also provide insight into practice patterns which can be very effective in improving care and preventing complications.

Objective: The aim of this study was to assess the patterns, control levels and complications at the baseline of the patients attending clinic at the large tertiary care hospital in Karachi, Pakistan with the help of the registry. This can be used as a reference to monitor the control and also for a comparison between peer groups.

Methods: This was a cross sectional study with the data obtained from diabetes registry collected with the help of pre-designed questionnaire. HbA1c was used as a central diabetes measure and other related factors and complications were assessed with it.

Results: Only 16.6% of the participants had optimal HbA1c $\leq 7.0\%$. 52.9% of the patients were classified as having poor control defined by HbA1c of $>8\%$. Three fourth of the study population were obese according to Asian specific BMI cutoffs and majority had type 2 diabetes with duration of diabetes ranging from less than one to about 35 years, mean(SD) duration being 7.6 years (7.1). Overall only 4% of the patients were on combine target of HbA1c, LDL and BP. Results of multivariable logistic regression showed that the odds of having optimal glycemic control increased by 3% with every one year increase

in age. In addition, having longer duration of diabetes was associated with 56% lower odds of having good glycemic control. Moreover, having higher triglyceride levels was associated with 1% lower odds of having good glycemic control.

Conclusion: This highlights the large burden of sub optimally controlled people with diabetes in Pakistani population, a low income country with huge diabetes prevalence and ineffective primary health care system creating enormous health and economic burden.

5.11 CUSHING SYNDROME DUE TO ACTH-PRODUCING BRONCHIAL CARCINOID: A RARE ENCOUNTER

Shehla Tabassum, Qamar Masood

Department of Medicine, Aga Khan University

Background: Bronchial carcinoids are an uncommon group of lung neoplasms and about 1-5% of them are associated with ectopic ACTH secretion, which represents 1-10% of Cushing syndrome cases.

Worldwide, around 59 patients have been reported till now. They systematically present as Cushing syndrome. Bronchial symptoms are present in only 8% pts. Surgery is the treatment of choice in the form of lobectomy while sandostatin analogues are used for metastatic or unresectable tumors. Here we report the first case of Cushing Syndrome due to ACTH-producing Bronchial Carcinoid from Pakistan

Case presentation: A 70 years old Pakistani female consulted AKU neurology clinic with the complaint of weight gain and inability to stand (from sitting posture) & walk properly from 7 months. She was diabetic and hypertensive for 3 years. There was also history of on & off bone aches, mild cough and shortness of breath on exertion for 1 year. Examination showed body mass index of 30.2, rounded plethoric face, central obesity, proximal myopathy, purplish striae over abdomen with normal respiratory examination. So she was referred to Endocrine clinic for evaluation of Cushing Syndrome. Her serum Cortisol failed to suppress after overnight dexamethasone suppression test (15 μ g/dl) and 24-hr urinary cortisol turned out to be high (852 μ g/24h). It was followed by the finding of high ACTH level (111pg/ml). High dose dexamethasone suppression test was then carried out to differentiate between pituitary or ectopic source of ACTH which failed to suppress less than 50% of basal level, suggesting an ectopic source. CT chest revealed a 2.5 x 1.6cm mass lesion in left lower bronchus, the bronchoscopic biopsy of

which proved it to be bronchial carcinoid. Consequently her 24-hr urinary 5-hydroxyindole acetic acid level was found to be high (20mg/24h). Pulmonary function tests established severe obstructive impairment. So after a systematic evaluation course, she was diagnosed as a case of Cushing Syndrome due to rare ectopic ACTH-producing bronchial carcinoid. She was referred to thoracic surgeon for lobectomy but keeping in view her old age along with several comorbid and severe pulmonary dysfunction, surgeon and the patient declined the option of surgery. She was then placed on Sandostatin analogue treatment which resulted in moderate amelioration of her symptoms.

Conclusion: Ectopic ACTH production by bronchial carcinoid is a rare presentation of Cushing Syndrome. Therefore, it requires the adoption of systematic evaluation pathway to avoid unnecessary hypophysectomies.

5.12 IMPACT OF RAMADAN FASTING ON THYROID STATUS IN PATIENTS WITH PRIMARY HYPOTHYROIDISM

Aisha Sheikh, Minaz Mawani, Saeed A Mahar
Department of Medicine, Aga Khan University

Objectives: To study the change in TSH level before and after Ramadan in patients with primary hypothyroidism. To study the impact on TSH with regards to the quality of meal & interval between meal and Levo-thyroxine (LT4) intake.

Methods: Prospective cohort study. Included adult patients on stable doses of LT4 who fasted for at least 20 days during the month of Ramadan in the Islamic year 1437 Hijri (June/July 2016). Baseline characteristics and TSH levels were recorded on all consenting patients within 6 weeks prior to Ramadan. Post-Ramadan TSH was tested within 2 to 3 weeks after Eid-ul-Fitr. The quality of meals and interval between LT4 and food during Ramadan was recorded. Means with standard deviation and median with interquartile range was calculated for all quantitative variables including TSH levels.

Results: During the study period a total of 64 patients with hypothyroidism were enrolled. 58 females and 8 males aged between 22 and 70 years with mean age of 44.2 ± 13.2 years. Majority of patients had no known etiology of hypothyroidism (73.4%), followed by autoimmune (9.4%), post-surgical (7.8%), Post radioactive iodine (7.8%) and congenital (1.6%). During Ramadan, only 10 participants reported minor

illnesses. Average daily dose of LT4 was 95.3 ± 35.4 mcg and on an average patients were on LT4 since 8.3 years. On an average; patients fasted for 26.5 days and missed dose of LT4 on 1.27 days. About 75% of the participants were able to keep the interval between meals and LT4 for at least 2 hrs post-meal and 30 minutes pre-meals. Mean TSH pre-ramadan was 2.37 and post-Ramadan it was 4.69 mIU/L. Mean difference between TSH; pre and Post-ramadan was 2.32 ± 3.80 mIU/L ($p < 0.001$). However, difference in TSH was not significantly different between those who were compliant with meal and levothyroxine interval versus those who were not (compliant = 2.04, non-compliant = 3.15, $p = 0.30$).

Discussion: Studies related to LT4 replacement during Islamic fasting are sparse. Karoli et al. studied the impact of bedtime LT4 supplementation on serum TSH levels during Ramadan in 47 patients, and found that 29 (62%) had changes ≥ 2 mu/l of serum TSH by the end of Ramadan. We left the choice of timing of LT4 intake to the patient's discretion. Although, statistically significant change in TSH was observed post-Ramadan, this change remains clinically insignificant and does not imply a need for LT4 dose increment during Ramadan.

Conclusion: Changes in TSH concentrations during Islamic fasting are minimal and is not affected by timing of LT4 intake and interval from meal.

Keywords: Hypothyroidism, Ramadan

5.13 UNEXPLAINED HOARSENESS OF VOICE AFTER RADIOACTIVE IODINE THERAPY; A RARE COMPLICATION

Tauseef Ahmad, Imran Ulhaq, Najmul Islam
Department of Medicine, Aga Khan University

Background: Graves' disease is a common thyroid disorder. It is treated with radioactive iodine, antithyroid drugs or surgery. Radioactive iodine is safe and the few side effects reported include exacerbation of graves ophthalmopathy. It is not associated with any increased risk of malignancy or infertility. Hoarseness of voice is extremely rare after RAI.

Case Report: This is a case of 29 year old lady who was diagnosed to have thyrotoxicosis 3 months post-partum. As she was lactating, thyroid scan was not done and initial diagnosis of post-partum thyroiditis was made. As her symptoms continued for a longer period with no improvement, she was treated as a case of Graves' disease. She went into remission and her

neomercazole was stopped after about 1 year. Again after about 2 years she developed same symptoms of thyrotoxicosis and was reviewed by an endocrinologist. This time Tc⁹⁹ scan was consistent with the diagnosis of Graves' disease. This time she was given radioactive iodine. After receiving 15mCi of RAI she developed severe neck pain and hoarseness of voice on the next day. Initially treated with nonsteroidal anti-inflammatory drugs, her pain and sore throat resolved but hoarseness of voice continued. For these symptoms she underwent direct laryngoscopy twice that showed no vocal cord palsy. She later on developed hypothyroidism and was treated with thyroxine. With the passage of time her voice started to improve without any intervention and by 6 months her symptoms resolved.

Conclusion: The hoarseness of voice after radioactive iodine therapy is a rare but well reported side effect and should be known to the patients and physicians alike so that unnecessary investigations could be avoided.

5.14 MICROALBUMINURIA IN TYPE 2 DIABETES MELLITUS; THE TIP OF ICEBERG OF DIABETIC COMPLICATIONS

Tauseef Ahmad, Imran ulhaq, Minaz Mawani, Najmul Islam

Department of Medicine, Aga Khan University

Objective: To determine the prevalence of microalbuminuria and its association with hypertension and other diabetic complications among type 2 diabetic patients attending at Aga Khan University Hospital Karachi.

Patients and Methods: 1280 type 2 diabetes patients who visited the outpatient department of Aga Khan University Hospital from September 2014 to August 2016 were enrolled for the study. Microalbuminuria was diagnosed if spot urinary microalbumin excretion was more than 20mg/l. Hypertension was diagnosed if BP >140/90 or already on antihypertensive medications. Other demographic, clinical and laboratory data were also recorded.

Results: Microalbuminuria was diagnosed in 404(31.56%) patients and among these albuminuric patients 335(82.9%) had hypertension. They were also dyslipidemic, having raised triglyceride levels, lower HDL levels, with more prevalence of background diabetic retinopathy and peripheral neuropathy. They also showed higher HbA1C levels and longer duration of diabetes.

Conclusion: The prevalence of the microalbuminuria in our patients with type 2 diabetes is 31.56% and is

not only an early sign of diabetic nephropathy but also a host of other diabetic complications and should be dealt early with strict control of their hyperglycemia and hypertension to help prevent the future complications.

Keywords: Type 2 diabetes, Microalbuminuria, Hypertension, Complications.

5.15 CLINICAL OUTCOME IN PRIMARY HYPERPARATHYROIDISM: A SINGLE CENTER EXPERIENCE IN PAKISTAN

Shehla Tabassum, Ehsun Naeem, Najmul Islam
Department of Medicine, Aga Khan University

Background: Primary hyperparathyroidism (PHPT) is characterized by abnormal regulation of PTH secretion by calcium. The most common clinical presentation of PHPT is asymptomatic (80% cases). The diagnosis of PHPT is usually first suspected because of the finding of an elevated serum calcium concentration along with a rise in Parathyroid hormone (PTH) level. Parathyroid adenoma resection is the only definitive treatment to cure the disease.

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

Methods: It was a Descriptive cohort study. Total 55 patients with biochemical and radiological diagnosis of PHPT were included in study between January, 2006 to December, 2015. Patients' medical record files were reviewed & data recorded.

Results: Of the 55 subjects, with mean age of 39.68 ±14.35 years, 44 (80%) were females while 11 (20%) were males. The patients presented at a mean duration of 1.20 ± 3.12 years after onset of symptoms. The most frequent complaint was joint & bone pains noted by 49 (89.1%) pts. SestaMIBI scan proved the culprit lesion to be on the right side of neck in 24 (43.6%) pts, left side in 22 (40%) pts and bilateral in 7 (12.8%) pts. Overall, 40 (72.7%) patients underwent surgical resection of parathyroid adenoma, out of which 33 (82.5%) achieved remission while the rest had to undergo repeat surgery to achieve remission. Fifteen (27.3%) patients refused to opt surgical option, thus not achieving remission. Alendronate was the most commonly adopted medical treatment.

Conclusion: PHPT most commonly presents with skeletal manifestations (80.1%) in our area. Surgical adenoma resection is followed by the documentation

of remission in 82.5% pts. With the continuously improving surgical skills, we expect that the figures attaining remission after primary surgical resection will rise in the decades to come.

Keywords: Primary hyperparathyroidism, Characteristics, Management Outcome

5.16 MATERNAL AND NEONATAL OUTCOMES OF PREGNANCIES AFFECTED BY HYPOTHYROIDISM

Zareen Kiran¹, Aisha Sheikh¹, Sarwar Malik², Areeba Mairaj³, Maha Masood⁴, Safana Ismail³, Owais Rashid¹, Luman Sheikh⁵, Najmul Islam¹

Department of Medicine, Aga Khan University,
²Department of Endocrinology, Ali Medical Center, Islamabad

³Final year MBBS students, Dow Medical College, Dow University of Health Sciences, Karachi

⁴Final year MBBS student, Karachi Medical & Dental College, Karachi, ⁵Department of Obstetrics & Gynecology, Aga Khan University, Karachi

Objectives: To determine and report maternal and neonatal outcomes in patients with overt and subclinical hypothyroidism during pregnancy.

Methods: We conducted a cross-sectional retrospective study on 572 patients in the Aga Khan University Hospital after ethical approval. Data was collected on pregnant females who were a known case of hypothyroidism or were diagnosed during their antenatal visits during the year 2010-2015. We noted the etiology of hypothyroidism as well as other comorbidities. Maternal outcomes were recorded as abortion, pregnancy induced hypertension, pre-eclampsia, postpartum hemorrhage and placental abruption. Neonatal outcomes were noted as premature birth, low birth weight, intrauterine death, neonatal respiratory distress syndrome, sepsis, hyperbilirubinemia, hypocalcemia and need for intensive care admission. Data analysis was performed on Statistical Package for the Social Sciences version 19.0.

Results: During the 5 years duration, our eligible cases had 86% live births and 9 % abortions. Pregnancy induced hypertension occurred in 11%, pre-eclampsia in 4% and postpartum hemorrhage in 36%. Out of the live births, 15% were premature and 18% had low birth weight. Thirty two percent of neonates had issues of hyperbilirubinemia among whom 11.4% required phototherapy. Ten percent required admission of more than 24 hours in intensive care unit.

Conclusion: Successful live births in our patients were complicated by neonatal hyperbilirubinemia and maternal postpartum hemorrhage. We report the maternal and neonatal outcomes of hypothyroid pregnancies for the first time from the region of Pakistan.

Keywords: hypothyroidism, pregnancy, maternal, neonatal, outcomes

5.17 EFFECTS OF VARIOUS PHARMACOLOGIC TREATMENTS ON MATERNAL AND NEONATAL OUTCOMES IN GESTATIONAL DIABETES MELLITUS

A. Sheikh, S. Fatima, M. Ahmed, M. Hasan, L. Sheikh, S. Awan.

Departments of Medicine & Obstetrics and Gynaecology, Aga Khan University, Karachi, Dow University of Health Sciences, Karachi Medical and dental College, Karachi, Pakistan,

Background: Gestational Diabetes Mellitus (GDM) is associated with adverse maternal and neonatal outcomes. When pharmacological treatment is needed; Insulin is the gold standard for treating GDM. However in recent years; an interest to use oral antihyperglycemic agents is emerging and evidence of efficacy and safety is accumulating.

Objective: To compare the maternal and neonatal outcomes in oral hypoglycemic agents vs insulin treated GDM patients and to compare efficacy of Oral Hypoglycemic Agents with Insulin in the treatment of GDM.

Method: This is a Retrospective Cohort Study from January 2005 to December 2015 conducted jointly by the Departments of Medicine and OB/GYN at The Aga Khan University Hospital.

Results: 1754 women with GDM fulfilled the inclusion criteria. Mean maternal age was 30±5.01 years and their body mass index was 28.37±13.21 kg/m². 57.6% (n=1011) of women received only medical nutrition therapy and exercise intervention to control their GDM out of which 94.4% (n=863) remained in excellent glycemic control. 10.9% (n=191) women were treated with insulin treatment while 28.1% (n=492) received metformin treatment. Small subset of women needed insulin added on to metformin if the later was unable to achieve control {2.3%(n=41)} while very few women who were on insulin treatment needed addition of metformin to insulin to achieve control {1.1%(n=19)}. 80.5% (n=364) women treated with metformin alone achieved excellent glycemic control;

while an excellent glycemic control was achieved in 15.3% (n=28) women treated with insulin alone ($p<0.001$). In contrast; 17.7% women treated with metformin alone and 80.3% women treated with insulin alone achieved moderate glycemic control. Women with 0-hour OGTT value of >110 mg/dl and/or 2-hour OGTT value of >200 mg/dl were more likely to be on insulin treatment than metformin treatment {31.4% vs 8.1% for 0-hour OGTT value >110 mg/dl ($p<0.001$) and 23% vs 6.7% for 2-hour OGTT value >200 mg/dl ($p<0.001$)}.

Discussion: In our retrospective study, 42.4% women with GDM required pharmacological treatment. Our study has compared use of metformin with insulin in routine clinical setting and hence will further enhance the confidence of clinicians in using metformin in women with GDM

Gastrointestinal and Liver

6.1 SIMULTANEOUS SUBTOTAL GASTRECTOMY AND RIGHT COLECTOMY FOR SYNCHRONOUS GASTRIC AND COLON CANCER IN THE UNITED STATES: A CASE REPORT

*Raul Mederos, Jose R. Lamas, Anika Ramos, Syeda
Ayesha Farooq
Medical College, Aga Khan University*

Introduction Synchronous gastric and colon cancer although reported from East Asia (China, Japan, Korea) remains rare in other parts of the world. We report a case of concurrent primary gastric and colonic malignancy from the United States.

Presentation of Case: We present the case of a 50-year-old lady who presented to the Hialeah Hospital with an 8-month history of generalized abdominal pain and upon investigation was found to have dual gastric and colon malignancy. **Discussion** While the incidence of gastric cancer has dropped drastically in the United States, colon cancer remains the third most frequent cancer in both men and women. It is estimated that 10% of cancer patients are affected by multiple malignancies and a high degree of clinical suspicion along with appropriate diagnostic procedures are required to make a diagnosis.

Conclusion We discuss the diagnosis and treatment of a patient with synchronous gastric and colon cancer.

Keywords: synchronous, gastric cancer, colon cancer

6.2 ECTOPIC ENTEROBIUS VERMICULARIS INFESTATION, AN EXTREMELY RARE CAUSE OF MESENTERIC LYMPHADENOPATHY MIMICKING TUBERCULOUS LYMPHADENITIS

*Summaya Zafar, Muhammad Usman Tariq, Zubair
Ahmed
Department of Pathology and Laboratory Medicine,
Aga Khan University*

Background: Enterobius Vermicularis (EV) is a pinworm which commonly resides in the lumen of the intestinal tract and lays eggs on the perianal skin. However, rarely the worm can infest various other sites in the body and cases with infestation of such ectopic sites have been reported in literature. Rare cases of mesenteric lymph node involvement have also been reported.

Case Presentation: We report a case in a young male who presented with signs and symptoms of acute appendicitis. During surgery, enlarged mesenteric

lymph nodes were identified. Histological examination revealed adult worm in the appendiceal lumen.

Histological examination of mesenteric lymph node revealed degenerated worm surrounded by caseating chronic granulomatous inflammation.

Conclusion: We conclude that EV infestation should be considered in the differential diagnosis of enlarged mesenteric lymph node with chronic granulomatous inflammation, especially in young patients and when accompanying bowel tissue also reveal the helminth.

Keywords: Enterobius Vermicularis, Mesenteric Lymphadenopathy, Appendicitis

6.3 EVALUATION OF FIRST LINE AGENTS' RESISTANCE AMONGST CAMPYLOBACTER ISOLATES USING MIC BREAKPOINTS AT AGA KHAN UNIVERSITY CLINICAL LABORATORY

*Irim Iftikhar, Dr Seema Irfan
Department of Pathology and Laboratory Medicine,
Aga Khan University*

Objective Campylobacter is one of the most common causes of gastroenteritis especially in Pakistan, with an increasing drug resistance. Usually erythromycin and ciprofloxacin are considered the first line agents however, over a period of time, resistance against these antimicrobials has been observed in various regions of the world. Growing erythromycin resistance is of concern since these strains mostly turn out to be multidrug resistant and there are very few options available to fight against them. The aim of the study is to evaluate frequency of erythromycin and ciprofloxacin resistance in Campylobacter species.

Material and methods A total of 107 isolates were isolated from stool as well as blood samples from Jan 2014 to March 2016 and identified by conventional tests. Minimum inhibitory concentration (MIC) of erythromycin and ciprofloxacin was performed by using agar dilution method on 5% defibrinated sheep blood MuellerHinton agar plates as per CLSI recommendation. C. jejuni ATCC® 33560 is used as control for agar dilution testing.

Results A total of 107 isolates were collected over the period of 2014 to 2016. Out of 107, 14.02% of the isolates were from blood samples while 85.98% were collected from stool. Seventy seven (77%) were C. jejuni while the rest were labeled as Campylobacter spp. Erythromycin resistance was 14%, ciprofloxacin resistance 93%. Of the 15 erythromycin strains, 11 were C. jejuni while 4 were Campylobacter spp. All 15

erythromycin resistant isolates were 100% resistance to ciprofloxacin.

Conclusion There has been significant rise in resistance to first line agents in Campylobacter resulting in difficulty in identifying the better treatment option for Campylobacter and demanding the newer treatment options

Keywords: Campylobacter species, erythromycin, ciprofloxacin resistance

6.4 GASTROINTESTINAL COMPLICATIONS IN CRITICALLY ILL CHILDREN: A PROSPECTIVE OBSERVATIONAL STUDY

Sidra Ishaque, Anwar ul Haque, Mariam Shakir, Asim Azim, Khalid Saleem, Humaira Jurair, Qalab Abbas
Department of Paediatrics and Child Health, Aga Khan University

Objective: To describe the frequency of gastrointestinal complications (GIC) and its association with outcome in critically ill children
Design: A prospective, observational cohort study
Setting: A closed multidisciplinary Pediatric intensive care unit (PICU) of an academic hospital of a developing country
Subjects: All children (aged 1 month to 16 years) admitted in Pediatric Intensive Care Unit PICU during the study period. Patients admitted with GIC or after laparotomy and stayed less than 24 hours were excluded. Intervention: None
Measurements & Main Results: The frequency of the defined GIC: vomiting, high gastric residue volume (GRV), diarrhea, constipation, gastrointestinal bleed, intra-abdominal hypertension were recorded on daily basis for first week of PICU stay. Of total 190 patients, 78 (41%) patients had one or more GIC. GIC in our cohort were high GRV in 37/190 patients (19.4%), constipation in 31/190 patients (16.3%), vomiting in 18/190 patients (9.4%), abdominal distension in 13/190 (6.8%), diarrhea in 12/190 (6.3%), gastrointestinal bleed in 9/190 (4.7%) and intra-abdominal hypertension in 4/190 (2.1%) patients. The children receiving mechanical ventilation (88%) and those with multiorgan dysfunction syndrome (MODS) (47%) were more likely to develop GIC (p

Keywords: GI, Complications, critically ill

6.6 PERCUTANEOUS MANAGEMENT OF BENIGN BILIARY ENTERIC ANASTOMOTIC STRICTURES AFTER IATROGENIC BILE DUCT INJURIES

Raza Sayani, Mustafa Belal Hafeez Chaudhry, Nauman AlQamari, Rana Shoaib Hamid, Muhammad Azeemuddin
Department of Clinical Imaging, Aga Khan University

Objective: To assess the technical success, complications and reintervention rate of percutaneous transhepatic balloon dilatation (PTBD) of biliary enteric anastomotic strictures (BES).

Material & Method: A retrospective review of patients who underwent PTBD for benign resistant BES, were previously treated for iatrogenic bile duct injuries, from December 2004 to January 2016 was performed. Diagnostic transhepatic cholangiogram was performed to assess level of obstruction. Strictures were dilated using 8-12 mm diameter balloons followed by placement of 8-10 Fr internal-external drainage catheters, which're removed after 3-5 days post-PTBD cholangiogram. Follow up by clinical assessment, liver function tests and ultrasound was done. Fischer exact test was used to determine if there was a significant association between PTBD sessions and recurrent strictures.

Results: In total, 37 patients underwent PTBD including 10(27%) males and 27(73%) females. Mean age was 41.3 yrs.(range 23-70 yrs.). Out of these, 29 (78.4%) were treated with choledochojejunostomy & 8(21.6%) with hepaticojejunostomy. 100% success was achieved in all the PTBD sessions. 19(51.3%) patients were treated with a single PTBD session. Mean follow-up time was 36 months (Range 1-75 months). 2(5.4%) patients were lost to follow up after first session of PTBD. 18(48.7%) patients needed reintervention, out of these, 11(29.7%) were symptom free after second session on 3 year follow up, 3(8.1%) were symptom free after the third session of PTBD. No significant difference in risk of recurrent strictures after 1st & 2nd PTBD sessions [18(48.7%) vs. 7(39%);

Conclusion: PTBD is a safe and useful treatment option for BES for long-term symptoms free time-period.

There is risk of recurrent BES within 3 years of PTBD sessions with no significant difference in developing recurrent BES after PTBD sessions.

Few patients with resistant strictures might require stent placement

Keywords: biliary enteric anastomotic strictures, percutaneous transhepatic balloon dilatation (PTBD), cholangiogram

6.7

PREVALENCE OF GASTROESOPHAGEAL REFLUX DISEASE AND ASSOCIATED RISK BEHAVIOR IN GENERAL POPULATION OF KARACHI; A CROSS SECTIONAL SURVEY.

Zainab Hasan, Rehmat Tufail, Ali Ahmed, Hasan Khan, Ameer Shah, Umar Farooque, Humayun Hasan, Aneel Kumar
Jinnah Medical & Dental College

Objective: Hospital based studies show 22-24% prevalence of Gastro Esophageal Reflux Disease (GERD) in Pakistani population. This study was conducted to screen sample of general population in Karachi for GERD and frequency of associated dietary & lifestyle risk factors. **Method:** A cross sectional survey was conducted from August to November 2016. Generally healthy adults with no known gastrointestinal disease were included using non-random convenience sampling. Likelihood of GERD was identified using GerdQ which is a 6 –item patient centered, symptom based diagnosis and management tool validated for use in general practice without specialist referral and endoscopy. A separate closed ended structured questionnaire was developed to determine frequency of six dietary components and four lifestyle habits that have been found to increase risk for development of GERD. Statistical analysis was done using SPSS version 21. Chi square test was used to test for significant associations at 95% confidence level. **Results:** Total sample size was n= 300 participants, 64% (n=192) males and 36% (n=108) females, median age 26 years. Using GerdQ, 34.7% (n=104) were found to have high likelihood of GERD including 77.9% (n=81) males and 22.1% (n=23) females. Frequency of regular consumption of tea was 59.7%, white flour 41%, spicy food 32%, carbonated drinks 27%, eating till full 41.7%, feeling stress 33.7%, smoking 32% and sleeping right after meal 24.3% in total participants. Among GERD positive individuals, regular consumption of tea was 68.3%, white flour 45.2 %, carbonated beverages 38.5%, spicy food 37.5%, eating till full 45.2%, smoking 41.3%, feeling stress 37.5% and sleeping right after main meal was 31.7%. Of these consumption of tea and carbonated beverages were significantly associated with symptoms ($p < 0.05$) in both genders while sleeping right after meal and smoking were found highly significant ($p < 0.05$) especially in males.

Conclusion: The frequency of risk factors for development of GERD is high among the general adult population of Karachi and is positively associated with prevalence of GERD symptoms. GERD-Q is a simple tool to identify and manage patients in general practice. We recommend a validation study for its use in Pakistani populations to facilitate early diagnosis, avoid unnecessary health expenses and improve patient quality of life.

Keywords: GERD, GerdQ, risk factors

6.9

NECK CIRCUMFERENCE: A SUPPLEMENTAL TOOL FOR THE DIAGNOSIS OF METABOLIC SYNDROME

Mozaffer Rahim Hingorjo, Sitwat Zehra, Erum Imran, Masood Anwer Qureshi
Department of Biological and Biomedical Sciences, Jinnah Medical & Dental College, AQK Institute of Biotechnology and Genetic Engineering

Objective: To explore the usefulness of neck circumference as a supplemental tool for diagnosing metabolic syndrome while identifying its cut-off values. **Methods:** This case-control study was conducted at Dr. Essa's Laboratory and Diagnostic Centre, Karachi, from December 2014 to April 2015, and comprised subjects with and without metabolic syndrome aged between 35 and 65 years regardless of their diabetic status. Evaluation was done for metabolic syndrome by measuring anthropometric, clinical and biochemical parameters according to the criteria proposed by the International Diabetes Federation. Variables in both cases and controls were correlated with neck circumference and its cut-off values were determined for diagnosing metabolic syndrome. SPSS 20 was used for statistical analysis. **Results:** Of the 215 subjects enrolled, 164(76.28%) were selected. Of them, 83(50.61%) were cases and 81(49.39%) were controls. Moreover, 90(55%) of them were men and 74(45%) were women. The overall mean age was 51.15 ± 10.36 years (range: 35 to 65 years). The mean neck circumference was 36.13 ± 2.14 cm and 31.59 ± 1.18 cm in normal-weight men and women, respectively, compared with 40.0 ± 2.13 cm and 35.75 ± 2.74 cm among obese men and women. The neck circumference correlated best with waist circumference in men ($p=0.001$) and with body surface area in women ($p=0.001$). The area under the curve of neck circumference for metabolic syndrome was 0.760 for men ($p38$ cm for men and >34 cm for women). The odds ratio for metabolic syndrome was 12.44 (95%

confidence interval: 4.13-37.41) among male cases and controls compared to 3.34 (1.26-8.80) among women.
Conclusion: Neck circumference strongly correlated with adiposity indices and had a definite cut-off point. It can therefore be used as a useful adjunct for clinical screening of metabolic syndrome.

Keywords: neck circumference, metabolic syndrome, Obesity

6.10 TRANSVERSE COLON LIPOMA: CASE REPORT

Syeda Maheen Batool, Khawaja Mohammad Inam Pal Medical College and Department of Surgery, Aga Khan University

Transverse Colon Lipoma: Case Report Syeda Maheen Batool¹, Muhammad Inam Pal² Gastrointestinal lipomas are benign, non-epithelial mesenchymal fatty tumors. This pathology can be seen anywhere in the GI tract the most common location being the colon. It represents the second most common benign disease of colon after adenomatous polyps. The incidence reported in literature ranges from (0.2-4.4) %. Patient can present with a variable clinical presentation. So far, no specific guidelines have been proposed to treat this condition. The intervention is based on the signs and symptoms of the patient as well as radiological findings. We discuss a case having a non-classical presentation. It will not only provide an additional example of this pathology but will give the readers an opportunity to understand the diagnostic and therapeutic modalities employed in the decision making process. A middle aged male on evaluation of bleeding per rectum was found on colonoscopy to have a large mass in the transverse colon with normal overlying mucosa. Colonoscopic biopsies were reported as colonic mucosa. An abdominal CT scan demonstrated this to be a well circumscribed mass in the transverse colon. No other pathology was identified. Due to its radiological features a lipoma of the colon was one of the differential diagnoses. In view of the size of the lesion a surgical resection was planned. The patient underwent an uneventful segmental colectomy with primary anastomosis. Histopathology confirmed the mass to be lipoma.

Keywords: Colon lipoma, diagnosis, treatment

6.11 ENHANCING THE COLORECTAL SCREENING KNOWLEDGE AMONG HEALTHCARE PROVIDERS

Farzana Aftab Khawaja, Sadaf Naveed, Rozina Khimani, Saima Allauddin, Huma Naz Department of Medicine, Aga Khan University, Karachi

Background: Colon cancer is the most leading cause of death in both genders. Its screening can protect lives by prevention and early detection. Therefore, it's important for all health care professionals to uplift their knowledge for the screening. In this study we have compared distinct variables including age, gender, occupation, work experience, knowledge and causative barriers in screening.

The purpose of this study is to raise knowledge, perception & attitude among health care workers & identify major impediments of screening.

Method: A Questionnaire based survey was conducted for medical professionals to explore different variables and their correlation, through causes & affect analysis along with pareto-analysis.

Result: As a result, we derived that out of n=50, there was n=30 age <40 years (60%), n=17 between 40-50 years (34%) and n=3 age > 50 years (6%), among them n=31 (62%) were male and n=19 (38%) female. We catered different occupational categories, n=14(48%) doctors, n=23(46%) nurses, n=6(12%) health care assistants and n=14 (7%) technicians. However the study evaluated that the major factor resisting in colorectal screening is poor knowledge despite of the work experience. If we compare the results, n=11 (22%) possess adequate knowledge whereas n=39(78%) had knowledge deficit. In contrast, professionals with deficit knowledge face screening barriers due to fear of procedure n=26(52%), privacy n=13(26%). Compared with those who had adequate knowledge, have financial limitations n=8 (16%) and adverse effects n=3(6%).

Conclusion: To conclude, the colorectal cancer screening plays a very vital role in prevention and control of disease. Therefore, knowledge is the key factor for understanding the true importance of screening. This cancer mostly appears asymptomatic but can reveal to fatal conditions. To enhance education among health care professionals, the awareness sessions were conducted to limit hurdles and improve efficiency in delivering awareness to the population.

Keywords: Colorectal Screening, Knowledge, Barriers, Fear and Privacy

6.12 FREQUENCY OF FOOD HYPERSENSITIVITY IN PATIENTS WITH FUNCTIONAL GASTROINTESTINAL DISORDERS (FGID)

Faisal Ismail, Shahab Abid, Safia Awan, Farheen Lubna
Department of Medicine, Aga Khan University, Karachi

Background: Food hypersensitivity (FH), irritable bowel syndrome (IBS) and functional dyspepsia (FD) have many overlapping symptoms, including abdominal discomfort, bloating and altered bowel habits. However, symptoms of food hypersensitivity are reduced when patients are placed on diets that specifically omit certain foods, which does not happen in IBS/FD. We aimed to determine the frequency of FH in patients with FGID.

Methods: Adult patients diagnosed with IBS and/or FD as per the Rome III criteria were recruited. Patients underwent serological testing against 6 food allergens: beef, shrimp, egg white, milk, peanut, and soy-bean. Those testing positive were subjected to a food elimination diet for 4 weeks. Those showing improvement on elimination diet were subjected to re-challenge. Changes in symptoms were documented at all stages by the Global overall improvement scale (GOS) and Gastrointestinal symptom rating scale (GSRS).

Results: Two hundred patients with FGID were screened. The average age of the patients was 38.6, and 55 % were male. Nineteen (38%) patients tested positive, and were subjected to a food elimination diet. The most common food hypersensitivity was shrimp (17/89%), followed by 4/21% for egg-white, and 2 (10%) each for peanut and soya bean. Of these, 8 showed improvement. They were re-challenged, and were evaluated 2 weeks later, when all suffered symptom relapse. These 8 (4%) patients were diagnosed with FH.

There was a statistically significant difference in both GSRS (total and component) and GOS scores at baseline between patients testing (+) and (-) on food allergen testing, mainly for diarrhea ($p=0.001$), abdominal pain ($p=0.001$) and indigestion ($p<0.001$)

Conclusions: FH is present in 4 % of patients with a functional gastrointestinal disorder. Exclusion of a FH is helpful in a subset of patients with a compatible clinical history, and intractable symptoms.

6.13 HISTOACRYL[®] THERAPY OF BLEEDING GASTRIC FUNDAL VARICES; THE EXPERIENCE OF TERTIARY CARE HOSPITALS

Nazish Butt¹, Farhan Haleem¹, Sehrish Butt², Sehrish Reema¹, Muhammad Ali Khan¹, Amanullah Abbasi³
¹Jinnah Postgraduate Medical Centre, Karachi. Pakistan, ²Aga Khan University, Karachi, ³Dow University of Health Sciences

Background: Gastric variceal bleeding is not only life threatening, also contributes to high rates of morbidity. **Aims:** To evaluate the efficacy and safety of endoscopic injection of N-butyl-2-cyanoacrylate (NBCA) for treatment of bleeding gastric varices (GV).

Methods: Analysis of prospectively collected data of a cohort of patients with GV who underwent endoscopy for the treatment of bleeding GV from April 2013 to December 2016. Patients with gastric variceal bleeding underwent endoscopic treatment with a mixture of NBCA and Lipiodol. The success of GV eradication was assessed by repeat endoscopy after 3 weeks of intervention. Successful hemostasis, rebleeding rate and complications were observed.

Results: The cohort consisted of 84 consecutive patients that had undergone NBCA injection for GV. The mean age was 51.75 ± 11.23 years. The most common cause for GV was hepatitis C related liver cirrhosis (71.8%). Child-Pugh score at presentation for was mostly B (74.1%) and median MELD score at admission was 10. A median mixture volume of 4.5 mL, in 1 to 2 injections, was used, with immediate hemostasis rate of 100 % and early rebleeding rate 7.1%. The mean number of sessions were 1.47 ± 0.72 . Mortality rate was 2.4%. No immediate or long-term complications of NBCA injection occurred in any of these cases during the time of follow-up

Conclusions: NBCA injection of GV is a safe and successful therapeutic intervention. Patients with early rebleeding was at higher risk of death. A minimum of 2 endoscopic sessions is required to significantly decrease the risk of rebleeding.

Keywords: Gastric varices; N-butyl-2-Cyanoacrylate; Hemostasis; Treatment outcome

6.14 EPIDEMIOLOGICAL, CLINICAL CHARACTERISTICS AND MANAGEMENT STATUS OF HEPATITIS B: A CROSS-SECTIONAL STUDY IN TERTIARY CARE HOSPITAL

Nazish Butt^{1, 2}, Muhammad Ali Khan¹, Sehrish Butt²,
Sehrish Reema¹, Farhan Haleem¹
¹Jinnah Postgraduate Medical Centre, Karachi.
Pakistan, ²Aga Khan University Hospital, Karachi

Background: Hepatitis B virus (HBV) infection is serious health problem in Pakistan. In view of the serious socioeconomic consequences of HBV infection, identifying patient characteristics and current treatment practice for this disease will enhance regulation of their medical management.

Aims: To describe the epidemiology, clinical characteristics and current management status of patients infected by HBV.

Methods: We undertook an observational, cross-sectional, epidemiological study at the Jinnah Postgraduate Medical Centre, Karachi during the period of January 2014 to February 2017. Male or female patients of any age and had documented hepatitis B were eligible for inclusion in the study. HBV infection was defined as a positive hepatitis B surface antigen test.

Results: A total 354 patients were analyzed. Mean age of presentation was 31.02±13.9

Years. The majority of the patients 96 (27.1%) were ethnically Sindhi followed by Balochi 81 (22.9%), indicating a high prevalence among the rural based population of Pakistan. The mean duration of the disease was 4.24±4.95 years. The most common cause for spread has been positive family history 147 (41.5%) and Road side barbers 116 (32.8%). Most of the patients were Child-Pugh (CP) class A 290 (81.9%) and the median Modified End Stage Liver Disease (MELD) score was 8. Upper gastrointestinal bleeding was the most frequent hepatic complication 31 (8.8%). Antiviral medications had been received by 85 (24%) of patients previously, The major antiviral medication prescribed to treatment experienced patients was Pegylated interferon 27(7.6%).

Conclusions: This observational, real-life study has identified some gaps between clinical practice and guideline recommendations in Pakistan. To achieve better health outcomes, several improvements, such as disease monitoring and optimizing antiviral regimens should be made to improve disease management.

Keywords: Hepatitis B; Epidemiology; Clinical characteristics; Treatment

6.16 A RARE CAUSE OF RECURRENT CONSTIPATION WITH ABDOMINAL PAIN AND DISTENSION

Shahab Abid, Dawar Khan
Department of Medicine, Aga Khan University,
Karachi

A 38 years old man presented with one day history of constipation with abdominal distension and central abdominal pain. He had similar episodes in past as well. He has no history of weight loss, vomiting or bleeding per rectum. There was no significant past history, but history of investigation for infertility. Physical examination showed mild diffusely tender distended abdomen. There was no clinically demonstrable visceromegaly. His other systemic examination was unremarkable and complete blood count, blood biochemistry, thyroid profile were within normal limits. A CT abdomen showed unusual findings.

Viscero-atrial heterotaxy-situs ambiguous with polysplenia syndrome

CT post contrast axial image (Figure A) showing polysplenia, interrupted IVC and dilated hemiazygous vein, dilated hemiazygous vein joining distal IVC and renal hilum level.

There is no single set of abnormalities that fulfill the criteria of polysplenia syndrome or situs ambiguous. It is a complex and controversial entity without fixed pathognomic features. There is abnormal arrangement of viscera and blood vessels quite contrast to orderly arrangement of situs inversus. Interrupted IVC, dilated tortuous azygos vein, small intestine non-rotation, along with multiple spleens (2-8 in number) are quite frequently seen in this syndrome. Annular pancreas, portal vein abnormalities, right sided stomach and centrally placed liver are also reported with this syndrome. Some other variant of this syndrome are associated cardiopulmonary abnormalities and also congenital heart diseases. Human studies have identified several gene mutation notably CFC 1, SHROOM3 in patients with heterotaxy syndrome. This is not a premalignant condition however association with hepatocellular and rectal carcinoma has been reported.

6.17

SERUM LIPID PROFILE: DOES IT CORRELATE WITH THE SEVERITY OF DECOMPENSATED CIRRHOSIS?

Huda Naim¹, Fahad Ali Shaikh², Roshane-E-Shahid Rana³, Madiha Mahmood Ali¹, Bader Faiyaz Zuberi¹

¹Department of Medicine, Civil Hospital Karachi, Pakistan, ²Section of Gastroenterology, Department of Medicine, ³Department of Surgery, Aga Khan University, Karachi

Objective: To find out the association between severity of liver disease and serum lipid profile in patients with decompensated cirrhosis.

Method: Analytical Cross Sectional Study was conducted in Medical Units of Civil Hospital Karachi. Patients with decompensated cirrhosis were enrolled through purposeful sampling method, patients with comorbidities were excluded. Severity assessment of liver damage was assessed via Model of End Stage Liver Disease (MELD) and Child Pugh scoring system. Statistical analysis was conducted on SPSS 17.0. Associations were tested using the Chi square test. Statistical analysis of MELD group and Child Pugh with lipid profile was performed using One Way Analysis of Variance (ANOVA). p value of less than 0.05 will be considered statistically significant.

Results: 124 Cirrhotic patients met the inclusion criteria with 64.5% (80) males and 35.5% (44) females. Mean age 47.49 ±12.6 and 52.5±11.3 respectively. 49.2 % patients were admitted to the hospital with Upper GI bleed as the chief complain. The most common etiology was chronic Hepatitis C (54.5%). 109 patients (87.9%) presented with Child-Pugh class A, 15 (12.1%) class B. 25 (20.2%) patients belonged to MELD class I, 40 (32.3) belonged to class II, 24 (19.4) and 15 (12.1) belonged to III and IV respectively. Mean serum Cholesterol, HDL and LDL were 93.7 ± 47.5, 19±14.4 and 64.19±45.2 respectively.

Serum Cholesterol (total, serum HDL and LDL had no significant association with Child -Pugh Class and MELD score(p>0.05). This suggests that there is no association with the severity of liver dysfunction and the serum lipid profile.

Conclusion: Hypocholesterolemia, Low HDL Cholesterol (Hypoalphalipoproteinemia) and low LDL levels are a common finding in decompensated chronic liver disease but there is no significant association with Child-Pugh class and MELD score.

Keywords: Cirrhosis; Lipid profile; MELD score

6.18

GASTRIC LYMPHOMA: ASSOCIATION WITH *HELICOBACTER PYLORI* OUTER MEMBRANE PROTEIN Q (HOPQ) AND CYTOTOXIC-PATHOGENECITY ACTIVITY ISLAND (CPAI) GENES

J. Yakoob^{1,2}, Z. Abbas¹, Z Ahmad³, K. Tariq¹, S. Awan¹, K. Mustafa⁴, R. Khan¹
¹Section of Gastroenterology, Department of Medicine¹, Biological Biomedical Sciences² & Department of Pathology³, Faculty of Health Sciences⁴, Aga Khan University, Karachi

Background and Aim: NonHodgkin Bcell lymphoma (NHBcL) is the second common gastric malignancy. We determined the distribution of *Helicobacter pylori* outer membrane protein Q(HopQ) allelic type, cag-pathogenecity activity island (cag-PAI) and vacuolation activating cytotoxin A(vacA) genes, respectively in patients with NHBcL and compared them with their distribution in nonulcerdyspepsia(NUD).

Method: *H. pylori* was cultured from gastric biopsy tissue obtained at endoscopy. Polymerase chain reaction was performed. Of 170 patients enrolled, 114(63%) had NUD and 56(37%) had NHBcL.

Results: HopQ type 1 was positive in 66(58%) in NUD compared to 46(82%)(P=0.002) in NHBcL; HopQ type 2 was positive in 93(82%) with NUD compared to 56(100%)(P <0.001) in NHBcL. Multiple HopQ in 46(40%) in NUD compared to 46(82%)(P<0.001) in NHBcL. CagA was positive in 48(42%) in NUD vs 50(89%)(P < 0.001) in NHBcL; cagT was positive in 35(31%) in NUD vs 45(80%) (P < 0.001) in NHBcL; cag LEC1 was positive in 23(20%) in NUD vs 43(77%) (P < 0.001) in NHBcL. VacAs1am1 positive in NHBcL in 48(86%)(P< 0.001) vs 50(44%) in NUD while s1am2 was positive in 20(17%) in NUD vs 46(82%)(P<0.001) in NHBcL.

Conclusion: *H. pylori* multiple HopQ types, left ended genes of the cag-PAI and virulent vacAs1 alleles contributed to chronic inflammation and NHBcL development.

Keywords: *Helicobacter pylori*; NonHodgkin Bcell lymphoma; HopQ types1 and 2; CagPAI; vacA

6.19 HELICOBACTER PYLORI OUTER MEMBRANE PROTEIN Q GENOTYPES AND THEIR SUSCEPTIBILITY TO ANTIADHESIVE PHYTOTHERAPEUTICS AGENTS

Javed Yakoob, Zaigham Abbas, Malik Hassan
Mehmood, Kanwal Tariq, Saima Azhar Saleem, Safia
Awan, Abdul Malik, Saeed Hamid, Rustam Khan,
Wasim Jafri
Section of Gastroenterology, Department of Medicine,
Aga Khan University, Karachi

Objective: *Helicobacter pylori* (*H. pylori*) is a Gram negative organism. Its outer membrane protein Q (HopQ) mediate host-pathogen interactions and HopQ genotypes type1 and type2 are found associated with gastroduodenal pathologies. We determined anti-adhesion effect of the extracts of *Abelmoschus esculentus* (*A. esculentus*), *Zingiber officinale* (*Z. officinale*), *Trachyspermum ammi* (*T. ammi*), *Glycyrrhiza glabra* (*G. glabra*), *Curcuma longa* (*C. longa*), *Cayenne* red and green in relation to HopQ genotypes and *H. pylori* cytotoxin associated geneA (*cagA*).

Methods: 115 *H. pylori* strains were used to extract DNA for polymerase chain reaction (PCR) of the HopQ genotypes i.e., type1 and type2 and *cagA*. The effect of selected dietary ingredients was determined using AGS cell line by quantitative DNA fragmentation assay. The antiadhesive effect of extracts on *H. pylori* was carried out using antiadhesion analysis.

Results: *Cayenne*, *C. longa* and *A. esculentus* showed prominent antiadhesion effect with resultant values of 17.3±2.9%, 14.63±3.7%, 13.8±3.6%, respectively, with HopQ type1 and 13.1±1.7%, 12.1±2%, 11.1±1.6%, respectively, with HopQ type2. *C. longa* (93%), *Cayenne* (89%) and *A. esculentus* (75%) had better antiadhesive activity profile against *H. pylori* with HopQ type1 compared to *H. pylori* with HopQ type2 with respective values of 70%, 64% and 51%, respectively. Extracts of *Cayenne* (14.7±4.1%), *A. esculentus* (12.3±4.1%) and *Z. officinale* (8.4±2.8%) had an antiadhesion effect against *H. pylori cagA* positive compared to *cagA* negative strains.

Conclusion: Antiadhesion properties of phytotherapeutic dietary ingredients were found that varied with HopQ genotypes. HopQ type1 was found more sensitive to extracts of *Cayenne*, *C. longa* and *A. esculentus* extracts compared to their effect against HopQ type2.

Keywords: *H. pylori*; HopQ; Antiadhesion; *Cayenne*; *C. longa*; *A. esculentus*

6.20 IN SEARCH OF TRUE CONSTIPATION/ UNDERSTANDING CONSTIPATION

Minaz Mawani, Abdul Azeem, Sakina Gheewala,
Nazish Butt, Shahab Abid
Section of Gastroenterology, Department of Medicine,
Aga Khan University, Karachi

Introduction: Constipation is a major public health issue worldwide and is associated with significant health care financial burden and reduced quality of life. About half of the patients are dissatisfied with the treatment prescribed. Since it is difficult to evaluate the exact nature of defecatory problems therefore there is a disagreement between how patients and doctors define constipation which leads to dissatisfaction with treatment amongst patients. There is a lack of data on patients understanding of constipation therefore we aimed to understand the nature of patient's defecatory disorders by using ROME III criteria.

Methods: A cross-sectional study was carried out during September to December 2015 in outpatient gastroenterology clinics of two major hospitals of Karachi; One public and one private tertiary care hospital. Purposive sampling was done and all patients complaining of constipation and consenting to participate in the study were included. Patients with alarm features (GI bleeding and weight loss) were excluded. Face to face interviews were conducted by trained doctors using a structured questionnaire.

Results: During three months period, a total of 396 patients were enrolled with subjective complaint of constipation with mean (SD) age 38.8(14.7) years. About 53% of the participants were men. Upon administering the ROME III based questionnaire, it was found that about 46.9% of the patients had functional constipation while the rest had IBS (irritable bowel syndrome) variant of constipation. Of all the participants, only about half (54.0%) reported to have slow transit constipation according to Bristol stool chart. Functional constipation was more common amongst men (66.1% vs. 33.9%) whereas IBS constipation was more common amongst women (42.1% vs. 57.9%). Most of the participants (95.5%) reported using one type of remedy. Women reported higher severity of constipation however, a higher percentage of men reported using medications to treat their symptoms.

Conclusion: All patients who report constipation should not be assumed to have slow transit

constipation and treatment should be prescribed accordingly. Proper understanding of patient's complain and symptoms is essential for the treatment/interventions.

6.21 PATIENTS PRESENTING WITH HEPATITIS C VIRUS INFECTION AT A LARGE TERTIARY CENTER IN PAKISTAN: A CROSS SECTIONAL ANALYSIS.

Saeed Hamid, Shahab Abid, Minaz Mawani, Farheen Lubna, Nirmal Khimani, Omm-e-Habiba, Anita Riaz, Aleena Zia
Department of Medicine, Aga Khan University, Karachi

Pakistan has a high burden of hepatitis C virus (HCV) infection, with almost 10 million people infected. We present a cross sectional analysis of out-patient HCV attendances at a large tertiary care hospital.

Methods: All new adult patients presenting with chronic HCV infection to GI clinics during August 2013 to August 2014 were analyzed. Information on patients demographics, medical and surgical history, comorbidities, source of infection, clinical presentation, lab investigations and treatment data was obtained.

Result: During one year, a total of 896 new HCV patients presented, with mean age 47.5 ± 12.2 years, (54.2%) males. Most common sources of infection reported were blood transfusion, dental procedures and surgery. Only 3 patients were documented injection drug users while source was unknown for most of the patients (n=733). Only 9.9% of the participants reported any drugs or alcohol use. Almost half of the participants (53.6%, n=481) were found to be obese. Most of the patients (50.8%) presented with chronic hepatitis C, followed by compensated cirrhosis(17.0%), decompensated cirrhosis(14.9%), acute hep-c (11.2%) and 36 (4.0%) had progressed to hepatocellular carcinoma. Most of the patients belonged to child class A (23.1%) and MELD < 15 (92.8%). Genotype 3 was the commonly seen in our patients (53.0%). Patients with decompensation and hepatocellular carcinoma were older, more likely belonged to child class B, had higher MELD scores and more were from sindhi ethnicity. These differences were statistically significant

Conclusion: Most patients with chronic HCV infection presented during the 5th decade of life, with non-cirrhotic liver disease. This information could help in determining the natural history of HCV infection in

Pakistani patients and also used to determine appropriate treatment strategies.

6.22 ITOPRIDE FOR GASTRIC VOLUME, GASTRIC EMPTYING AND DRINKING CAPACITY IN FUNCTIONAL DYSPEPSIA

Abid S¹, Jafri W¹, Zaman MU¹, Bilal R¹, Awan S¹, Abbas A¹.
Department of Medicine, Aga Khan University, Karachi

Aim: To study the effect of itopride on gastric accommodation, gastric emptying and drinking capacity in functional dyspepsia (FD).

Methods: Randomized controlled trial was conducted to check the effect of itopride on gastric accommodation, gastric emptying, capacity of tolerating nutrient liquid and symptoms of FD. We recruited a total of 31 patients having FD on the basis of ROME III criteria. After randomization, itopride was received by 15 patients while 16 patients received placebo. Gastric accommodation was determined using Gastric Scintigraphy. ¹³C labeled octanoic breadth test was performed to assess gastric emptying. Capacity of tolerating nutrient liquid drink was checked using satiety drinking capacity test. The intervention group comprised of 150 mg itopride. Patients in both arms were followed for 4 wk.

Results: Mean age of the recruited participant 33 years (SD = 7.6) and most of the recruited individuals, *i.e.*, 21 (67.7%) were males. We found that there was no effect of itopride on gastric accommodation as measured at different in volumes in the itopride and control group with the empty stomach ($P = 0.14$), at 20 min ($P = 0.38$), 30 min ($P = 0.30$), 40 min ($P = 0.43$), 50 min ($P = 0.50$), 60 min ($P = 0.81$), 90 min ($P = 0.25$) and 120 min ($P = 0.67$). Gastric emptying done on a sub sample ($n = 11$) showed no significant difference ($P = 0.58$) between itopride and placebo group. There was no significant improvement in the capacity to tolerate liquid in the itopride group as compared to placebo ($P = 0.51$). Similarly there was no significant improvement of symptoms as assessed through a composite symptom score ($P = 0.74$). The change in QT interval in itopride group was not significantly different from placebo (0.10).

Conclusion: Our study found no effect of itopride on gastric accommodation, gastric emptying and maximum tolerated volume in patients with FD.

Keywords: Dyspepsia; Functional dyspepsia; Gastric accommodation; Gastric emptying; Itopride

6.24

UPDATE ON DIAGNOSTIC VALUE OF BREATH TEST IN GASTROINTESTINAL AND LIVER DISEASES

Siddiqui I¹, Ahmed S¹, Abid S¹.

Department of Medicine, Aga Khan University, Karachi

In the field of gastroenterology, breath tests (BTs) are used intermittently as diagnostic tools that allow indirect, non-invasive and relatively less cumbersome evaluation of several disorders by simply quantifying the appearance in exhaled breath of a metabolite of a specific substrate administered. The aim of this review is to have an insight into the principles, methods of analysis and performance parameters of various hydrogen, methane and carbon BTs which are available for diagnosing gastrointestinal disorders such as *Helicobacter pylori* infection, small intestinal bacterial overgrowth, and carbohydrate malabsorption. Evaluation of gastric emptying is routinely performed by scintigraphy which is however, difficult to perform and not suitable for children and pregnant women, this review has abridged the ¹³C-octanoic acid test in comparison to scintigraphy and has emphasized on its working protocol and challenges. A new development such as electronic nose test is also highlighted. Moreover we have also explored the limitations and constraints restraining the wide use of these BT. We conclude that breath testing has an enormous potential to be used as a diagnostic modality. In addition it offers distinct advantages over the traditional invasive methods commonly employed.

Keywords: Breath tests; Diagnostic techniques; Gastrointestinal tract; *Helicobacter pylori*; Lactase deficiency

6.25

PREVALENCE & THE RISK FACTORS OF NONALCOHOLIC FATTY LIVER DISEASE IN URBAN, POPULATION OF KARACHI, PAKISTAN: A COMMUNITY BASED STUDY

Amna Subhan Butt¹, Saeed Hamid¹, Asma Ahmed², Waseem Memon³, Jaweed Akhtar²

¹Section of Gastroenterology, ²Section of Endocrinology, Department of Medicine, ³Department of Radiology, Aga Khan University, Karachi

Background: NAFLD is an emerging health problem in Asia-Pacific region where the knowledge about NAFLD is still lacking in general population. We aim to estimate the prevalence and factors associated with NAFLD in urban, adult population of Karachi, Pakistan and to compare various risk factors of NAFLD among individuals with normal glucose levels, impaired glucose tolerance (IGT) and diabetes.

Methods: This was population based prospective, cross-sectional study piggyback with Pakistan Diabetes Prevention Programme (PDPP) conducted during 2013-2016. PDPP is a large community based trial conducted in collaboration with the University of Helsinki in "Karachi" the largest metropolitan city of Pakistan. Approximately 20,000 residents of Karachi were screened for diabetes using systematic sampling with random start. Individuals aged 35-75 years, having Indian Diabetes Risk Score (IDRS) score ≥ 60 were enrolled. Individuals already known to have DM, existing liver disease due to any other causes, taking alcohol or hepatotoxic drugs were excluded. Ultrasound liver was performed by an experienced sonologist to identify NAFLD. Anthropometric measurements and laboratory investigations were carried out. The required sample size was 1068. The PDPP study was funded by International Diabetes Federation (IDF) and additional funding for NAFLD study was approved by URC, AKUH, Pakistan.

Result: A total of 1225 individuals were enrolled. Mean age was 44.4 \pm 9.5 years and 8.4% were females. Approximately 464 individuals had normal glucose levels, 541 had IGT and 220 were found to have DM. NAFLD was found in 741(60.5%) cases. The prevalence of NAFLD was significantly higher in patients with IGT and DM (47.2% vs. 66.7% vs. 73.2%, $p < 0.001$). The higher proportion of DM, dyslipidemia, obesity, higher BMI, higher waist and hip circumference, higher FBS, RBS, triglycerides, ALT and lower HDL was found among those who had NAFLD as compared to those who did not had NAFLD. When individuals with normal glucose levels were compared with individuals with IGT and DM an exponentially higher proportion of NAFLD, HTN, dyslipidemia, obesity, higher waist, hip circumference, higher FBS, RBS, TG, ALT were found in patients with DM as compared to individuals with IGT and normal glucose levels. The risk estimates for NAFLD in IGT group was 1.8 times higher than the euglycemic individuals and it was 2.2 times higher in the presence of DM ($p < 0.001$).

Conclusion: We found a very high prevalence of NAFLD among urban, adult population of Pakistan. The exponential rise in prevalence of NAFLD and various risk factors associated with NAFLD was found

in patients with IGT and DM as compared to those who had normal glucose levels. Hence, screening of individuals at risk for NAFLD will help in early detection and treatment for NAFLD.

The study is funded by URC, AKUH and IDF

6.26

BURDEN OF OBESITY AMONG PATIENTS DIAGNOSED WITH *HELICOBACTER PYLORI* AMONG PAKISTANI POPULATION

Basit Siddiqui, Hasnain Ali Shah, Javed Yakoob, Shahab Abid

Department of Medicine, Aga Khan University, Karachi

Background: As numerous adverse effects of obesity on health are becoming evident, it has recently been reported to associate with many gastrointestinal disorders as well, including Gastroesophageal reflux disease, esophageal erosion, esophageal carcinoma and h.pylori infection. Although some studies report a negative association between obesity and H.pylori infection, the differences in diagnostic methods these studies have used to detect H.pylori have raised many questions.

Study Objectives: To determine the burden of obesity among patients diagnosed with H.pylori infection presenting at the Gastroenterology unit of Aga Khan University Hospital.

Methods: It's a cross sectional study in which data of 399 patients with diagnosed H.pylori infection were analysed. These patients either presented at the outpatient department or were hospitalized in Aga Khan University Hospital for severe dyspeptic symptoms. Data were extracted for Age, Gender, BMI, history of smoking and alcohol use, co-morbidity history of hypertension, Type II Diabetes Mellitus, Coronary Artery Disease and Dyslipidemia. The diagnostic modality for the diagnosis of H.pylori was also recorded.

Results: Among the total, five and three patients were diagnosed as having H.pylori infection using stool antigen and urea breath test respectively while the remaining 391 were diagnosed on biopsy. Two hundred and ten (53%) patients were Male and the overall mean age was 43.68 ± 14.92 years. Of the total 208 (52%) were obese ($BMI \geq 27.5 \text{ kg/m}^2$). A total of 26 (6.5%) patients reported to be current smokers, while 22 (5.5%) were alcohol consumers. Regarding co-morbid conditions, 64 (16%) had hypertension (HTN), 73 (18%) had type II Diabetes Mellitus, 73 (18%) had Dyslipidemia and 52 (13%) had Coronary Artery Disease.

Conclusion: More than half of the patients diagnosed with H.pylori were suffering from obesity. Further investigation is needed to investigate any possible association between obesity and the risk of H.pylori infection.

6.27

AN UNUSUAL CASE OF CONGENITAL HEPATIC FIBROSIS AND RETINITIS PIGMENTOSA

Nazish Butt, ^{1,2} Ali Akbar ¹

¹Jinnah Postgraduate Medical Centre, Karachi. Pakistan, ²Aga Khan University, Karachi

Congenital hepatic fibrosis (CHF) is rare cause of non-cirrhotic portal hypertension and is a part of many different malformation syndromes, of which oculo-encephalo-hepato-renal syndrome is the most common. Upper gastrointestinal bleeding due to portal hypertension secondary to the development of esophageal varices is the major complication. We report the case of CHF with retinitis pigmentosa after written informed consent of parents.

Case Report: A 17 year old child third by birth order, of seven siblings and born of a consanguineous marriage presented with three episodes of hematemesis. He also complained of insidious onset of progressive left abdominal discomfort and loss of vision since childhood. On examination he was pale, with massive splenomegaly. On investigations he had elevation of transaminases about double the upper limit of normal. He also had anemia and reversal of albumin to globulin ratio.

Esophagogastroduodenoscopy revealed large esophageal varices. Band ligation was done to secure bleeding from esophageal varices. Fundoscopy showed typical retinitis pigmentosa. Liver biopsy showed altered architecture portal tracts showed lymphocytes, plasma cells, eosinophil and proliferating bile ducts with bands of fibrosis surrounding the portal tracts suggestive of CHF. Patient was advised for hepatocellular carcinoma and endoscopic surveillance and referred to liver transplant unit.

Conclusion: CHF is the part of malformations syndromes with multisystem involvement. In cases of CHF, search for other organ involvement is important at time of presentation as well as during follow up.

Keywords: Congenital Hepatic Fibrosis, Retinitis pigmentosa, esophageal varices.

6.28 MULTIDIMENSIONAL BURDEN OF DISEASE IN CHRONIC LIVER DISEASE PATIENTS

Ramlah Nadeem, Muhammad Kamran, Farheen Lubna, Fakhar Ali Qazi Arisar, Syed Muhammad Wasim Jafri
Department of Medicine, Aga Khan University, Karachi

Background/objectives: Chronic liver disease (CLD) is a major burden on the health of a country, affecting the physical, mental and economic health of both the patients and their caregivers. There has been research done on the effects it has on health related quality of life of patients suffering from CLD, however, little has been done on the effects it has on mental, emotional health and economic situation of the entire family unit. This study purposes to look into the financial aspect of the disease.

Methods: This is a cross sectional observational study where patients recruited at GI clinic from January to December 2016 were required to fill out validated questionnaires based on McArthur Social Status questionnaire.

Results: A total of 175 CLD patients were enrolled, which include 116 (66.28%) males. Mean age of cohort was 49.96 ± 12.089 years. Predominant aetiology of CLD hepatitis C (64%). Majority of patients were child class B (63%). Mean MELD score was 11.48 ± 3.556 . Diabetes was present in 26.5% patients. Mean duration of CLD diagnosis before study was 7.81 ± 6.161 years. Majority of patients belong to middle class social status with mean education of 8.86 ± 5.641 years. CLD significantly impacted the patients as 78.2% of patient blame there disease for worsening of their social and economic situation. 66.2% patients had to borrow money for their medical expenses. 49.7% had to leave or cut short their medicines or miss doctor's appointment due to expenses. 38.2% patients had to delay the education of their children. 13.7% patients left their houses in search of cheaper place.

Conclusion: CLD imposes a tremendous socioeconomic and emotional burden on patients and their caregivers. CLD related expenses impact the family unit's daily functioning and medical adherence.

Keywords: Chronic liver disease, socioeconomic burden, quality of life.

6.30 SPECTRUM OF GASTROENTEROLOGY AND LIVER DISEASE A CHANGING TRENDS

Farheen Lubna Hashmi, Shahab Abid, Saeed Hamid, Wasim Jaffery, Faisal Waseem, Amna Subhan, Om Parkash, Rustam Khan, Faraz Siddiqui
Section of Gastroenterology, Department of Medicine, Aga Khan University, Karachi

Background: The prevalence of GI and liver disease in the Pakistani population has increased remarkably over the recent years, reflecting an elevated burden on healthcare systems. Optimized health management and effective resource utilization in Health care facilities is based on timely documentation and reporting of disease patterns.

Aims: To present data from the GODD (gastroenterology outpatient discharge diagnosis) registry, comparing annual trends of GI & liver disease incidence among patients presenting to the Aga Khan University Hospital.

Methods: A review of electronic records was performed for all patients presenting to the Gastroenterology clinic, AKUH between 2013 and 2016. Collected information included patient characteristics and outpatient discharge diagnosis (primary and associated), based on a list of 72 approved diagnosis categories related to gastrointestinal and Liver diseases. Annual variation in this data is presented in this paper. A single visit is counted for specific year for each patient.

Result: A total of 28,493 new patients were seen in gastroenterology clinic. The mean age of the patients was 44.6 ± 15.8 years with an overall higher representation of males (58%). The number of patients was seen to gradually increase during study period from 6410 in 2013 to 8138 in 2016. Overall, 15,956 (56%) patients presented with GI disease which comprised APD(78.4%), FGID (14.98%) and others(6.62%), while patients with liver diseases were 12,535 (44%) and included HCV(50.3%), HBV(20.3%), HDV(7%), Hepatitis A(0.79%), Hepatitis E(0.59%), NBNC(4.22%), NASH(5%), Hepatoma(1.80%), Others(10%) .

Conclusion: This report highlights annual trends in outpatient data from a major tertiary care center in Karachi, Pakistan. The analysis suggests a higher frequency of GI disorders, majority of which are comprise of APD, GERD, gastritis. Among liver disorder, HCV, HBV were highest in our setting. Further efforts should focus on prioritization and effective management of these most commonly observed ailments.

Keywords: Spectrum, changed, Trends

6.31

INFILTRATIVE GALL BLADDER TUBERCULOSIS V/S GALL BLADDER LOCALLY INFILTRATING TUMOR: DIAGNOSTIC DILEMMA UNMASKED BY HISTOPATHOLOGY

Rajesh Bansari¹ and Om Parkash²
Section of Gastroenterology, Department of Medicine,
Aga Khan University, Karachi

Gall bladder tuberculosis as an isolated infection is an extremely rare entity even in the parts of world with endemecity. Though it has a myriad presentation but can be cured successfully. We present a case of 53 years old male who presented with epigastric fullness and bloating with on and off low grade fever for 2 months and significant weight loss. He underwent CT scan showing soft tissue gall bladder mass causing mural thickening of antrum and lesser curvature followed by CT guided core biopsy and gastric antrum biopsy via gastrocope. Histopathology revealed chronic granulomatous inflammation in both samples. Various clinical presentation of gall bladder tuberculosis has been reported till yet, but to the best of our knowledge present case has unique presentation and has never been reported before.

Keywords: Gall bladder,tuberculosis, Stomach,
Computed tomography (CT),Gastroscopy,
Histopathology.

6.32

HEPATOCELLULAR CARCINOMA AFTER ERADICATION OF HEPATITIS C VIRUS WITH DAAS. A CASE REPORT AND LITERATURE REVIEW

Fakhar Ali Qazi Arisar, Saeed Sadiq Hamid
Section of Gastroenterology, Department of Medicine,
Aga Khan University, Karachi

Hepatocellular carcinoma (HCC) is ranked at second and sixth among the ten leading cancer types for the estimated cancer related deaths, in males and females respectively. Hepatitis C is a major risk factor for development of hepatocellular carcinoma. Risk of HCC after eradication of HCV is although decreased but not completely abolished. We here present a case of treatment naïve, non-cirrhotic, chronic hepatitis C patient who was treated with DAA and develop

infiltrative HCC. The gentleman was of 64 years age, and was treated with sofosbuvir and ribavirin for hepatitis C in 2015. His labs were consistent with his non-cirrhotic status including APRI and FIB-4 scores. He achieved RVR, ETR and SVR 24. 16 weeks after completion of his treatment he developed upper abdominal pain. On workup he was found to have infiltrative HCC which was not present on ultrasound a month before, suggestive of rapidly growing nature. This suggests that patients treated for HCV, despite being non-cirrhotic, should be kept in surveillance even after achieving SVR.

6.33

HEPATITIS B SCREENING BEFORE CHEMOTHERAPY

Amna Subhan Butt¹, Farhana Kayani², Yasmin Rashid,
Aneeqa Kamal
Section of Gastroenterology, Department of Medicine,
Aga Khan University, Karachi

Introduction: Hepatitis B virus (HBV) and Hepatitis C virus (HCV) infection, a major health burden that affects approximately 350 million and 140 million people worldwide. Hepatitis B and C reactivation are potentially serious complication of anticancer chemotherapy, which occurs during and after therapy causing increased mortality and morbidity. Reactivation has been reported most frequently in patients with hematologic malignancies, but it has also been associated with chemotherapy use in patients with solid tumors. Screening patients before the initiation of immunosuppressive treatment is therefore important so that prophylaxis can be commenced to prevent HBV and HCV reactivation.

Objective: To determine the frequency of cancer patients undergoing screening for hepatitis B and C before start of chemotherapy.

Study design: Cross sectional study was conducted. Data was collected from early January 2011 till late December 16. 400 diagnosed cancer patients who met the diagnostic criteria were included. Demographic data was presented as simple descriptive statistics giving mean and standard deviation and qualitative variables was presented as frequency and percentages. Effect modifiers were controlled through stratification. Post stratification chi square test was applied taking p-value of ≤ 0.05 as significant.

Results: A total of 400 diagnosed cancer patients were included in this study. Mean age in our study was 55.10 ± 8.39 years. 60 (40.8) were male and 87 (59.2%)

were female. Out of 400 cancer patients, 169 (42.25%) and 231 (57.75%) patients were screened and not screened for Hepatitis B and C respectively.

Conclusion: Screening of HBV and HCV infection should be suggested as a routine investigation in cancer patients before receiving chemotherapy for timely detection and prevention of reactivation of HBV and HCV infection causing fatal complications and mortality associated with it.

Keywords: Chemotherapy, Hematologic malignancy, Hepatitis B virus, Hepatitis B virus reactivation and Solid tumor.

6.34 NAFLD IN NEWLY DIAGNOSED TYPE 2 DIABETES: PREVALENCE AND ESTIMATION OF MULTIPLICATIVE EFFECT FOR COMBINATION OF VARIOUS PREDICTING FACTORS

*Amna Subhan Butt¹, Saeed Hamid¹, Zishan Haider¹,
Mohammad Salih¹, Fatima Sharif¹, Safia Awan,
Jaweed Akhter¹*
¹Department of medicine, Aga Khan University,
Karachi

Background: Being a risk factor for NAFLD a rapid rise in the prevalence of type 2 Diabetes (T2DM) has necessitated the investigation of NAFLD in Asians where knowledge about NAFLD is in a nascent stage. We aim to estimate the prevalence of NAFLD and the multiplicative effect for combination of predicting factors associated with NAFLD among Pakistani patients with newly diagnosed T2DM.

Methods: This cross-sectional study was conducted at outpatient clinics of Aga Khan University Hospital during 2008-2013. Consecutive patients ≥ 18 years of age with newly diagnosed T2DM were enrolled. Ultrasound liver was performed to identify NAFLD. Anthropometric measurements and laboratory investigations were carried out.

Result: Out of 203 patients with newly diagnosed T2DM, NAFLD was found in 146(71.9%) cases. Dyslipidemia(OR 2.38, 95%CI 1.06-5.34, p0.035), higher LDL(OR 1.02, 95%CI 1.01-1.03, p0.003), HbA1c(OR 1.27, 95%CI 0.97-1.68, p0.045) and diastolic BP (OR 1.05, 95%CI 1.01-1.10, p0.009) were significantly associated with NAFLD. While physical activity(OR 0.23, p<0.0001) and higher HDL (OR 0.92, p<0.0001) were protective factors. A rising trend in odds of having NAFLD was observed with increasing number of risk factors. A combination of physical inactivity, HTN, dyslipidemia, waist

circumference, BMI, HbA1c, TG, HDL, LDL and ALT predicts the highest odds of 10.8 for NAFLD (95%CI 4.9-24, p0.001).

Conclusion: We found a high prevalence of NAFLD in Pakistani patients with newly diagnosed T2DM. Dyslipidemia, higher LDL, HBA1c and diastolic BP were significantly associated with NAFLD.

6.35 ROLE OF OMEGA-3 FATTY ACIDS IN IRRITABLE BOWEL SYNDROME (IBS)

Javed Yakoob, Zaigham Abbas
Section of Gastroenterology, Department of Medicine,
Aga Khan University, Karachi

Background: Dietary supplementation with Omega-3 (ω -3) fatty acids (FAs) has been demonstrated to elicit several effects ranging from decrease in blood pressure, anti-arrhythmic effect and decrease in inflammation in inflammatory bowel disease, asthma and rheumatoid arthritis. Irritable bowel syndrome (IBS) is a chronic disorder characterized by abdominal pain and irregular bowel habit. It is associated with visceral hypersensitivity, increased mucosal permeability and a low-grade mucosal inflammation. Commercially available omega (ω)-3 polyunsaturated fatty acids (PUFA) are being prescribed as empirical treatment for many chronic ailments including IBS.

Aim: To examine literature available support use of ω -3 PUFA in IBS.

Methods: We conducted a search using "Omega 3 fatty acids supplementation" on the PubMed, Scopus, and databases (e.g. Medline, Cinahl, Embase, and Science Citation Index Expanded) from 1966 to December, 2015.

Result: The gut microbiota in IBS is associated with an imbalance of Firmicutes/ Bacteroidetes ratio. This imbalance has an impact on gas and metabolite production such as short chain fatty acids. Omega-3 FAs are anti-inflammatory, while ω -6 FAs are proinflammatory.

Conclusion: The benefit of ω -3 FAs for IBS requires more clarification by prospective studies. Current claims of long chain PUFA supplementation in IBS should be viewed with caution.

Keywords: irritable bowel; omega-3 fatty acids; anti-inflammatory; omega-6 fatty acids; proinflammatory

6.36

DISTRIBUTION OF GASTRIC CARCINOMA IN AN AREA WITH A HIGH PREVALENCE OF HELICOBACTER PYLORI

Yakoob J, Fatima SS, Abbas Z, Mustafa SF, Khan HA, Raghieb MF, Awan S, Ahmad Z.

Departments of Medicine and Biological Biomedical Sciences, Aga Khan University, Karachi

Background/aims: South Asia is an enigma for gastric cancer (GC) because it is a low risk region with a high prevalence of Helicobacter pylori (H. pylori) infections. We evaluated the trend of GC clinical presentation and risk factors in patients with dyspeptic symptoms.

Materials and methods: The medical records of patients, coded by the international classification of diseases (ICD-10-CM, 2015, Diagnosis Code C16.9) for malignancies of stomach diagnosed by esophagogastroduodenoscopy (EGD) and histopathology, were studied.

Results: 394 GC cases with a mean age of 54±15 years, range of 18 to 88, were analyzed. 256 (65%) were male. Distal non-cardiac and cardiac tumors were 302 (77%) and 92 (23%) cases, respectively. The WHO classification of GC defined 222 (56%) cases as intestinal type adenocarcinoma, 68 (17%) cases as signet ring cell carcinoma (SRC), 62 (16%) cases as diffuse type and 42 (11%) cases as B cell non-Hodgkin lymphoma. The co-morbid conditions associated with GC were H. pylori infection (positive in 246 (62%) cases), diabetes mellitus type 2 (in 90 (23%) cases), and cigarette smoking (in 94 (24%) cases). Of the male patients, 88 (34%) (p<0.001) were smokers. Body mass index was abnormal in all age groups and in both sexes. Cardiac regions for GC were more common in the 46- to 60-year old age range and in males. Diffuse GC was seen in all age groups but there were significantly more common in the 18- to 45-year old age range. Gastric non-Hodgkin's lymphoma was seen at an early age of 18-45 years in 14(12%) and a later of 61-88 years in 20 (15%).

Conclusion: Intestinal type GC is common at all ages but SRC and diffuse GC are more common in patients less than 50 years old. SRC and diffuse GC were not specific to the elderly in our study population.

6.37

SOFOBUVIR IN COMBINATION WITH RIBAVIRIN IN GENOTYPE 3 HEPATITIS C PATIENTS WITH CIRRHOSIS: THE EXPERIENCE OF TERTIARY CARE HOSPITALS

Nazish Butt^{1,2}, Ali Akbar¹, Sehrish Reema¹, Sehrish Butt³, Ali Khan¹, Farhan Haleem¹, Ghulam Basit¹, Muhammad Masood¹, Anoshia Saleem¹, Talha Qureshi¹

¹Jinnah Postgraduate Medical Centre, Karachi, Pakistan, ²National Medical Centre, Karachi, ³Aga Khan University hospital, Karachi.

Introduction: Hepatitis C virus (HCV) is the leading cause of cirrhosis. Advent of Directly acting antivirals (DAAs) like Sofosbuvir (SOF) has dramatized the treatment and is the corner stone in treatment of (HCV). Most trials have been conducted in HCV genotype 1 and data for Interferon free regimen in genotype 3 (GT-3) is limited.

Aim: To evaluate the safety and efficacy of SOF plus Ribavirin (RIB) in patients with compensated and decompensated cirrhosis.

Methods: This was a prospective real world cohort study of HCV with compensated or decompensated cirrhosis. Efficacy was assessed by End Treatment Response. Adverse events were recorded on designed proforma on serial follow up visits.

Results: The cohort consisted of 70 consecutive patients out of which 30 had compensated cirrhosis and 40 decompensated cirrhosis. The mean age was 53.4 ± 11years. Males were 37(53.5%) and females were 33(46.5%). Mean CTP and MELD score were 6.71 and 9.21 respectively. In compensated cirrhosis ETR was achieved in 21(87.5%) treatment naïve patients and 4(80%) in experienced patients. In decompensated cirrhosis treatment naïve and experienced ETR was achieved in 16 (80%) and 11(78.6%) respectively. In 89.40% patients with cirrhosis, there were no side effects.

Conclusion: Sofosbuvir in combination with ribavirin in GT-3 patients achieved good ETR in compensated cirrhosis than decompensated cirrhosis and there were no serious adverse events reported.

Keywords: Cirrhosis, GT3, Sofosbuvir and Ribavirin.

6.38

SAFETY AND EFFICACY OF SOFOSBUVIR CONTAINING REGIMEN IN PATIENTS WITH GENOTYPE 3 CHRONIC HEPATITIS C VIRUS INFECTION; THE EXPERIENCE OF TERTIARY CARE HOSPITALS

Nazish Butt^{1,2}, SehrishReema¹, Ali Akbar¹, Sehrish Butt²

¹Jinnah Postgraduate Medical Centre, Karachi. Pakistan, ²National Medical Centre, Karachi

Introduction: Hepatitis C virus (HCV) infection is the most common cause of chronic liver disease in Pakistan. Over the past few years direct antiviral agents (DAAs) has been revolutionary in the management of HCV and sofosbuvir (SOF) is the backbone of most modern strategies. As this drug is recently approved in our country, so limited local data exists regarding its safety and efficacy in our population.

Objective: We evaluated the efficacy and safety of Peginterferon (PEG INF) and Sofosbuvir (SOF) plus Ribavirin (RIB) and SOF plus RIB in patients with chronic HCV genotype 3 infection.

Methods: This was a prospective cohort study of chronic HCV patients. Efficacy was assessed by end treatment response PCR (at the end of 3 months in PEG IFN plus SOF and ribavirin and 6 months in SOF plus RIB). Adverse events were documented on history, physical examination and labs on serial follow up.

Results: The cohort consisted of 312 consecutive. The mean age was 43±12.5 years. Males were 43.2% and females were 56.8%. In treatment Naïve patients ETR was achieved in 97.61% SOF+PEG+RIB group and 96.29 % on SOF+RIB group. In treatment Experienced patients, ETR was achieved in 95.74% SOF+PEG+RIB group was and SOF+RIB was 91.30 %.In 89.40% there was no side effects whereas most common adverse event was fatigue.

Conclusion: Sofosbuvir containing regimens are safe and effective for treatment naïve and treatment experienced chronic hepatitis C patients.

Keywords: Chronic hepatitis C, Sofosbuvir, Genotype 3

6.39

PULSION ESOPHAGEAL DIVERTICULUM: AN UNCOMMON YET IMPORTANT UPPER GI PROBLEM

Ajeet Kumar Lohana , Rajesh Bansari, Fakhar Ali Qazi, Shahab Abid, Saeed Hamid , Wasim Jafri
Section of Gastroenterology, Department of Medicine, the Aga Khan University, Karachi

Background/objectives: Diverticulum is an external out pouching of mucosal layers from lumen. GI tract diverticula are common in large bowel .Diverticula are of two types traction and pulsion; pulsion Esophageal diverticulum (PED) are basically false diverticulum with external out pouching of mucosal layer only. Most of PED are associated with underlying esophageal motility disorder .PED are Zenker's diverticulum (ZD), mid esophageal diverticulum (MD) and Epiphrenic diverticulum (ED) depending upon location of esophagus where they occur. Most of PED appear as incidental finding on upper GI endoscopy and their association in patients with persistent Upper GI symptoms irrespective of prolonged Medical treatment is not well described in literature. We aim to describe features of PED and improvise management.

Method: This is retrospective observational study. Out of 20,757 (year 2011-2016) diagnostic upper GI endoscopies performed, 32 patients found to have PED .Data collected and analyzed using SPSS version 19.

Results: Mean age was 58 ±13 year. 53% were male, 62% patient had MD, 18% and 15 % had ZD and ED respectively. 71.9% had associated gastritis commonly non HP gastritis and 25% had hiatus hernia. None of our patient had High resolution manometry checked. 62% patients had different comorbidities including Gall bladder stones (12.5%), hypothyroidism (9.4%), obesity (6%) and others. Dysphagia (40.6%), dyspepsia (43.6%), Gastro esophageal reflux (40.6%) were common symptoms including others; like, abdominal pain, weight loss, vomiting, and one patient with choking. Duration of symptoms before diagnosis was variable ranging from 2 months to 15 years. Only 5 patients underwent surgical diverticulectomy; three patients had Zenker's diverticulectomy, two patients had Epiphrenic diverticulectomy; persistent dysphagia and choking in one patient with ZD necessitated surgery. Only 15 patients had follow up including all 5 patients who had surgery, had resolution of their symptoms on follow up with only 50% patient on medical treatment showed improvement.

Conclusion: PED is uncommon problem, an incidental finding with variable symptomatology. Surgical intervention is helpful particularly in patients with

persistent disabling symptoms; unamenable to medical therapy.

Keywords: Pulsion Esophageal diverticulum, surgical diverticulectomy

6.40 HOSPITAL PRACTICES PROMOTING HEALTH OF HEALTH CARE WORKERS IN A METROPOLITAN CITY OF A DEVELOPING COUNTRY

Nourin Jivany, Javed Yakoob, Shazia Bana, Asima Faisal, Humeira Jawed, Safia Awan**
School of Nursing & Department of Medicine, Aga Khan University, Karachi, Pakistan

Background and Aim: Promotion of workplace practices for health and safety of healthcare workers (HCWs) are important as it determines the quality of healthcare delivered to the population at large.
Methods: A cross sectional study enrolled eleven hundred-forty-six HCWs from two public and two private hospitals responded to a structured questionnaire from January 2013 to December 2014 in a metropolitan city. Questionnaire comprised of three sections, first exploring the demographics, second exploring the current scenario of health promotion and safety practices at their hospital and third finding out employees' perspective of applying workplace health promotion practices at their worksites.
Results: Written policies and guidelines regarding employee health promotion did not exist at 176 (84%) of public hospital (GH) compared to 47 (22%) in private hospital (PH), respectively ($P < 0.001$). Employee working at GH 209 (100%) were not communicated health policies compared to 136 (64%) in PH, respectively ($P < 0.001$). Employee working at GHs, 209 (100%) reported had no access to health policies compared to 141 (67%) in PH, respectively ($P < 0.001$). There were no specific employee health professional in GHs compared to 99 (47%) in PHs. In GH, workplace health promotion activities were not carried out 209 (100%) compared to 109 (52%) in PH ($P < 0.001$). In GHs, HCWs were not encouraged to participate in health related activities 209 (100%) compared to 62 (29%) in PH ($P < 0.001$).
Conclusion: There was a vast difference exists in health and safety promoting practices of HCWs at public and private hospitals. Policy incorporation, communication and awareness of employees regarding health promotion activities need improvement at both hospitals.

Keywords: Healthcare, workers, health policy, promotional activities, communication

6.41 UNDERSTANDING HEALTH SEEKING BEHAVIOR OF HEALTH CARE PROFESSIONALS IN TERTIARY CARE HOSPITALS IN PAKISTAN

*Shazia Bana, Javed Yakoob,*Nourin Jivany, Asima Faisal, Humeira Jawed, Safia Awan.*
School of Nursing & Department of Medicine, Aga Khan University, Karachi

Background: Health seeking behaviour refers to the behaviour of people towards seeking their own health through provided health services. The medical professionals are at a higher risk of avoiding health seeking behaviour because they believe they are aware of the diseases and their symptoms as well as the pharmaceutical management of the disease. The aim of this study was to understand the healthcare seeking behaviour of nurses and doctors as well as the factors affecting it in hospitals of a major city in a developing country.

Methods: A cross-sectional study was designed and a self-report questionnaire was distributed to healthcare workers at four tertiary care hospitals from July, 2012 to December, 2014. A total of 1015 participants responded. There were 234 (23%) doctors, 664 (65%) nurses, 60 (6%) pharmacist and 57 (6%) paramedical staff.

Results: The doctors 194 (83%) had a greater access to medical facilities compared to nurses 278 (42%) ($p < 0.001$). Doctors 176 (75%) compared to nurses 262 (39%) were utilizing healthcare service more often ($p < 0.001$). Majority of the nurses 494 (74%) never visited a doctor for any complaint over a period of one year compared to doctors 132 (56%) ($p = 0.002$). Doctors 234 (100%) and nurses 662 (99.7%) equally self-medicated themselves ($p = 0.401$). Nurses 134 (20%) were less aware of the organization policies offered for employees ill-health compared to doctors 102 (44%) ($p < 0.001$). Nurses 530 (80%) were also less aware of the significance of regular health check-ups compared to doctor 234 (100%) ($p < 0.001$).

Conclusions: Among the healthcare workers, doctors have greater access to healthcare facilities. Majority of nurses do not seek healthcare when they get sick. Self-medication is common in both groups.

Keywords: Healthcare professionals; health seeking behaviour; self-medication; over the counter medications

6.42 MANTLE CELL LYMPHOMA INVOLVING COLON: RARE ENTITY

Amna Subhan Butt¹, Fatima Sharif²
¹Section of Gastroenterology, Department of
Medicine, Aga Khan University Hospital, Karachi,
²Aga Khan University, Karachi, Pakistan

Mantle cell lymphoma (MCL) is a distinct clinicopathological entity recognized under the Revised European American Lymphoma Classification and the WHO Classification of Hematopoietic Malignancies. MCL is a subtype of the B-cell non-Hodgkin lymphomas (NHL) and comprises about 7% of adult NHL. While the presentation of MCL is highly variable, Upper GI tract involvement can manifest as mild gastritis whereas lower GI tract involvement is usually in the form of lymphomatous polyposis. Here we report three cases of mantle cell lymphoma who presented to us with gastrointestinal symptoms followed by literature review.

Case 1: A 69-year-old gentleman presented to our hospital with 8 months history of loose stools, fever, fatigue and weight loss. General physical examination revealed moderate pallor with lymphadenopathy. Systemic examination revealed ill-defined, vague, non-tender and firm mass in right lower quadrant. Laboratory reports revealed hemoglobin of 9.3 gm/dl, WBC counts 23500/mm³ (Polys: 31%, Lymphos: 54%), platelet counts 242000/mm³. Colonoscopy showed thickened, edematous mucosa with polypoid appearance throughout the colon (figure 1). He was diagnosed as stage IV MCL. Mantle cell international prognostic index (MIPI) was 7.73 (>6.2=high risk). He was started on bendamustine plus rituximab (BR chemotherapy). After first cycle he was admitted with febrile neutropenia and sepsis. The patient died during hospital admission.

Case 2: 72-year-old lady presented with 3 months history of altered bowel habits, abdominal pain, loss of appetite and weight loss. On examination, she was pale with 2 finger splenomegaly. Laboratory results revealed Hb 11.6 gm/dl, WBC counts 3100/mm³, platelet counts 130000/mm³. Serum creatinine, electrolytes, LFTs were within normal range. CT scan showed hypodense intraluminal mass in caecum with para caecal and inguinal lymphadenopathy, borderline splenomegaly. Colonoscopy showed a broad based polypoid mass in caecum (figure 2). Bone marrow showed multiple CD20 positive lymphoid aggregates. MIPI was 5.55 (low risk).

Case 3: 54-year-old female presented with 5 months history of altered bowel habits, bleeding per rectum,

abdominal pain, and low grade fever and weight loss. On examination, she was pale without any lymphadenopathy. Abdominal examination revealed 3 finger hepatomegaly and 2 finger splenomegaly. Flexible sigmoidoscopy showed circumferential, polypoid mass at 3 cm from the anal verge, extending proximally for 5 cm. Biopsy showed MCL. CT abdomen revealed thickened gastric, duodenal, terminal ileal, cecal and ascending colon walls and abdominal lymphadenopathy. MIPI was 5.53 (low risk). This patient received 8 cycles of R-CHOP (rituximab, cyclophosphamide, hydroxydaunorubicin, oncovin and prednisone) followed by 3 cycles of maintenance rituximab but she developed relapse and lost to follow up.

6.43 METASTATIC CUTANEOUS CROHN'S DISEASE: A RARE ENTITY

Amna Subhan Butt¹, Fakhar Qazi¹, Saadia Tabassum²
¹Section of Gastroenterology, Department of
Medicine, Department of Medicine, Aga Khan
University, Karachi

Involvement of vulva by Crohn's disease is uncommon and challenging to treat. Few cases of genital involvement have been reported. We describe two young females who presented with perineal swelling and biopsy showed metastatic Crohn's disease. A review of the literature regarding vulval Crohn disease also is provided.

Case 01: A 14 year old girl presented with 2 year history of labial swelling which gradually increases for which she underwent surgical resection thrice with only temporary relief. Histological examination of perineal tissue unveiled chronic granulomatous inflammation for which she completed antituberculous treatment for 9 months without any additional benefit. She denied any history of ocular symptoms, joint pains. Genital examination showed distorted vulva with bilateral labial swelling (10x6cm on right and 6x4cm on left) and perianal skin tags. On investigations she was found to have iron deficiency anemia with raised inflammatory markers (ESR and CRP). Colonoscopy revealed patchy colitis with edematous mucosa, loss of vascularity, extensive ulceration, microabscess formation with areas of intervening normal mucosa and multiple shallow diverticulae in rectosigmoid region. She was ANA 1+ homogenous positive and ANCA negative. She was started on steroids and asacol. Later she had frequent visits with flare and required introduction of azathioprine in her regime despite which she had

intermittent vulval swelling along with development of perianal sinuses/fistulae over a period of 4 years. She was advised adalimumab but due to financial constraints she lost follow up.

Case 02 A healthy 25-year-old lady, with no personal or family history of actual interest, was referred to our department from the dermatology department, where she had been visiting for considerable inflammation and deformity of the perineal region and labia which she had for last 3 years. A tentative diagnosis of hidradenitis suppurativa was made and treatment with antibiotics resulted in mild improvement. When seen in GI clinic she presented with dramatic edema of the genitals that caused considerable deformity, along with ulcerations and discharges from inguinal region. In the groin, induration papules and pustules were found. Few small skin tags were observed in the perianal region. Adjacent dermis has dense plasma cell infiltrate. Colonoscopy was performed which showed mild patchy erythema and aphthoid ulcers in the sigmoid colon and internal hemorrhoids. Biopsy revealed Mild active colitis with epithelioid granuloma formation; differential diagnosis includes Crohn's disease and Tuberculosis. Overall, the features favor the former (Crohn's disease). Her MRI abdomen/Pelvis doesn't reveal any fistulous tract between gastrointestinal tract and perineal/perianal skin, while her p-ANCA was positive. She was started on adalimumab, leading to improvement in her symptoms.

Genetic Disorders

7.1 MANAGEMENT OF PSEUDOHYPALDOSTERONISM (PHA) TYPE 1 , EXPERIENCE OF A TERTIARY CARE CENTER IN PAKISTAN.

Shah Ali Ahmed, Salman Kirmani
*Department of Paediatrics and Child Health, Aga
Khan University*

Pseudohypoaldosteronism is a rare disorder with only a few cases reported worldwide. It manifest during early neonatal age as life threatening hyperkalemia, hyponatremia, metabolic acidosis, dehydration and failure to thrive. There is a resistance to aldosterone by mineralocorticoid receptor. There is very scarce data from Pakistan on this rare entity. We describe a series of 7 cases of Pseudohypoaldosteronism from Agha Khan University Hospital, Karachi, their initial presentation, diagnosis and difficulties in management.

Keywords: pseudohypoaldosteronism, congenital, rare

7.2 PROPOSAL FOR AVOIDING MITOCHONDRIAL GENOMIC DRIFT BY PREVENTING MITOCHONDRIAL ACQUISITION DURING NUCLEAR TRANSFER:

Abdul Mannan Baig
*Department of Biological and Biomedical Sciences,
Aga Khan University*

Therapeutic cloning to generate isogenic embryonic stem cells for transplantations in diseases caused by mutations of mitochondrial DNA (mtDNA) is challenging. In addition to the fine-tuning of the methods involved in nuclear transfer, problem like genetic drift that can lead to restitution of the original donor mitochondrial genotype has questioned the effectiveness of this method. This genetic drift could occur by acquisition of mitochondria during the procedure of procurement of the nuclear chromatin from the donor ovum/somatic cell. This occurrence has confronted the procedure of nuclear transfer and its effectiveness in cell therapy for diseases caused by mutations of mtDNA. If such a genetic drift occurs due to mtDNA hetroplasm, it could lead to failure of synchronization of nuclear DNA with mtDNA and/or reemergence of the mtDNA related disease after cell therapy. We propose methods that could completely avoid the occurrence of genetic drift by minimizing the chances of acquisition of mitochondria during nuclear transfer. Pretreatment of the somatic cells with

mitochondrial toxins that have no deleterious effects on nuclear chromatin and barometric dissection of the cytosol are proposed and will be performed. These procedures are expected to completely avoid the mitochondrial shifts during nuclear transfer and eliminate the chances of uncoupling of the nuclear and mtDNA synchronization and the fear of recurrence of mtDNA related disorders after cell therapy.

Keywords: Stem cells, Somatic Nuclear Cell Transfer, Cloning

7.4 CYTOGENETIC ANALYSIS OF RECURRENT PREGNANCY LOSSES AND ABNORMAL CHILDREN HISTORY

*Syeda Ambreen Zehra, Samuel Sharif, Shahid Hussain,
Syeda Anum Zehra*
*Department of Pathology and Laboratory Medicine,
Aga Khan University*

Abstract Background: Recurrent pregnancy loss is a frequent occurrence in Pakistani population, which is a matter of great concern for couples planning to have children. Evidently, in repeat miscarriage cases and in parents who have previous abnormal children, chromosomal abnormalities mainly balanced rearrangements are commonly found. *Objective:* The purpose of this study was to evaluate contribution of chromosomal anomalies causing repeated spontaneous miscarriages/ previous abnormal children and to provide features of structurally altered chromosomes. *Methods:* In this study, we evaluated karyotype results of blood specimens obtained from 350 Pakistani patients using G-banding technique.

Results: A total of 350 patients selected from October 2016 to October 2017; out of those 198 cases were confirmed for recurrent pregnancy loss and 152 cases had abnormal babies. Mean age of female patients was 28.7 years and it ranged between 20 and 43 years, whereas mean age of male patients was 33 years and it ranged between 22 and 50 years. Karyotypes were interpreted according to the International System for Human Cytogenetic Nomenclature (ISCN, 2016) criteria. Out of 350 specimens 9 (2.5%) showed chromosomal rearrangements.

Conclusion: The frequency of chromosomal abnormalities among couples with recurrent miscarriage varied from 2% to 8%. Chromosomal analysis is an important etiological investigation in couples with repeated miscarriages/ abnormal children. Characterization of variant chromosomes enables calculation of a more precise recurrent risk in a

subsequent pregnancy thereby deciding further reproductive options. Key Words: Recurrent pregnancy losses, Cytogenetic analysis, Chromosomal abnormalities,

Keywords: Recurrent pregnancy losses, Cytogenetic analysis, Chromosomal abnormalities

7.5 SEX CHROMOSOME ABNORMALITIES IN PAKISTANI POPULATION

Samuel Sherif, Syeda Ambreen Zehra, Shahid Hussain, Tariq Moatter, Hadayatullah Barkat, Kiran Sachwani, Syeda Anum Zehra, Maleeha Qayyum, Iqra Riaz, Department of Pathology and Laboratory Medicine, Aga Khan University

Abstract Background Cytogenetic analysis is a valuable investigation for the diagnostic work up of suspected chromosomal disorders. The objective of this study was to determine the proportion of sex chromosome abnormalities from a pool of all chromosomal abnormalities reported in the Pakistani population.

Methods Cytogenetic results of 1042 patients, which were reported between January 2016 and September 2017, were reviewed retrospectively. All individuals were suspected for sex chromosomal disorders. Karyotyping analysis was performed in the Cytogenetics Lab of Molecular Pathology Section, Aga Khan University Hospital.

Results A total of 1042 individuals were successfully karyotyped. Abnormal karyotypes were found in 394 (34.50%) patients. Fifty-two percent (550 individuals, mean age 15.3 years) reported with a history of primary amenorrhea and Turner syndrome. Out of those, 96 cases (17%) were verified for abnormal karyotypes. In addition, 448 individuals (mean age 5.8 years) came with a history of ambiguous genitalia, and surprisingly out of those 136 cases (30%) reported to have a different sex. Out of 44 individuals (mean age 24 years) with suspected history of Klinefelter syndrome 9 cases (20%) reported positive for Klinefelter syndrome. Furthermore, Turner syndrome was the commonest aneuploidy identified.

Conclusions In comparison to the regional data, the prevalence of sex chromosomal abnormalities in the Pakistani population undergoing cytogenetic analysis for suspected sex chromosomal disorders was relatively higher.

Keywords: Aneuploidy, chromosome aberrations, cytogenetic analysis

7.6 IDENTIFICATION AND CLINICAL MANIFESTATION OF ALKAPTONURIA: A PAKISTANI PERSPECTIVE

*Dr Yusra Zaidi, Dr Lena Jafri, Hafsa Majid, Dr Bushra Afroze, Dr Aysha Habib Khan
Department of Pathology and Laboratory Medicine,
Aga Khan University*

Identification and Clinical Manifestation of Alkaptonuria: a Pakistani Perspective Yusra Zaidi, Lena Jafri, Hafsa Majid Bushra Afroze, Aysha Habib Khan Departments of Pathology and Laboratory Medicine and Pediatrics and Child Health, Aga Khan University, Karachi, Pakistan

Objective: To determine the Pakistani patient characteristics & clinical presentation of Alkaptonuria (AKU) cases reported from Biochemical Genetics Lab (BGL) of Aga Khan University Hospital in Pakistan between 2013 and 2017 and its comparison with local data from Pakistan.

Methods: Reported cases of AKU diagnosed on basis of homogentisic acid excretion by GC-MS were retrieved. Their demographics and clinical data was collected from questionnaire for patients tested at BGL. Systematic review done from the database was independently searched by two reviewers for studies published in English from 1996 to 2017 on AKU and Pakistan. Eight studies were identified; Cochrane n=0, PubMed n=2 and HEC Digital Library n=1, Google Scholar n=8. Data for study design, year of study, demographic details, symptomatology and treatment prescribed was extracted.

Results: Nine cases diagnosed on urine organic acid analysis were reported from BGL in 3 years. Male to female ratio was (2:1). Mean age of presentation was 41 years, while 2 cases presented in first year. Consanguinity was present in 4 patients, while in rest of 5 patients information was not available. Urine darkening on standing, joint & skin involvement were seen in 3 and 2 patients respectively, while information was not available for the other 6 and 7 patients respectively. Systematic review showed 7 case reports and 1 literature review from Pakistan. Homogentisic acid in urine was performed by screening test such as Benedict's test, Ferric chloride test in all cases except one, where paper chromatography and photometry was performed. Late diagnosis was observed, with mean age of presentation at 41 years and one case each presented in 20s and infancy age groups. Almost all patients were harboring symptoms for 10-15 years. All patients had musculoskeletal symptoms; low back pain and stiffness followed by chronic knee joints pain.

Brownish-blackish osler spots on sclerae of eyes, bluish discoloration of pinnae were also reported in all patients. Apart from one patient with mixed renal stones, none of the patients developed any cardiac or renal complications associated with AKU. All patients were symptomatically treated with ascorbic acid, NSAIDS, avoidance of protein rich diet and physiotherapy. However, Nitosone, which is under clinical trials, was not offered to any patient.

Conclusion: Few cases have been reported till to date from Pakistan. However, diagnosis of 9 cases in a short time span of 3 years suggest significant disease burden. Lack of diagnostic facilities, non-consideration of AKU by physician due to lack of awareness are probable factors. There is a need to create awareness and early identification of patients.

Keywords: Alkaptonuria, Homogentisic Acid, Ochronosis

7.7 XERODERMA PIGMENTOSUM-A DNA REPAIR DEFECT AFFECTING THE WHOLE FAMILY

*Sayedullah Jan, Sadia Masood
Department of Medicine, Aga Khan University,
Karachi*

Introduction: Xeroderma pigmentosum (XP) is a rare autosomal recessive genetic disorder of DNA repair in which the ability to repair damage caused by ultraviolet (UV) light is deficient. Multiple basal cell carcinomas and other skin malignancies frequently occur at a young age in them; metastatic malignant melanoma and squamous cell carcinoma are the two most common causes of death in XP victims.

Case Report: Here we describe family with 6 siblings with 4 having xeroderma pigmentosum. Their parent had consanguineous marriage. Affected siblings had developed XP features soon after birth. They all had photosensitivity, sun burning, numerous lentiginos, premature aging, keratosis and cancerous growths for which they underwent excision. They also had ocular symptoms like decreased vision, conjunctivitis and ectropions and corneal scarring. There was no mental retardation. These patients also had severe rickets and osteomalacia causing bone deformity. They managed conservatively. Advised to avoid sun exposure and always use sunblock.

Discussion: Xeroderma pigmentosum is a hereditary disease manifested primarily on sun-exposed skin, which develops abnormal pigmentation and tumors,

mental retardation, areflexia, and other neurological abnormalities. Many patients at an early age from skin cancers. However, if a person is diagnosed early, does not have severe neurological symptoms or has a mild variant, and takes precautionary measures to avoid exposure to UV light, may survive beyond middle age. Constant educating to protect oneself from sunlight is paramount to the management of xeroderma pigmentosum.

Keywords: Genodermatoses, skin cancers, photosensitivity

7.8 EXOGENOUS OOCHRONOSIS - END RESULT OF SKIN LIGHTENING AGENTS

*Matiullah khan, Sadia Tabassum, Sadia Masood
Department of Medicine, Aga Khan University,
Karachi*

Introduction: Skin lightening agents are widely used in most Asian countries. The active ingredients in these cosmetic products are hydroquinone. Since these products are used for long duration, and under hot humid conditions, percutaneous absorption is enhanced. Hydroquinones lead to exogenous ochronosis (EO). It is a condition, which presents as skin hyperpigmentation mostly over sun exposed areas.

Case report: We present 2 cases of EO, who developed it after prolong use of skin whitening creams. One of them was a 45 year old dark skinned man and another was 48 years old female. Both of them used hydroquinone containing creams to lighten their skin complexion for about 2 years. Initially they developed small macules later hyperpigmentation worsened and involved large areas with multiple plaques. They started the creams to brighten their colour without consultation. Clinically diagnosed of EO made and they offered different options like microdermabrasion and skin peeling.

Discussion: Over the counter use of harmful skin lightening products can lead to harmful effects like EO that is difficult to treat and end up in psychological effects on patients affecting their quality of life. The diagnosis of EO requires early detection as it help in the discontinuing the use of such harmful products and to stop it earlier because of a lack of effective treatment modalities for EO. It is therefore critical for every physician to be aware of these complications.

Keywords: Whitening agents, Pigmentation, hydroquinones

7.9 NEXOS SYNDROME: AN INTERESTING CARDIO CUTANEOUS PRESENTATION

*Samra Kanwal, Sadia Masood, Saadia Tabassum
Department of Medicine, Aga Khan University,
Karachi*

Introduction: Naxos disease is a rare cardio cutaneous syndrome characterized by woolly hair, palmo planter keratoderma and cardiomyopathy. It was first reported by Dr Protonotarios in families originating from the Greek island of Naxos.

Case report: A 10 years old boy brought to dermatology clinic with history of palms and soles thickening nail changes, woolly hair since birth along with teeth abnormalities. On further inquiry he was a 4th child of consanguineous parents. On examination he has sparse curly hairs, diffuse palmoplantar keratoderma, dystrophic nails and oligodontia. His echocardiography revealed early cardiomyopathy. Rest of investigations were nremarkable. Scalp biopsy revealed angulated outline of hair shaft. On the basis of history, clinical and histological findings diagnosis of Naxos syndrome was considered. He was treated with topical keratolytics and emollients. Parents was counseled about the nature of disease and a regular follow up of this patient was advised.

Discussion: Naxos syndrome is a rare Genodermatoses with autosomal recessive inheritance. It is clinically characterized by woolly hair, palmoplantar keratoderma and cardiomyopathy. We reported a rare case of "Naxos variant" with nail and dental abnormalities, woolly hairs and keratoderma. Apart from Naxos, there are very few cases detected in other parts of the world. In adulthood, it is associated with cardiomyopathy and has adverse prognosis and primary goal of management is to prevent the sudden cardiac death.

Keywords: Keratodermas, woolly hairs, cardiomyopathy

7.10 ALSTROM SYNDROME - A CASE REPORT

*Najam-us-Saher
Department of Medicine, Aga Khan University,
Karachi*

Introduction: Alström syndrome is a rare autosomal multisystem recessive genetic disorder caused by mutations in the gene ALMS1, having a prevalence of

less than one per million. To date only approximately 500 cases have been reported in literature. The key features being childhood obesity, blindness due to congenital retinal dystrophy and sensorineural hearing loss. Associated endocrinologic features include hyperinsulinemia, early-onset type 2 diabetes, and hypertriglyceridemia.

Case Report: A 12 years old boy presented with history of gradual darkening of neck, flexures of arms, and body folds. The patient has a past history of pneumonia and febrile fits in infancy.

His family consisted of consanguineous parents and three siblings, two of which died in infancy (sister due to encephalocele & brother due to unknown cause). On examination he was found to be an obese boy with his body mass index (BMI) being 30.0 kg/m². He had a hyperactive behaviour, difficulty in concentration and learning disability due to defective vision associated with nystagmus and frequent blinking of the eyes. His visual field was restricted and there was pigmentary retinopathy in the periphery of retina. Systemic examination revealed hepatomegaly and underdeveloped genitalia with no pubic and axillary hair growth. Skin examination revealed acanthosis nigricans. Laboratory investigations show fasting blood sugar of 141 mg/dl, Hb A1C was 8.1%, insulin levels of 44 microU/m. OGTT showed a hyperglycemic curve. LFTs and GGT were raised. Urea, creatinine and electrolytes were within limits. Fasting lipid profile showed elevated Cholesterol (221 mg/dl), Triglycerides 272mg/dl and LDL 136 mg/dl. LH and Testosterone levels were decreased 0.36U/ml and 0.02 ng/ml respectively. X-ray right arm showed a bone age of 14 years. Ultrasound abdomen and pelvis showed hepatomegaly, right renal calculi, right retractile testis and microlithiasis in testes bilaterally. Audiometry revealed mild to moderate sensorineural deafness. Skin biopsy revealed orthohyperkeratosis and papillomatosis. Management included, dietary restriction, exercise, anti-hyperlipidemic (Metformin 500mg BD), red tinted glasses, advise for admission in Braille system and hearing aids along with referrals to endocrinologist, hepatologist and urologist. After six months of therapy, there was an improvement in lipid profile, blood glucose levels and acanthosis nigricans.

Discussion: Most of the cases of Alstrom Syndrome reported are from the west. Whether this is due to easier access to health care facilities is uncertain. Awareness of AS is lacking despite the complexity and potential lethality of this disorder.

Keywords: autosomal recessive, obesity, diabetes, sensorineural deafness

7.11 MYCOSIS FUNGOIDES PRESENTING AS KERATODERMA – AN UNUSUAL CLINICAL PRESENTATION

Rabia Mushtaq, Sadia Masood
Department of Medicine, Aga Khan University,
Karachi

Introduction: Mycosis Fungoides is the most common form of malignant cutaneous T-cell lymphoma. It was initially thought to be mycotic in origin but later it was classified as cutaneous T-cell lymphoma. It has adult male predilection though it also affects children.

Clinically it resembles other skin conditions such as eczema and psoriasis making it difficult to diagnose.

Case report: A 47 year male patient presented with complain of scaly, hyperkeratotic plaques involving the palms and soles, initially started as blackening of nails. It started 2 years back, later he developed scales, cracked and fissures over palms for which he applied topical agents but no relief in symptoms. For last 1 year he has similar plaques, scales and fissures on soles, with associated itching. There was no systemic symptom like fever, chills and weight loss. Skin biopsy showed Patch stage of MF.

Immunohistochemical stains showed CD3 positive, increased CD4 and decreased CD8. Rest of the labs were normal.

Discussion: Mycosis Fungoides is the most common form of Cutaneous T-cell Lymphoma. There are different forms of clinical presentation and progression of the disease. In our case, there was only palmoplantar keratoderma without any trunk or limb involvement. This presentation is quite unusual and rarely reported earlier. So in future whenever patient present with keratoderma, mycosis fungoides should always keep in differential diagnosis to manage and diagnose these patients at early stage.

Keywords: Keratoderma, palmoplantar, Mycosis fungoides

7.12 MYCOSIS FUNGOIDES PRESENTING AS VERRUCAE PLANA: AN UNUSUAL PRESENTATION

Palvisha Altaf Hussain, Dr. Saadia Tabassum, Sadia Masood
Department of Medicine, Aga Khan University,
Karachi

Background: Mycosis fungoides (MF) is the most common type of cutaneous T-cell lymphoma associated with an indolent clinical course. The incidence is 0.64/100000, clinically presenting as polymorphic patches or plaques and on histology the presence of lymphocytic infiltrate in papillary dermis being the earliest finding. It was first reported by Price and Hoffman in an elderly patient in 1977 (USA).

Available treatment options include topical corticosteroids, nitrogen mustard, phototherapy, and radiation therapy according to the stage of disease. Overall prognosis is variable depending mainly on clinical, histological and hematological features. We encountered an unusual presentation of Mycosis Fungoides with wart like lesions in a young girl.

Case: We report a 23-year-old female, known case of celiac disease, who presented with small brownish papular lesions that appeared like verrucae plana on her forearms for two years duration. She denied any pain, irritation or itching in the lesions, however, noticed increase in number during past 6 months. This patient had undergone electrocautery for these lesions one year back which failed to resolve them. Hence, this led us to the suspicion of considering another diagnosis.

The diagnosis of celiac disease was made in Aug 2016 and she is currently on gluten free diet. General physical and systemic examination was unremarkable and baseline workup showed Microcytic anemia of note. Histopathology of lesions showed mild acanthosis, focal low papillomatosis. Dermis exhibited marked fibrosis and moderate lymphocytic infiltrate tightly clustered around blood vessels. IHC stains showed positive CD3 and increased CD4:CD8 ratio. A diagnosis of Patch stage of MF was made.

Conclusion: We conclude that wart like appearance of MF lesions is a rare clinical presentation and should be kept in mind in any patient presenting with such lesions that are not responding to conventional therapy.

Keywords: mycosis fungoides, verrucae plana, unusual presentation

7.13

CAUSES AND OUTCOME OF STEVENS JOHNSON SYNDROME IN CHILDREN PRESENTING TO TERTIARY CARE CENTER

Saadia Tabassum¹, Arshalooz J. Rahman², Farwa Ayub³, Ambreen Sonawala³
Department of Medicine, ²Department of Pediatrics and Child Health, ³Medical college, Aga Khan University, Karachi

Background and Aim: Stevens Johnson Syndrome (SJS) is a common dreaded drug or infection related complication leading to extensive mucocutaneous involvement in severe cases with morbidity, mortality and long term complications. The aim of this study was to look into various causes and outcome of SJS in children presenting to our institute. We report certain medication group with a substantial number of non-drug related cases as well.

Method: This 10 year retrospective review was performed on all cases coming as Paediatric inpatients to the Aga Khan University Hospital. Variables like aetiology, clinical characteristics, treatment and outcome were entered on a predesigned profoma and frequencies were analyzed on SPSS 17.

Results: Total of 97 patients were analyzed, 69 (71.3%) presented with generalized rash (> 10 % of body involvement with mucositis) and 12 (12.3%) had localized disease (<10 % skin involvement) 16 (16.4) were categorized as category SJS /TEN overlap. Exposure to drugs N=77 (79.4%), and N=20(20.6%) as non-drug related. Out of drug group 46% were exposed to antibiotics, NSAIDS in 26%, 19% were antimalarial and 9% antiepileptic medication. Therapeutic interventions like intravenous steroids were given in 30%, IVIG 2% either alone or in combination with steroids and rest was managed with supportive care. 23.7% developed systemic complications (AKI 12.6%, sepsis 46%, pneumonia 13%, and one case developed ocular complication). Outcome was classified as fully resolved 10.6%, partial resolution 71%, and mortality 14.4%. Age <5yrs appeared as high risk group for drug related etiology and had more skin involvement and higher mortality n=9 (64%) as outcome.

Conclusion: Drug related SJS was predominantly attributed to antibiotics, antimalarial and antiepileptic drugs, however, non drug related presentations also contribute. Delay in recognition can lead to systemic complications morbidity and mortality.

Keywords: Stevens Johnson syndrome, drug related, outcome

7.14

THE AGONY OF HIVES AND IMPORTANCE OF MEDICAL-PSYCHOLOGICAL APPROACH

Sadia Masood, Rizwan Rafique, Saadia Tabassum
Department of Medicine, Aga Khan University, Karachi

Introduction: Quality of life in patients with Chronic Spontaneous Urticaria (CSU) is as compromised as in many other chronic diseases. The prolonged illness of CSU is associated with increased risk of anxiety and depression which may result in further worsening of overall physical health and their psychosocial status. Early detection of depression and anxiety may help in early intervention and better treatment outcomes.

Methodology: The aim of study was to evaluate the utility of psychological assessments (depression, impact on the quality of life, life events before skin eruptions) and to guide for appropriate treatment options . 146 diagnosed cases of CSU were assessed using AKU-Anxiety Depression Scale and Nottingham health Profile. A focus group discussion was conducted to give them better understanding about their issues along with solution.

Results: The incidence of depression found moderately high .Depression and anxiety were more frequent among patients with positive family history of mental disorders. The results of the evaluation showed that most of the patients experienced a stressor event within six months before onset of the cutaneous manifestation. Despite these results, very few patients accepted to be assigned to an appropriate psychological treatment.

Conclusion: Mental health is a neglected area in many parts of our country. Early intervention is required as it helps in reduction of cutaneous symptoms and decrease level of stress. We demonstrated the importance of medical psychological approach in chronic urticaria and also confirmed the resistance of psychosomatic patients to undergo psychological treatment.

Keywords: Chronic Urticaria, Depression, Anxiety

7.15 **PACHYONYCHIA CONGENITA ASSOCIATED** **WITH ANHIDROSIS- AN UNUSUAL CLINICAL** **PRESENTATION**

Masood Muhammad Karim, Sadia Masood, Najam Us Safer

*Department of Medicine, Aga Khan University,
Karachi*

Introduction: Pachyonychia congenital (PC) is a rare congenital autosomal dominant disorder. The predominant characteristics are painful palmoplantar keratoderma with underlying blisters along with nail dystrophy and hyperhidrosis. It is often accompanied by oral leukokeratosis, cysts, follicular hyperkeratosis and hyperhidrosis.

Case history: An eight years old boy presented with complaints of; itching and rashes all over the body since six months of his age. It is associated with discoloration and thickening of nails and generalized dryness especially at neck, back, dorsum of hands and feet. He hardly sweats even in extreme weather.

On examination he had angular cheilitis, leukokeratosis, and ichthyosis all around the body especially over forearm, shoulder, back, dorsum of hands and feet, along with focal keratoderma of palm and soles. Nails were thickened and discolored. Skin Biopsy was nonspecific. On the basis of history and clinical finding diagnosis of PC with anhidrosis was made and he was started on systemic retinoid and advised to follow up regularly.

Discussion: PC is a rare disorder presented with leukokeratosis, nail dystrophy, focal keratoderma and hyperhidrosis. We presented a unique case which presented with all features of PC along with anhidrosis, which is quite unusual finding in this case. Such case should be highlighted in literature because in future further research studies needs to be carried out for its different clinical presentation, and its association with other genetic disease.

Keywords: Anhidrosis, Focal keratoderma, nail dystrophy

Haematology and Oncology

8.1 REVIEW OF GENETIC MARKERS IN RELAPSED PAEDIATRIC ACUTE MYELOID LEUKEMIA

*Naveera Zafar, Kulsoom Ghias, Zehra Fadoo
Departments of Biological & Biomedical Sciences and
Oncology, Aga Khan University*

Background: The foremost reason for therapy failure in pediatric AML is relapse. Molecular and genetic aberrations play an important role in pediatric AML relapse and can be used as biomarkers to guide clinicians in treatment for improved prognosis.

Methods: A literature review was conducted to identify molecular mechanisms implicated in pediatric AML relapse. PubMed was used to search for articles published recently (2014 to 2017) using MeSH terms “acute myeloid leukemia”, “relapse”, “genes”, “cytogenetics”. Out of 21 articles retrieved for the pediatric population, 6 articles were excluded due to lack of relevance.

Results: Relapsed AML patients have poor prognosis, with different aberrations reported in different populations. One of the most frequently reported is FLT3-ITD, which is expressed primarily on hematopoietic progenitors and upon activation, phosphorylates cytoplasmic substrates. At diagnosis, subsets of leukemic blasts show homozygous FLT3/ITD genotype which dominates at relapse. The loss of DNMT3A results in hypomethylation of DNA in FLT3-ITD-associated leukemias. Coexistence of both FLT3-ITD and DNMT3A alterations is a poor prognostic factor after hematopoietic stem cell transplantation. The chimeric fusion protein EWSR1/ELF5, which inhibits the p53/p21 pathway, has also been implicated in refractory AML. Other pathways involved include tyrosine kinase and Ras/MAP kinase pathways that have concomitant phosphatase mutations. Other genes affected include CEBPA, VAF and TBP, RUNX1, NUP98-KDM5A, ASXL1 and ASXL2, PDK1. In addition, the miR-106b~25 cluster has been found to be upregulated in relapsed pediatric AML with MLL rearrangements.
Conclusion: Various genetic alterations and miRNAs have been implicated in relapsed pediatric AML in different populations. Molecular mechanisms underlying relapse in the Pakistani pediatric AML population still need to be investigated.

Keywords: acute myeloid leukemia, relapse, Genes

8.3 SOLID PAPILLARY CARCINOMAS OF BREAST; A DETAILED CLINICOPATHOLOGICAL STUDY OF 51 CASES OF AN UNCOMMON TYPE OF BREAST NEOPLASM

*Muhammad Usman Tariq, Romana Idrees, Madiha
Bilal Qureshi, Naila Kayani
Department of Pathology and Laboratory Medicine,
Aga Khan University*

Background: Solid Papillary Carcinoma (SPC) is one of the most challenging entities which have recently been discussed increasingly in the literature due the diagnostic challenges it poses to the pathologists. Despite being termed as carcinoma, they are staged as “in-situ tumors”. A proportion of these tumors exhibit invasion and the prognosis depend on the stage of the invasive component.

Objective: Our aim was to study the clinicopathological features of SPC which will be helpful in making their diagnosis and understanding their behavior.

Methods: We retrieved 51 cases of SPC diagnosed in our institution from January 2006 till August 2017. H&E stained slides of these cases were reviewed for various histological features.

Results: Patients’ age at presentation ranged from 20 to 87 years with mean±SD of 58.8±14.4 years. Palpable lump was the most common symptom which was followed by nipple discharge. Tumor size ranged from 1.2 to 9.5 cms with mean±SD of 3.7±2.1 cms. Most of the cases were graded as grade II (83%). Approximately 69% cases exhibited foci of invasion. DCIS was observed in 33.3%, mucinous differentiation in 15.7%, neuroendocrine differentiation in 7.8% and nodal metastasis in 11.8% cases. Higher histologic grade was significantly associated with invasion (p=0.029). Fourteen out of the 15 patients for whom the follow up was available were alive and tumor free with mean follow up duration of 33.6 months.

Conclusion: SPC have excellent clinical course despite invasion and lymph node metastasis. Therefore, they should be distinguished from frankly invasive papillary carcinomas.

Keywords: Breast Carcinoma, Papillary, Invasion

8.4 MYCOSIS FUNGOIDES; A CLINICOPATHOLOGICAL STUDY OF 60 CASES FROM A MAJOR TERTIARY CARE CENTRE

Muhammad Usman Tariq, Saira Fatima, Sabeehuddin Siddiqui, Hira Ishtiaq, Arsalan Ahmed
Department of Pathology and Laboratory Medicine,
Aga Khan University

Background: Mycosis Fungoides (MF) is the most common type of primary cutaneous T-cell lymphoma. The clinical presentation of MF mimics a number of dermatoses and therefore, the distinction becomes necessary. The diagnosis of MF is not straight forward as the histological features vary depending upon the site, age and stage of these lesions. **Objective:** Our aim was to study in detail the clinicopathological features of MF which will be helpful in making its correct diagnosis. **Methods:** We retrieved 60 cases of MF diagnosed in our institution from 2007 till 2016. H&E stained slides of these cases were reviewed for various histological features.

Results: Patients' age at presentation ranged from 24 to 84 years with mean±SD of 47±15 years. Majority (75%) of the patient were males. Erythema, either generalized (48.3.1%) or localized (15%) was the most common symptom, followed by scaliness (56.7%) and itching (46.7%) etc. Among epidermal changes, acanthosis was seen in 85% cases, focal spongiosis in 70%, focal parakeratosis in 66.7% and pauquier's microabscesses in 28.3%, cases. Most of the cases showed epidermotropism in the form of haloed cells scattered throughout the epidermis. Majority (56.7%) of the cases qualified for patch stage. The neoplastic infiltrate comprised of combination of small and intermediate sized cells with convoluted nuclei. Periadenexal distribution was also observed in 75% cases. The neoplastic cells were positive for CD3 immunohistochemical stain. CD4:CD8 was increased in 73.3% cases.

Conclusion: Careful examination of the skin biopsy with in-depth background knowledge of the histological features is mandatory for reaching a correct diagnosis. Without immunohistochemistry, the diagnosis of MF cannot be made and therefore it should be performed in all cases with epidermotropism.

Keywords: Mycosis Fungoides, Epidermotropism, CD4:CD8 ratio

8.5 ROLE OF HEALTH CARE PROVIDERS (HCPS) IN MANAGING THE SIDE EFFECT OF CHEMO DRUGS-STUDENT LED PROJECT

Aisha Suleman, Samina Akhter, Shahnaz Bibi, Roman Raees
School of Nursing and Midwifery, Aga Khan
University

Background: Oral mucositis is one of the major complications of patients undergoing chemotherapy and radiation therapy. Nearly 100% of the patients receiving radiation of head and neck, 40% patient receiving standard dose chemotherapy and 80% of patient undergoing hematopoietic stem cell transplantation experienced oral mucositis. Cytarabine, Doxorubicin, Etoposide (high-dose), Melphalan (high-dose), 5FU, Methotrexate if given in high doses can cause oral mucositis. Oral mucositis significantly complicates cancer treatment by contributing to pain, dysphagia, weight loss, depression, higher risk of infection, decreased quality of life, and increased healthcare costs (Oncology Nursing Society, 2010).

Objective: The aim of this project is to identify the knowledge of nurse's about oral mucositis, its pathogenesis, treatment modalities in terms of nursing and medical working at oncology unit at one of the tertiary hospital, Karachi, Pakistan.

Method: The data was collected from an oncology unit of a tertiary hospital in Karachi. In which 15 Registered Nurses (RNs), 4 Health Care Assistants (HCAs) and 2 Clinical Care Technicians (CCTs) were present. Data was collected by a self-developed questionnaire made by Post RN BScN Year I students during their Advance Concepts in Adult Health Nursing rotation. The tool comprises of 10 questions (MCQ based,), questions were asked such as what is mucositis, pathogenesis, mucositis assessment scale (MAS), medical, nursing management and finally importance of discharge teaching. After collecting baselines pre-test, participants have been given teaching using power point presentation, delivering of que card on MAS scoring, printed pamphlet of teaching for notice board. The same tool was then used as post-test.

Results: It has been identified that in pre-test, 47.6% staffs know about this serious complication of cancer treatment. In which 27.6% of RNs, 10% of HCAs, 10% CCTs were aware about the mucositis. However, after our education teaching session, the results were: 95% staff got the idea of mucositis, how they assess mucositis and they manage them. In which the results changed to: 55% of RNs, 20% of HCAs, 20% CCTs.

Conclusion: To summarize, as Nurses, HCAs & CCTs, working in oncology units it is very important to know about mucositis and how they can deal with it because it is life threatening complication for any cancer patient. **Keywords:** Mucositis, Cancer, Nurse's Knowledge

Keywords: Mucositis, Cancer, Nurse's Knowledge

8.7 SIGNIFICANCE OF SUPPORT GROUP MEETING FOR GYNAE CANCER PATIENTS

*Fouzia Amirali, Zarka Samoon
Department of Oncology, Aga Khan University*

SIGNIFICANCE OF SUPPORT GROUP MEETING FOR GYNAECOLOGICAL CANCER PATIENTS

Fouzia Amirali (Nurse Navigator Gynae Oncology),
Dr Zarka Samoon (Senior Instructor) Aga Khan
University Hospital Stadium Road Karachi
fouzia.amirali@aku.edu. zarka.samoon@aku.edu

Background: The diagnosis of cancer comes with a distress in an individual's life, and if it becomes a gynecological cancer it vanishes woman's feeling of identity and pride, many a times it also coincides with marital and emotional disturbances. While dealing with them in an outpatient clinic we regretted for not being able to give empathetically support and time they deserve by being the sufferer of this disease. It was decided to provide a platform where they can openly share their concerns, feelings and desires. What else could have been a better place than a support group? Support group improves quality of life, reduces anxiety and depression, increases coping skills, and helps symptoms management.

Method: We wanted to make patients feel positive and reflect same positivity to others; therefore this group was named as MIRROR and our slogan was "Live your Life like Never Before". Altogether we have arranged 4 support group meetings once every 6 weeks. Our speakers included Psychologist, yoga instructor, Dietitian, Beautician, Medical and Radiation Oncologists. Our meeting was divided into two halves; first half was educational and the other entertainment. We also developed a questionnaire to evaluate the participant's perceived effects of attending the support group. Thirty seven surveys were collected for analysis.

Result: Overall result suggested that patients were satisfied with the intervention they received. Out of 37patients, 35 attended it 2nd time and motivated others to attend this meeting. 70% of patient and get benefitted with the therapies taught by our yoga

instructor. 60% patients felt emotionally supported and motivated, 65% learnt skills that made a difference in their life. As this is only female based meeting, patients reported that they could openly and easily talk to other woman and health care professionals about sensitive issues like sexuality. Some of them reported that they felt content and enlightened after attending this group meeting.

Conclusion: This is the first attempt as there is rare data of having gynecological cancer support groups in Pakistan. Our patients are able to find some solace despite of the fear and agony they are going through. **Keywords:** Cancer, gynecological, support group

Keywords: cancer, gynecological, support group

8.8 PAPILLARY THYROID CARCINOMA WITHIN THYROGLOSSAL DUCT CYST: CASE SERIES AND LITERATURE REVIEW

*Haissan Iftikhar, Mubasher Ikram, Adnan Yar
Muhammad, Karim Rizwan Nathani
Medical College and Department of Surgery, Aga
Khan University*

Introduction: Thyroglossal duct cyst is the most common congenital anomaly in the neck and accounts for 7% of the adult population having it. Ectopic thyroid tissue is found the thyroglossal duct cyst wall in up to 65% of cases. This thyroid tissue has a potential to develop malignancy the most common of which is papillary carcinoma of thyroid. There are just over 270 cases of thyroglossal duct cyst malignancy reported in literature.

Objectives: We aimed to study our population to identify cases with malignancy of thyroglossal duct cyst.

Methods: A retrospective chart review was conducted in the section of Otolaryngology/Head and neck surgery at the Aga Khan University Hospital, Karachi from January 2004 to December 2014 on patients with the diagnosis of thyroglossal duct cyst.

Results: 58 patients were diagnosed with thyroglossal duct cyst. 2 of which were diagnosed with thyroglossal duct cyst carcinoma. Both the patients had papillary thyroid carcinoma on histopathology. Case-1 had an open biopsy before undergoing definitive surgery. Both the patients underwent subsequent total thyroidectomy after Sistrunk procedure and case 2 had selective neck dissection revealing lymph node metastasis.

Conclusion: Thyroglossal duct cyst carcinoma is a rare finding that comes as a surprise to both the patient and

the surgeon. We report two out of 58 cases diagnosed with thyroglossal duct cyst carcinoma.

Keywords: Papillary thyroid carcinoma, Thyroglossal duct cyst carcinoma, Thyroglossal duct cyst

8.9 UNUSUAL PRESENTATION OF DIFFERENTIATED THYROID CANCER METASTASIS

*Haissan Iftikhar, Mubasher Ikram, Adnan Yar Muhammad, Karim Rizwan Nathani
Medical College and Department of Surgery, Aga Khan University*

Introduction: Thyroid cancers are seen to be on a rise, specially in context of well-differentiated thyroid cancers. It could partly be due to newer diagnostic modalities like high resolution ultrasound that can pick up smaller lesions. Differentiated thyroid cancers with distant metastasis are not common, what's even rare is the initial presentation with complains not related to the neck.

Objectives: The objective of this series was to study and report the unusual presentation of patients with differentiated thyroid cancer presenting with distant metastasis. There is lack of data in literature on such cases and due to the rarity of such metastasis no definite treatment protocol is defined.

Methods: A retrospective chart review of 1200 cases of thyroid surgeries was done. 10 cases were identified who had well-differentiated thyroid cancer on final histopathology but had initially presented with usual complains to departments outside Otolaryngology.

Results: Six patients had papillary whereas four patients had follicular carcinoma on final histopathology. Two patients presented with iliac crest lesions, two with vertebral lesions one each with parapharyngeal mass, supraclavicular mass, labia majora swelling and bleeding, lung, rib and neck of femur lesion.

Conclusion: There still are no specific guidelines on how to address these patients with distant metastasis of differentiated thyroid cancer other than bone and lung lesions and on what treatment should be offered in case of recurrence. More studies are required on the subject.

Keywords: Thyroid Cancer, Metastasis, Unusual Presentation

8.10 DETERMINATION OF FACTORS ASSOCIATED WITH CRITICAL WEIGHT LOSS IN ORAL CAVITY CARCINOMA PATIENTS: A RETROSPECTIVE COHORT STUDY

*Haissan Iftikhar, Anwar Suhail, Karim Rizwan Nathani, Amna Urooba, Mohammad Sohail Awan, Noman Shehzad
Medical College and Department of Surgery, Aga Khan University*

Introduction: Critical weight loss is defined as an unintentional weight loss of > 5% at one month or >10% at six months at or from the start of treatment. Critical weight loss leads to deterioration in immune function and reduced tolerance to treatment (surgery +/- radiochemotherapy), it also leads to increased complication rates.

Objective: Critical weight loss defined as a weight loss of > 5% after one month or 10% after six months is not uncommon in head and neck cancer patients. We aimed to assess the factors associated with critical weight loss during the treatment of oral cavity squamous cell carcinoma patients.

Methods: A retrospective cohort study was carried out at the Aga Khan University Hospital, Karachi, Pakistan on 125 patients. Patients receiving adjuvant therapy were considered exposed and the outcome was critical weight loss. **Results:** The mean age of presentation was 46.9 +/- 12.8 years in patients undergoing surgery and adjuvant therapy with 119 (79.3%) males and 31 (20.7%) females. 112 (81.3%) patients developed critical weight loss at six months from the start of treatment and the only significant variable associated with critical weight loss was the stage of disease (p=0.03)

Conclusion: A large proportion of patients with oral cancer developed critical weight loss signifying a need for intervention. The overall stage of disease is a significant predictor of critical weight loss in patients under going treatment.

Keywords: Oral Cancer, Weight Loss, Nutrition

8.11 SCREENING FOR MALNUTRITION IN ORAL CAVITY CANCER PATIENTS PRIOR TO TREATMENT: A CROSS-SECTIONAL STUDY

Haissan Iftikhar, Anwar Suhail, Amna Urooba, Karim Rizwan Nathani, Zeeshan Sheikh
Medical College and Department of Surgery, Aga Khan University

Introduction: Malnutrition prior to the start of treatment in head and neck cancer patients has been reported up to 50%, this coupled with the extensive treatment these patients undergo; surgery and radiotherapy leads these patients into a vicious cycle of weight loss.

Objective: The objective of the study was to assess the incidence of pre-operative malnourishment in patients being treated for oral cavity squamous cell carcinoma.

Methods: A retrospective chart review was carried out at the Aga Khan University Hospital, Karachi, Pakistan on 62 patients. Nutritional screening was done pre-operatively through a standard nutritional assessment tool at the time of admission to assess for malnutrition.

Results: The mean age of presentation was 48.34 +/- 13.11 years, mean height was 165 +/- 8.62cm, weight 66.09 +/- 14.98 kg and BMI of 24.09 +/- 4.84. 82.3% were males and 17.7% were females. At the time of admission 19.4% (12) of patients were prone to malnourishment and 4.8% (3) of the patients were malnourished, assessed using a standardized nutritional assessment tool.

Conclusion: A significant number of our cohort was prone to malnourishment at the time of hospital admission. Oral cancer due to its location further aggravates the problem.

Keywords: Oral Cancer, Malnutrition, Nutrition

8.13 ASSOCIATION BETWEEN CYTOMEGALOVIRUS AND ORAL SQUAMOUS CELL CARCINOMA IN PAKISTANI PATIENTS

Hadika Mubashir, S. M. Adnan Ali
Medical College and Department of Surgery, Aga Khan University

Introduction: Oral Squamous Cell Carcinoma (OSCC) is the a highly aggressive cancer with a poor survival rate and accounts for 14% of all cancers in Pakistan. Risk factors for OSCC include use of tobacco, alcohol, betel nut and viral infections like Epstein Barr virus

(EBV). Cytomegalovirus (CMV) has been implicated in a wide range of head and neck cancers, however limited studies have been done identifying the role of CMV in OSCC. A Polish research showed a CMV prevalence of 10% (8 out of 80 patients) in OSCC patients while an Iranian research showed a prevalence of 6% (3 out of 48 patients). These studies could not establish an association between CMV and OSCC due to a small sample size. Objective: To find an association between Cytomegalovirus (CMV) infection and Oral Squamous Cell Carcinoma (OSCC) in Pakistani patients via a cross sectional study.

Materials and methods: Tissue samples were collected from 25 OSCC patients. DNA was extracted from the tissue samples and purified following which standard nested Polymerase chain reaction (PCR) to amplify CMV DNA was performed. Gel electrophoresis using 2% agarose was used to separate DNA fragments which were then visualized to identify CMV-DNA. Results were reported as frequencies.

Results: CMV DNA was present in 2 out of the 25 patients sampled (8%). Discussion: Based on preliminary data using the current samples, the prevalence of CMV in OSCC patients is in line with previous studies. The current sample size is too small to use in statistical analysis and identify any association. More samples are being collected as part of this ongoing project after which frequency of CMV in OSCC and tests of association shall be reported.

Conclusion: 2 out of 25 OSCC patients (8%) had concurrent CMV infection. Tests of association shall be performed after further samples are processed.

Keywords: Oral Squamous cell carcinoma, Cytomegalovirus, Polymerase chain reaction

8.14 CANCER AND HOW THE PATIENT SEES IT; PREVALENCE, MYTHS, NEGLIGENT LIFESTYLES AT A GOVERNMENT SECTOR HOSPITAL

Saira Saeed, Dr. Javaid Ahmad Khan, Dr. Nousheen Iqbal, Sana Irfan, Alvia Shafique
Medical College and Department of Medicine, Aga Khan University and Medical College, Jinnah Sindh Medical University

Objectives: The incidence of cancer remains high in our country despite advancements in diagnostics owing to neglectful lifestyles and myths associated with it. The data available on prevalence and patient perception regarding cancer stands limited. This study was aimed to investigate on common cancers at a

government sector hospital and to gain insight to patient knowledge of the disease.

Material & Method: This was a cross-sectional study conducted on 402 cancer patients from Jinnah Postgraduate Medical Centre. An informed consent was obtained from the patient. If a patient was unaware of the diagnosis, state of the disease was not revealed. A self-made questionnaire was used to assess cancer prevalence in our society, associated myths, and the most common risk factors per them.

Results: A total of 402 participant consented to participate. Mean age was 42.3 ± 15.07 years, 204(50.7%) were females and more than half 310(77%) were married. Majority were illiterate 190 (47.3%) belonging to poor socioeconomic class 111(27.6%). Biomass exposure was found in 147(37%), drug abuse in 132(33%) and smoking 63(16%). 103 (25.6%) presented with positive family histories. Primary site of tumor was breast in 100 (24.9%) followed by blood 74(18.4%). 208 (51.7%) patients presented with locally extended cancers and 265 (65.9%) were on chemotherapy. A fine majority of 376 (93.5%) reported of financial constraints owing to the disease. The commonest risk factor of cancer reported by patients were fate 328(82%), use of gutka 284(71%), injuries 282(70%). 222(55.5%) considered black magic and 236 (58.75%) considered evil eye as a risk factor for cancer too.

Conclusion: Maximum patients presented with breast cancer while the second most common were hematological. Ignorant lifestyles and addictions were found to be common; exacerbated by diminished knowledge of preventable causes of cancer and firm conviction in mythological causes like fate, black magic and evil eye.

Keywords: Cancer, Prevalence, Myths

8.15 QUALITY OF LIFE OF HEMATOPOIETIC STEM CELL TRANSPLANT SURVIVORS IN PAKISTAN

Nadia Mulji, Dr Raisa Gul, Khairulnissa Ajani, Dr Natasha.Ali

Department of Oncology and School of Nursing and Midwifery, Aga Khan University

Background: Hematopoietic stem cell transplant (HSCT) is a well-known aggressive therapeutic intervention for both the Congenital and the malignant disorders of the hematopoietic system. Though the survival rate of HSCT is well established in Pakistan yet the effectiveness of this treatment and its impact on

the quality of life of survivors in the context of Pakistan, remains unexplored.

Objective: The aim of the study was to explore the QOL of HSCT survivors in Pakistan.

Methodology: This study employed a qualitative descriptive design to explore the quality of life of HSCT survivors. The study setting was the bone marrow transplant outpatient clinics in two of the four centres of Pakistan, which included one private tertiary care hospital and one government tertiary care hospital. Using purposive sampling, a total of 12 participants were recruited for the study. The data was collected through a semi-structured interview guide.

Findings: Content analysis of the data led to three categories, with an overall theme "Getting back to normal". Corresponding with the research questions, the three categories elicited were: quality of life of HSCT survivors in Pakistan, challenges faced by survivors, and support system and coping strategies. The findings of the current study revealed that overall, the participants were positive about their QOL after the transplant; they felt grateful at having recovered from the disease. The findings also uncovered the challenges associated with transplant; these included pre-transplant, intra-transplant and post-transplant challenges. Although at varying levels, the survivors counted on several sources, including the family, the health care professionals' support, and self-efficacy to cope with these challenging experiences.

Conclusion: This study suggests strengthening the nurses' role to provide support to patients during the sensitive phase of treatment. Keeping in mind the long term fatigue and weakness, energy conserving and boosting strategies should be formalized.

Keywords: Quality Of Life, Hematopoietic Stem Cell Transplant, survivors

8.16 AUDIT ON INCIDENTS OF CHEMOTHERAPY EXTRAVASATIONS IN DAY CARE ONCOLOGY AT A TERTIARY CARE HOSPITAL IN KARACHI PAKISTAN

Arifa Aziz, Mohammad Khurshid, Afsheen Feroz, Zarka Samoon, Nadia Ayoub
Department of Oncology, Aga Khan University

Background Extravasations of cytotoxic agents after its intravenous administration results in a serious damage to the tissues leading to local injury and tissue necrosis, this leads to considerable morbidity. This audit was conducted to assess the knowledge of

nursing staff regarding identification and management of chemotherapy extravasations, in addition we also recorded number of incidents reported. Audit was conducted in day care oncology at Aga Khan University Hospital.

Method Core team was formulated and checklist was developed. Check points were initial assessment of cannulation site, how to manage extravasations if it occur, staff teaching to the patient. Incidents of extravasations were also recorded. Data was collected from 12thFeb till 15th June 2016. Total number of Cytotoxic drug administered during above said time was five thousands and four hundreds (5400).

Results Total numbers of twelve nurses were audited; out of twelve seven nurses (58.33 %) were not doing the assessment accurately in terms of asking questions and proper local examination and assessing areas of last intravenous cannulation site. Staffs teaching material about the management of extravasations were not available in oncology day care. Seven (0.12%) incidents of extravasations reported during the above said time. Audit results were shared with all the staff. Reinforcement of all the staffs was done to do accurate assessment of patients and take care of all the components while doing assessment for extravasations. Plan is made to re-audit process of assessment and management of chemotherapy extravasations after 12 months and to develop video on extravasations management for education of nurses.

Conclusion Chemotherapy extravasations can lead to significant morbidity. Its incidence can be reduced with prevention, prompt identification and management.

Keywords: Audit, extravasation incidents, staff training

8.17 STUDY ON ENVIRONMENTAL FACTORS CAUSING HEAD AND NECK CANCER IN KARACHI, PAKISTAN

*Arifa Aziz, yasmin Abdul Rashid, Zeenat.Shaheen,
Safia Awan*
Department of Oncology, Aga Khan University

Introduction: Head and Neck cancers are categorized among the top 10 malignancies worldwide. Pakistan falls into high risk geographical zone due to the prevalence of risk factors, late presentation and suboptimal treatment. The major risk factors are use of tobacco in the form of smoking, or chewing of mavas, khaini, paan, zarda, gutka, niswar, beetle nuts and Alcohol. In spite of many efforts in controlling this

disease its incidence is increasing with increase in misery of patients. As primary prevention is the only strategy for absolute control of Head and Neck carcinoma, so there is a great need of government to control and stop the supply of factors involved in head and neck cancer which are easily available in the market.

Objective: Head and neck cancer is one of the most prevalent cancers in South East Asia and its incidence is increasing with time. The objective of this study is to identify the environmental factors and their role in causing head and neck cancers and to bring into notice of government the commonest factors involved in head and neck cancers for their control and prevention.

Material and Method: Questionnaire form was developed, which includes questions about environmental factors causing head and neck cancer. Forms were filled by patients after explaining the study to them and taking their written consent. This study was conducted at day care Oncology and in Radiation department of Aga Khan University Hospital, after approval from institutional ethical review committee. It is a prospective study with time duration of 6 months from December 2016- June 2017. Inclusion criteria is patients with cancers belonging to head and neck region, aged 18 years and above, of any gender whereas; exclusion criteria is patients with cancers belonging to head and neck region but under 18 years of age, of any gender. SPSS ver.19 was used to perform statistical analysis.

Results: A total of 132 patients were included. Head and neck cancers are observed to be more common in male 101 (76.5%) as compare to females 29 (22%) and average age is 50.4 ± 12.9 years in both gender. The commonest environmental factor causing head and neck cancer includes pan, mainpuri, supari, gutka and tobacco chewing and out of 132 patients 77 (58.3%) were using them. Among all the head and neck cancers the most common is squamous cell cancer of buccal mucosa 63 (47.72%) and less common is the cancer of orbit 4 (3%).

Conclusion: Incidence of Head and neck cancer, specifically squamous cell carcinoma of Buccal mucosa is increasing day by day and after data analysis it is seen that the commonest causes are different forms of smokeless tobacco, pan, gutka, mainpuri and supari which are easily available in the market. The only way to control it now is to increase public awareness programmes and request government to stop their supply in the market.

Keywords: Buccal mucosa cancer, male incidence, Public awareness Programmes

8.18 FUTURE PROSPECTS OF THERAPEUTIC CLINICAL TRIALS IN ACUTE MYELOID LEUKEMIA

*Maliha Khan, Armaghan-e-Rehman Mansoor, Tapan M Kadia
Medical College and Department of Oncology, Aga Khan University*

Acute myeloid leukemia (AML) is a markedly heterogeneous hematological malignancy that is most commonly seen in elderly adults. The response to current therapies to AML is quite variable, and very few new drugs have been recently approved for use in AML. This review aims to discuss the issues with current trial design for AML therapies, including trial end points, patient enrollment, cost of drug discovery and patient heterogeneity. We also discuss the future directions in AML therapeutics, including intensification of conventional therapy and new drug delivery mechanisms; targeted agents, including epigenetic therapies, cell cycle regulators, hypomethylating agents and chimeric antigen receptor T-cell therapy; and detail of the possible agents that may be incorporated into the treatment of AML in the future

Keywords: AML, Clinical Trials, CAR T-cell therapy

8.19 PRACTICE OF THE GOLDEN HOUR

*Shoaib Siddiqui, Dr.Natasha Ali, Dr.Zarka Samoon,
Prof.Mohammad Khurshid
Department of Oncology, Aga Khan University*

Introduction and Objective: The development of febrile neutropenia during a course of chemotherapy is not only a life-threatening complication. Studies have demonstrated that patients with febrile neutropenia if not treated promptly experience a rapidly fatal outcome, most notably because of Gram-negative bacteremia. The objective of this study was to audit the compliance of institutional clinical practice guideline of administering antibiotics within one hour to a patient who presents with febrile neutropenia secondary to chemotherapy. *Subjects and methods:* Consecutive 48 patients presenting in ER were included in the study from July 2015 to April 2017. All age groups and genders were included. Variables analyzed were diagnosis, age, gender, type of malignancy, median time of receiving blood cultures

in the laboratory and median time of antibiotic administration.

Results: There were 48 eligible patients with median age of 54 years (range: 3 – 76 years). Male: female ratio was 1:0.92. There were 09 pediatric and 39 adult patients. The most common diagnosis was breast cancer followed by acute myeloid leukemia. Median time of blood culture sample being received in laboratory was 2:00 hours (range: 02:00 – 10:27 hours) and median time for antibiotic administration was 1:58 hours (range: 10 minutes – 8:45 hours).

Conclusion: Our results indicate delayed administration of antibiotics in patients with febrile neutropenia. The way forward is education and awareness of nursing staff and physicians regarding prompt management of these patients. A re-audit will be undertaken in six months to document improved practices.

Keywords: Febrile Neutropenia, Hour, Antibiotic

8.20 CLINICAL AUDIT TO ASSESS DELAYS IN CHEMOTHERAPY ADMINISTRATION AT DAY CARE ONCOLOGY CENTER AT A TERTIARY CARE HOSPITAL IN KARACHI, PAKISTAN

*Arifa Aziz, Mohammad Khurshid, Zarka.Samoon,
Afsheen.Feroz, Nadia Ayoub, Safia Awan, Madhia Beg
Departments of Oncology and Medicine, Aga Khan University*

Aim There were delays reported by patients in chemotherapy administration in day care oncology. Therefore we decided to audit all processes which are involved in chemotherapy administration. The objective is to improve our service by decreasing the time between admission and initiation of chemotherapy and identify the reasons for delays. *Methods* Audit was conducted in three parts. In Review I, audit tool was developed and information documented of 109 patients receiving chemotherapy at day care center from 14 April till 13 May 2015. Five processes were assessed out of which delay in initial assessment by the nurse was the only factor identified leading to delay in chemotherapy. Review II was done from 1st till 31st March 2016 of 208 patients after increasing the number of nurses and Review III from 7th June till 25th August 2016, of 287 patients by dividing the process at two different areas in order to decrease delay in initial assessment. *Results* Seventy two percent of patients had their initial assessment done within fifteen minutes of arrival in day care in the first audit. In second part of audit after

increasing number, this percentage decrease to 55% and finally in third part of the audit percentage was increased to 75% after separating initial assessment process into two areas ($P < 0.001$, Kruskal wallis test). *Conclusion* After separating initial assessment process into two different areas, delays in chemotherapy administration improved.

Keywords: Administration, Audit, Chemotherapy Delay

8.21 ENHANCING NOVICE NURSE COMPETENCIES AND PRACTICES IN BONE MARROW TRANSPLANT UNIT (BMT): AN EVIDENCE BASED QUALITY PROJECT

*Farhat Naz, Sumaira Sachwani, Kahif Shahzad,
Muniza Noordin, Naureen Allani
Department of Oncology, Aga Khan University*

Background: The hematopoietic stem cell transplant (HSCT) is an advanced treatment approach for a large number of malignant and nonmalignant hemopoetic diseases. The course of pre, post and intra transplant care is very complex which requires experience and additional sets of skills to be performed in order to prevent the patient from getting immediate and delayed complications. Due to frequent turn over in the oncology unit, it was observed that the nurses assigned in BMT unit were less experienced. In order to have outcome based approach, strategies were planned to address the need of enhancing nurse competencies who are working in BMT unit. *Purpose:* The purpose of this project was to enhance the knowledge and competencies of the nurses working in BMT unit and enable them to handle the fatal complications of the procedure.

Methodology: In this study observation and interview methodologies were adopted to assess the competences, knowledge and practice of novice nurses who were working in BMT unit. In observation, the team member assessed the practices of BMT staff by conducting frequent audits via Point Prevalence. Moreover the team members evaluated the knowledge by conducting the daily clinical round and asking the staff to present patient's case study. *Findings:* Around 70% staffs were novice and had inadequate knowledge about the BMT standard protocol. Essential unit based knowledge was missing such as awareness about the acute and chronic GVHD (Graft versus Host Diseases) in BMT unit *Interventions:* Five step Comprehensive Competency based module (CBM) for BMT staff has developed to enhance their knowledge and practice

Results: The staff who went under these comprehensive training were assessed in clinical area for transplant related knowledge and practices. Significant positive changes in knowledge and practices were identified among staff *Conclusion:* Research stated that bone marrow transplant has evolved over the period of time and it's considered as treatment of choice for certain diseases in certain conditions. The role of the nurse working in transplant unit is very imperative and can significantly affect patient's outcome. Well trained and compassionate nurse are required with clinical knowledge and skills to provide quality of care to the patients.

Keywords: Nurses, competency, HSCT

8.22 ENHANCING NURSING ASSESSMENT OF MUCOSITIS BY INTRODUCING STANDARDIZED MUCOSITIS GRADING SCALE FOR PATIENTS UNDERGOING CANCER THERAPY

*Farhat Naz, Kashif Shahzad, Sumaira Sachwani,
Muniza Noordin, Naureen Allani
Department of Oncology, Aga Khan University*

Background: Oral Mucositis is a common oral complication occurring among patient receiving chemotherapy, radiation therapy and undergoing bone marrow transplantation. It varies with different regimens but with certain therapies it can affect up to 80% of the patients. Oral Mucositis can cause significant clinical consequences, such as pain, malnutrition, and local and systemic infections. Moreover, it can cause both acute (Mucositis, saliva changes, taste alterations, infection, bleeding) and late toxicities (mucosal atrophy, xerostomia).

Purpose: The purpose of this project was to identify and establish a comprehensive guideline on assessment and management of alimentary canal complication (Mucositis) associated with chemotherapy.

Methodology: The methodology in this study used to identify the problem was reviewing initial assessment forms to see the specific grading scale used for the assessment. Moreover staffs dealing with such patients were interviewed to assess their knowledge about the grading scale and management the oral complication of chemotherapy *Findings:* it was identified that there was no specific grading scale being used to assess the severity of Mucositis associated with cancer therapy *Interventions:* In collaboration with School of Nursing Post RN students, a comprehensive session was arranged for the staff regarding the assessment and

management of patient with Mucositis. World Health Organization (WHO) Mucositis grading scale was introduced in the Unit in order to create unanimity for the assessment. To make staff compliant with the uniform assessment flyers were pasted in the unit and Q cards were provide to all the staff working in the oncology unit. Routine oral assessment prior and during chemotherapy, radiation therapy and bone marrow transplantation was being emphasized among staff by using the WHO grading scale Result: After the mentioned intervention it was found that unanimous assessment was being followed among the staff to assess the patient with oral and alimentary canal complications.

Conclusion: Prevalence for reported Mucositis is around 20 to 40 percent on average for patients receiving conventional-dose cytotoxic chemotherapy; however its statistics is as high as (up to 80 percent) in those undergoing hematopoietic cell transplantation (HCT) and in those who are receiving radiation therapy for head and neck cancer . Considering this huge statistics, assessment of the patient with Mucositis should be done by using appropriate grading scale so that timely interventions can be started.

Keywords: mucosistis, grading scale, WHO

8.23 MATRIX PRODUCING BREAST CANCER WITH CHONDROID DIFFERENTIATION

*Dr Quratulain Zulfiqar Ali, Dr Lubna Mushtaque
Vohra
Departments of Paediatrics and Child Health and
Surgery Aga Khan University*

A type of Metaplastic Breast Cancer (MBC) that has matrix producing properties is an infrequently occurring breast cancer and is responsible for less than 1% of the overall cases. MBC is mixed in nature, comprising of a blend of adenocarcinomatous and metaplastic components. The occurrence of MBC with chondroid differentiation is rarer and also a diagnostic challenge; warranting its presentation. A case of a 57 year old female is reported here, having a 4.3x3.3 cm mass palpable at the lower outer quadrant of the right breast. Upon performing a trucut biopsy, an infiltrating malignant tumor was found, with focal chondroid differentiation in the background of a chondromyxoid matrix suggesting a metaplastic carcinoma.

Keywords: Breast Cancer, MBC, chondroid

8.24 ISOLATED MYELOID SARCOMA-A CASE REPORT WITH LITERATURE REVIEW

*Shanila Ahmed, Munira Moosajee, Amber Rasheed,
Hasnat Sharif, Naila Kayani
Departments of Medicine, Oncology, Surgery and
Pathology & Laboratory Medicine, Aga Khan
University*

Background: Myeloid sarcoma (MS) also called Chloroma is an extramedullary aggressive tumor of immature granulocytic cells. It is rare disease entity most often associated with acute myeloid leukemia and less frequently with chronic myeloid leukemia, myelodysplastic syndromes and rarely presents as an isolated form. It is believed to be a variant of acute myelogenous leukemia AML. Clinical presentation of myeloid sarcoma is also very diverse, reflecting variation in location and size of MS lesion. So considering rarity of disease most of the study data is based on case reports and small retrospective case series that's why the clinical knowledge regarding its presentation and treatment is very limited, making its diagnosis a clinical challenge. This case report may contribute towards better understanding of the disease, however further prospective studies are required to elucidate the many remaining questions regarding the natural history, prognosis and optimal treatment strategies for this disease. To the best of our knowledge no such case report has ever been reported from Pakistan.

Case Report: We report an unusual case of isolated myeloid sarcoma of 34 years old gentleman in which mediastinal mass with pericardial and pleural effusion was the initial presentation. CT-guided biopsy of anterior mediastinal mass was obtained showing atypical cell infiltrate positive for LCA, myeloperoxidase (MPO) with a subset of cells positive for CD68, features favoring Granulocytic Cell Sarcoma though his bone marrow biopsy of iliac crest showed normal cellular lineages, iron findings, morphology and cytogenetics showing no involvement of bone marrow with the underlying sarcoma. After the establishment of diagnosis patient was planned for 7+3 induction chemotherapy with idarubicin and cytarabine followed by two cycles of consolidation with intermediate-dose cytarabine. On follow-up visits he was evaluated for disease response to chemotherapy which showed significant improvement-a good response to therapy.

Conclusion: Several studies have shown that most of the cases of myeloid sarcomas were initially misdiagnosed as aggressive lymphomas. In MS

including the isolated form AML-like intensive chemotherapy is associated with prolonged overall survival followed by bone marrow transplantation. However prospective controlled trials are required for further refine management decisions.

Keywords: Isolated myeloid sarcoma, pericardial effusion, cardiac tamponade

8.25

RELAPSED HODGKIN LYMPHOMA WITH CNS INVOLVEMENT-A RARE PRESENTATION

*Shanila Ahmed, Muhammad Raza, Ghulam Haider
Departments of Medicine, Pathology & Laboratory
Medicine and Oncology, Aga Khan University*

BACKGROUND: Hodgkin's lymphoma (HL) rarely involves central nervous system (CNS) and accounts for only 0.5% of HL cases, whereas CNS involvement can be seen in Non-Hodgkin lymphoma (NHL) patients up to 5-30%. CNS disease most often appears as relapse. We describe an additional case of 35 years old gentleman who had Hodgkin lymphoma and after 5 years presented to us with history of road traffic accident. His CT head revealed the incidental finding of space occupying lesion (SOL), biopsy of which showed features consistent with HL. Although CNS involvement is extremely rare but prompt diagnosis with early and appropriate therapy can cause complete remission of disease. It has been seen that patients in which disease is confined to brain has better prognosis. Treatment with radiation and chemotherapy is recommended. No such case has ever been reported in Pakistan. Less work has been done in our population in this regard as the disease is very rare. This case was unique in its presentation that prompts us to report the case. **CASE REPORT:** 35 years old gentleman, diagnosed case of Hodgkin lymphoma which was confirmed by cervical lymph node biopsy. He received multiple lines of chemotherapy after which there was complete remission of disease. He had road traffic accident after five years, because he became unconscious imaging was done and he was found to have right parietal space occupying lesion. He was planned for elective surgery and underwent resection of that space occupying lesion of brain. The specimen was sent for histopathology. Immunohistochemical stains were performed that showed atypical cell infiltrate positive for CD30, CD15 and PAX5 but negative for LCA, CD20 and CD3, features were consistent with Classical Hodgkin's lymphoma. **CONCLUSION:** Relapsed hodgkin lymphoma with CNS involvement is uncommon therefore space

occupying lesion (SOL) should always be investigated and biopsy of such lesions is essential to establish the diagnosis. The holocraneal radiotherapy in combination with chemotherapy is standard treatment. With early appropriate therapy complete remission can be achieved. However large scale studies are still required in order to understand the presentation, survival and treatment options for patients with CNS-HL.

Keywords: Space occupying lesion, Relapse Hodgkin lymphoma, Central Nervous System

8.26

EXPERIENCE OF THROMBOLYSIS WITH TISSUE PLASMINOGEN ACTIVATOR IN CRITICALLY ILL CHILDREN: A RETROSPECTIVE CASE SERIES

*Sidra Ishaque, Amna Afzal, Qalab Abbas, Anwar ul Haque, Humaira Jurair, Abdul Rahim Ahmed
Medical College and Department of Paediatrics and
Child Health, Aga Khan University*

Introduction: Venous and arterial thromboembolic events (TE) are increasingly recognized in infants and children with approximate incidence of 0.7 per 100000 . This increase is related to increasing survival of children with chronic complex problems, more use of central venous catheters in critically ill children as well as improved imaging modalities for accurate and timely diagnosis of thrombosis. Similarly to adults, these TE may cause serious long-term morbidity in children. Our specific goal was to assess efficacy of thrombolysis and bleeding risks across a range of tPA dosing.

Methods: This was a retrospective case series, conducted in pediatric intensive care unit (PICU) of Aga Khan University hospital. All children age 0 days to 16 years admitted in PICU who received tPA (dosage: 0.01-0.06mg/kg/hr) for thrombolysis were included in the study. Operational definitions were defined as: Clot Resolution: It was divided into three categories: i) None, ii) Partial resolution, iii) Complete resolution. Data was collected on a structured proforma. Data was entered and analyzed using SPSS version 20. Only descriptive statistics will be applied. **Results:** Seven children, (five males and two females) underwent thrombolysis with tPA during our study period. Three out of the seven children had intracardiac thrombi, whereas the rest had vascular thrombi. Amongst the intracardiac thrombi, two children with congenital heart disease had left ventricular thrombus, while one had a right sided

thrombus. The primary diagnoses in children with intracardiac thrombosis were Infective Endocarditis, Thalassemia Major and Post diphtheria myocarditis. Two out of the three children with intracardiac thrombosis expired, making intracardiac thrombus an important association with mortality. Complete resolution of the clot was noted in 6 patients (85%). Stroke was the major complication noted in a patient suffering from post diphtheria myocarditis, who had extensive right external iliac and right ventricular thrombus and eventually expired. No complications were observed in rest of the patients. The degree of clot resolution was not significantly related to age or tPA duration

Conclusion: Our case series provides an assessment of thrombolysis using tPA in the PICU. This case series is the first from the country and with complete clot resolution in six out of our seven patients, we can safely predict that tPA should be used for thrombolysis in children.

Keywords: Thrombolysis, tPA, PICU

8.27 EMBRYONAL RHABDOMYOSARCOMA OF ADULT NASOPHARYNX

Mehwish Shahzadi, Zarka Samoon, Yasmin Abdul Rashid
Department of Oncology, Aga Khan University

Abstract Introduction: Embryonal Rhabdomyosarcoma of the adult is a rare entity. Because of its aggressive nature and a high incidence of metastasis its outcome is poor. However with the combine use of chemotherapy, radiotherapy and surgery, overall 5 year survival rates have improved to more than 80% in localized disease.

Case Report: We present a case of a 51 years old lady who came with a four months history of nasal obstruction and hearing loss. Magnetic Resonance Image (MRI) of the head and neck revealed a mass in the posterior nasopharynx predominantly on the right side with extension to the right infratemporal fossa, para pharyngeal space and carotid sheath with bilateral involvement of cervical lymph nodes. The mass was causing blockage of both the Eustachian tubes. Nasopharyngeal biopsy showed poorly differentiated round blue cells. A diagnosis of embryonal rhabdomyosarcoma was confirmed by positive staining for Myogenin, CD99, and Desmin. Combination chemotherapy with VAC (Vincristine, Adriamycin and Cyclophosphamide) regimen followed by Concurrent chemo radiation was completed in five months.

Patient achieved complete metabolic response after four cycles of chemotherapy. Scans done at the end of therapy also showed the complete resolution of the mass. Now patient is on surveillance.

Conclusion: Adult nasopharyngeal Embryonal rhabdomyosarcoma although a rare and highly aggressive tumor can be cured with the combined use of radiotherapy and surgery.

Keywords: Chemotherapy, nasopharynx, rhabdomyosarcoma.

Keywords: Rhabdomyosarcoma, NASOPHARYNX, cHEMOTHERAPY

8.28 OVEREXPRESSION OF EGFR IN ORAL PREMALIGNANT LESIONS AND OSCC AND ITS IMPACT ON SURVIVAL AND RECURRENCE

Yumna Mirza, Dr Syed Muhammad Adnan Ali, Dr Muhammad Sohail Awan, Dr Nida Zahid, Sana Naeem
Department of Surgery, Aga Khan University

Purpose: Oral squamous cell carcinoma (OSCC) the sixth leading cancer worldwide ranks as the most common cancer in males, and the third most common in females in Pakistan. It is influenced by risk factors which are widely consumed in our population. The epidermal growth factor receptor (EGFR) is a tyrosine kinase receptor that is imperative for cell signalling, growth and differentiation. It is mutated and overexpressed in a variety of cancers, while in OSCC it has been linked to poor patient survival; premalignant to malignant transformation and recurrence. This study investigates the use of EGFR as a prognostic factor for OSCC.

Materials and Methods: Premalignant (n=29) and OSCC (n=100) formalin-fixed paraffin-embedded tissues were retrieved from the surgical archives of Aga Khan University Hospital (AKUH). Immunohistochemistry for EGFR overexpression was performed using monoclonal antibody on both groups. EGFR expression was correlated with habits of risk factor consumption, clinicopathologic features and 5-year survival and recurrence.

Results: 15/29 premalignant and 67/100 OSCC patients had overexpressed EGFR. The upper/lower lip had the highest EGFR positivity among all premalignant sites of lesion (p=0.041). In OSCC patients, those who had EGFR overexpression had worse 5-year survival (univariate: p=0.048, multivariate: p=0.056) and higher chances of recurrence (univariate: p=0.01, multivariate: p=0.004) as compared to EGFR negative patients.

Conclusion: EGFR is a viable candidate for an OSCC prognostic marker since its overexpression leads to poor survival and markedly increases the chances of recurrence.

Keywords: OSCC, IHC, EGFR

8.29

IMPACT OF COX2 OVEREXPRESSION ON 5-YEAR AND DISEASE FREE SURVIVAL OF OSCC PATIENTS OF PAKISTAN

*Syed Muhammad Adnan Ali, Muhammad Sohail Awan, Yumna Mirza, Sana Naeem, Nida Zahid
Department of Surgery, Aga Khan University*

Objective: Worldwide, oral cancer accounts for 1-4% of all cancers, with high prevalence in Southeast Asian countries, particularly in Pakistan. Almost 90% of oral cancer constitutes of Oral Squamous Cell Carcinomas (OSCC) which originates in the tissues lining the lips and mouth. Cyclooxygenase 2 (COX2) is a rate-limiting enzyme that is upregulated in many cancers. It is involved in angiogenesis, apoptosis and metastasis of neoplasia. The aim of our study was to observe the expression of COX2 in OSCC and correlate the expression with patient's overall survival (OS) and disease free survival (DFS).

Materials and Methods: A total of 100 OSCC patient cases were selected. Immunohistochemistry for COX2 was performed on formalin-fixed paraffin-embedded (FFPE) tissue sections. All patients gave written informed consent before participation and ethical approval was obtained from Ethical Review Committee of Aga Khan University Hospital.

Results: Out of a total of 100, 55 specimens were positive for COX2 overexpression. Moderate staining was observed in 29 specimens, followed by 20 mild and 6 strong positives. The univariate analysis evidenced an association of COX2 with DFS ($p=0.001$) and OS ($p=0.013$). The multivariate analysis revealed no independent effect of COX2 on OS ($p=0.208$). However, COX2 expression was significantly associated with DFS ($p=0.044$).

Conclusion: COX2 overexpression can be used to predict OSCC patient prognosis, more specifically, their disease free survival.

Keywords: OSCC, IHC, COX-2

8.30

CANCER REGISTRIES: PAVING NEW WAYS FOR CANCER RESEARCH

Saadia Pervaiz, Saman Haider, Quratulain Ali, Adnan A Jabbar

Department of Oncology, Aga Khan University

Introduction: Cancer is a complex set of diseases that poses challenge to the society at multiple levels. It requires both public health experts and clinical care providers and the participation of a broad range of institutions for its effective control. Cancer Registries have a significant role in maintaining cancer data which provides insight into better diagnosis and treatment, the contributing factors towards the disease and its outcomes. AKUH has a robust hospital based registry that captures this data. The purpose of this study was to identify the burden of cancer patients presenting at AKUH between 2012 till 2014

Method: Data was retrieved using CNExT software to analyze number of cancer patients from 2012-2014.

Results: Total 11,634 cancer cases presented between 2012 till 2014. The number of cases presenting each year were 3610, 3834 and 4190 respectively. Out of those from which data have been retrieved by the registry, the numbers of cases abstracted each year were 2442, 2629 and 3178 respectively. The morphologies recorded from these cases were: Malignant 7827 (67.27%), In-situ 53 (0.45%), Benign 316 (2.71%) and Uncertain 54 (0.46%). The trend from 2012-2014 of each of these four morphological sub-types have not changed. The three most common cancers were Breast 493 (13.65%), 564 (14.72%) and 571 (13.63%), Head and Neck 393 (10.88%), 415 (10.83%) and 566 (13.51%) and Hematologic 413 (11.44%), 357 (9.32%) and 397 (9.47%) respectively. The other common cancers were Genitourinary 346 (9.58%), 256 (6.68%) and 358 (8.54%), Gynaecological 250 (6.92%) and 256 (6.68%) in 2012 and 2013. Gastrointestinal cancers 267 (6.37%) appeared among most frequent cancers for the first time in 2014. **Conclusion:** Cancer registry is a useful tool in acquiring information regarding the burden of cancer presenting at AKUH.

Keywords: Morphologies, Malignant, CNExT

8.31

ASSESSING NURSES' KNOWLEDGE AND SKILLS ON IDENTIFICATION AND MANAGEMENT OF CYTOTOXIC INDUCED EXTRAVASATION IN ONCOLOGY DAY CARE IN A TERTIARY CARE HOSPITAL- VIA CLINICAL AUDIT.

*Afsheen.Amin, Sumaira Sachwani, Nadia Ayoub, Muniza Noordin, Dr Arifa Aziz
Department of Oncology, Aga Khan University*

Background and Objective: Incidences of extravasations are being monitored as a key quality indicator in oncology areas, however to work more towards precision, a need for assessment of knowledge and hands on capacity of nurses in identifying and early managing of cytotoxic extravasation was identified. Clinical Audit was the identified strategy for assessment, with the help of existing best practice institutional guideline, checklist was being developed; piloted on oncology nurses not working in day care oncology, and validity was gained. A clinical audit was performed from 15th July, 2016 to 5th August, 2016, in which initially observation was made on nurses' assessment of 48 cytotoxic administration follow-up patients. In second phase staffs were being asked to demonstrate management of extravasation in simulated based setting.

Results: Around 82% of patients were being assessed for condition of last cannulated site, however only 3% of discoloration of IV sites were identified and being notified to physicians on floor. On hands on management of extravasation only 70% of nurses were able to aspirate residual cytotoxic from skin and 30% were comfortable in injecting hydrocortisone at extravasated site.

Conclusion: A strong need for hands on training for extravasation assessment and management is being identified for oncology nurses. Video based and simulated based learning can be taken as a strategy for training of oncology nurses on rare occurring situations like extravasation.

Keywords: Extravasation, identification, and management

8.32

SERUM HEPcidIN-25: A PREDICTOR OF RESPONSE TO ORAL IRON THERAPY

*Ghazala Farrukh, Adnan Zubairi, Amal kamal, Syed Tauseef Ahmed
Departments of Biological & Biomedical Sciences and Pathology & Laboratory Medicine, Aga Khan University*

Abstract Background: Discovery of hepcidin, and its receptor, in year 2000 has revolutionized iron metabolism studies. Measurement of serum hepcidin, may supplement existing investigational parameters of iron status in anemias.

Objectives: To estimate baseline hepcidin level and evaluate it as a predictor of response after treatment with oral iron in iron deficiency anemics.

Methods: This was a purposive follow up study; involving 102 patients aged 18 years and above selected from medical outpatient departments of a tertiary care hospital of Karachi. Baseline CBC, iron studies, and serum hepcidin-25 were measured. Patients of IDA were treated with oral ferrous sulphate 200mg thrice daily for 8 weeks. Repeat CBC on follow up visit assessed Response, defined as increment in hemoglobin level by >1gm/dl posttreatment. Logistic regression analysis was applied and receiver operating characteristics curves were plotted to find utility and identify hepcidin cutoff values as a predictor for response.

Results: Mean baseline serum hepcidin-25 was 37.34 ± 22.60 ng/mL. Regression models showed for every one unit increase of hepcidin, the odds of hemoglobin improvement decreased by $(1 - 0.972) = 0.028$ gm/dl, serum hepcidin-25 by itself significantly predicted improvement in hemoglobin level $P =$

Keywords: serum Hepcidin -25, ELIZA, Biopredictor of iron therapy response

8.32

SERUM HEPcidIN-25: A PREDICTOR OF RESPONSE TO ORAL IRON THERAPY.

*Ghazala Farrukh, Adnan Zubairi, Amal kamal, Syed Tauseef Ahmed
Department of Biological & Biomedical Sciences and Pathology & Laboratory Medicine, Aga Khan University*

Abstract Background: Discovery of hepcidin, and its receptor, in year 2000 has revolutionized iron

metabolism studies. Measurement of serum hepcidin, may supplement existing investigational parameters of iron status in anemias. Objectives: To estimate baseline hepcidin level and evaluate it as a predictor of response after treatment with oral iron in iron deficiency anemics. Methods: This was a purposive follow up study; involving 102 patients aged 18 years and above selected from medical outpatient departments of a tertiary care hospital of Karachi. Baseline CBC, iron studies, and serum hepcidin-25 were measured. Patients of IDA were treated with oral ferrous sulphate 200mg thrice daily for 8 weeks. Repeat CBC on follow up visit assessed Response, defined as increment in hemoglobin level by >1gm/dl posttreatment. Logistic regression analysis was applied and receiver operating characteristics curves were plotted to find utility and identify hepcidin cutoff values as a predictor for response. Results: Mean baseline serum hepcidin-25 was 37.34±22.60 ng/mL. Regression models showed for every one unit increase of hepcidin, the odds of hemoglobin improvement decreased by (1-0.972)=0.028gm/dl, serum hepcidin-25 by itself significantly predicted improvement in hemoglobin level P=

Keywords: serum Hpcidin -25, ELIZA, Biopredictor of iron therapy response

8.33 OVEREXPRESSION OF EGFR, CYCLIN D1, COX-2 AND P53 IN GLIOBLASTOMA PATIENTS OF PAKISTAN

*Dr Syed Muhammad Adnan Ali, Syed Ather Enam, Yumna Mirza, Nida Zahid, Sana Naeem
Department of Surgery, Aga Khan University*

Glioblastoma (GBM) is the most lethal brain tumour in adults, presenting with a bleak prognosis of 15 months even after multimodal treatment involving surgery, chemotherapy and radiotherapy. The five-year survival rate for this tumour is currently 5.5% despite efforts at developing better diagnostic and treatment methods. One of the treatment approaches currently under research is targeted therapy of these patients using monoclonal antibodies or inhibitors to certain biomarkers that are overexpressed in GBM and other related cancers. Such biomarkers include epidermal growth factor receptor (EGFR), cyclooxygenase-2 (COX-2), cyclin D1 and p53. These biomarkers have been found to be overexpressed in cancer patients, GBM and otherwise, and their overexpression has been linked to poorer patient prognosis, resistance to

conventional cancer therapy and increased malignancy. The aim of our study was to investigate the expression of these markers in GBM patients of Pakistan and correlate their expression with overall survival. Formalin-fixed paraffin-embedded specimens of 83 patients (from the years 2014-2015) were selected based on the presence of complete clinical information, follow-up data and informed written consent. Ethical approval was given by the Ethical Review Committee of Aga Khan University Hospital. Immunohistochemistry was performed for all selected markers using monoclonal antibodies. EGFR was overexpressed in 52%, COX-2 in 55%, Cyclin D1 in 48% and p53 in 40% of all cases. The Phi-coefficient revealed little to no correlation among these genes. Kaplan-Meier analysis did not result in any significant difference in survival times for patients who overexpressed and those who did not overexpress these biomarkers (p>0.05). Univariate and multivariate analysis were also performed to check for the association of any marker, either in conjunction or singly, with overall survival. Only age was significantly associated with overall survival for GBM patients (univariate p=0.037, multivariate p=0.041). We conclude that these markers are overexpressed in GBM patients. However, this overexpression was not found to lead to worse overall survival and any effect of these markers on patient prognosis was not found.

Keywords: GBM, Biomarkers, IHC

Health Education

9.1 ALMOND CONTAINS MORE MAGNESIUM THAN SPINACH

Naila Afshan, Shela Khan, Samina Jinnah, Uzma Perveen, Mehak Nawaz, Rufaida Raiz Ali, Nosheen Alam, Shakeeba Baqidar, Syeda Sharif, School of Nursing and Midwifery, Aga Khan University

Almond contains more magnesium than spinach
Investigators: Naila Afshan, Shehla Khan (Supervisor) Uzma Parveen, Mahak Nawaz, Samina Jinnah, Nosheen Alam, Syeda Sharif , Rufaida Riaz Ali, Shakeeba Baqidar Aga Khan University, school of nursing and midwifery
Introduction: Although the mineral magnesium is widespread in the diet, it can be difficult to get as much as you need, because most foods contain only tiny amounts. Some foods, such as almonds, beans and leafy green vegetables, are particularly high in magnesium. If you are trying to meet your daily requirement without taking supplements, it helps to include these magnesium-rich foods in your diet every day. Magnesium helps maintain normal muscle and nerve function, keeps heart rhythm steady, supports a healthy immune system, and keeps bones strong. Magnesium also helps regulate blood sugar levels, promotes normal blood pressure, and is known to be involved in energy metabolism and protein synthesis. It is a cofactor in more than 300 enzyme systems that regulate diverse biochemical reactions in the body, including protein synthesis, muscle and nerve function, blood glucose control, and blood pressure regulation.
Hypothesis: Almond contains more magnesium than spinach
Method: This study aims to compare the amount of magnesium in spinach and almond by titration method. We completed a series of readings for each sample using Standardize titration methods. Result: The result analysis shows that spinach is rich in magnesium than almond.
Conclusion: According to the hypothesis it was stated that almond contains more magnesium than spinach but when experimentation was done we came to know that spinach contain more magnesium than almond. Raw spinach, along with other leafy greens, are good sources of magnesium. One cup of raw spinach contains 24 milligrams of magnesium. The daily value for magnesium is 400 milligrams, and a cup of raw spinach provides 20 percent of the daily value based on a 2,000-calorie diet.

Keywords: health education, magnesium, spinach

9.2 ENGAGING RESIDENTS IN LABORATORY FOR ACTIVE LEARNING

*Bushra Moiz, Syeda Kausar Ali
Departments of Pathology & Laboratory Medicine and Educational Development*

Background Workplace based assessments e.g. Mini-CEX and DOPS have been employed across a range of medical specialties. However, no instrument for workplace based assessments for residency programme in Pathology could be found. The acquisition of laboratory skills is one of the essential goals of postgraduate haematology training. However, faculty time constraint in a service-heavy laboratory does not allow for direct teaching and observation. This study was conducted to develop and validate an instrument for Direct Observation of Laboratory Skills (DOLS) of residents in the discipline of Pathology. Method After approval from Aga Khan's Ethics Committee, this study was conducted at the AKUH, which is a tertiary care academic hospital. Ten Haematology residents from Years 1-5 were sampled. Four lab tests were selected for observation. All residents had performed the laboratory tests to be observed at least 1-4 times before DOLS was conducted. Each resident was evaluated by three faculty members in Haematology during each encounter. Performance was rated on a seven-point DOLS scale. SPSS version 22 and Stata Version 12 were used for data analysis. Construct validity and inter-rater reliability was computed using spearman correlation and interclass correlation respectively. Effect size was calculated using Cohen's d while Generalizability coefficient G was computed using ANOVA. Feedback from residents regarding the process of formative assessment was also analysed, and the results tabulated as learner satisfaction. Feasibility was determined by obtaining rater satisfaction and time spent in observation and feedback. Cost was determined on the basis of consumable, stationery and time. Results A total of 120 encounters were observed. Overall mean total score $\pm 1SD$ was 56.74 ± 12.44 (minimum-maximum: 27.08-66.67). The score was lowest at 2.98 ± 1.22 in technical skills while highest in professionalism (3.93 ± 0.25). 'Total score' and 'overall performance' obtained by residents were moderately correlated with the 'number of laboratory procedures previously performed' by them ($r = 0.658^{**}$ and 0.641^{**} ; p -value=0.01). Inter-rater reliability was high for assessors (ICC A1 =0.95 (95% CI: 0.92-0.98) and low for DOLS (0.64; 95% CI: 0.54-0.75). This improved to 0.70 (0.60-0.80) on deleting two items having low

inter-item correlation. Cronbach's alpha was high at 0.989. Cohen's d was 1.64 which was a large difference in practical sense. Estimated variance component was highest for residents (73.32%) and was negligible for assessor*lab test interaction (0.01). G Coefficient was 0.931 with one assessor examining five procedures. The process was rated 5-6 on a 7-point scale by the residents showing their 'above average' satisfaction in DOLS. Mean time (\pm 1SD) taken by three assessors for observing was 13.17 \pm 5.76 minutes and for providing feedback was 4.72 \pm .66 minutes. Cost of conducting DOLS was estimated at PKR 2675 or 25\$. Conclusion The study found that newly developed DOLS provided evidence for construct validity and reliability of scores for observing laboratory skills of residents. Both assessors and the residents reported high level of satisfaction with DOLS usage. DOLS will provide a high reliability even if residents are observed by one assessor on five procedures. Cost for implementing DOLS can be reduced by incorporating DOLS as a part of routine bench work.

Keywords: Laboratory skills, residents, hematology

9.3

FREQUENCY AND FACTORS ASSOCIATED WITH ADULT IMMUNIZATION IN PATIENTS VISITING FAMILY MEDICINE CLINICS AT A TERTIARY CARE HOSPITAL, KARACHI.

Samar Zaki, Asma Usman, Swaleha Tariq, Sameena Shah, Waris Qidwai, Iqbal Azam, Kashmira Nanji
Departments of Family Medicine and Community Health Sciences, Aga Khan University

Introduction: Vaccines are some of the safest medicines available for prevention of communicable diseases, yet most adults fail to receive any vaccines as recommended, resulting in illness, long-term suffering and even death. **Objectives:** To determine the frequency and factors associated with adult immunization in patients visiting family medicine clinics at a tertiary care hospital in Karachi **Design:** Cross sectional survey. **Patients and Methods:** A pre tested questionnaire was used to collect information after written informed consent. Data was entered and analyzed in statistical software SPSS. All of the analysis was two tailed, and p values of 0.05 or less was considered significant. **Results:** A total of 340 patients were surveyed. The majority were female (69.5%) with a mean age of 35.47 years. Majority were married (61.1%) and with graduate (30%) and post-graduate education (20%). A majority believed

that vaccines can be used in adults to prevent disease (62.2%). 58.1% believed that Hepatitis B vaccine, 29.9% believed that Influenza vaccine and 33.8% believed that Hepatitis A vaccine can be given in adults. The major source of their information regarding vaccination in adults was friends/relatives (25%) and media (23.2%). Regarding availability of vaccines, 71.3% thought that Hepatitis B vaccine, 54.9% thought that Tuberculosis, 49.3% thought that Tetanus Toxoid is available. Only 36.4% respondents received any vaccine in their adulthood. Majority (62.2%) received Hepatitis B vaccine in adulthood. The major reasons given for not receiving vaccines were lack of awareness (62.4%). **Conclusion:** Low adult vaccination coverage rates and awareness as highlighted by the results of this study shows the dire need to address this major preventive strategy. This information can be utilized to conduct larger community based surveys in future, to conduct health awareness sessions in the community and to educate our doctors regarding the availability and benefits of adult vaccines.

Keywords: Adult, Immunization, Awareness

9.4

A PROSPECTIVE EVALUATION OF THE BEDSIDE INDEX (BISAP) V/S RANSON SCORE IN ACUTE PANCREATITIS ASSESSING SEVERITY IN PATIENTS COMING TO EMERGENCY DEPARTMENT."

Emaduddin Siddiqui, Nazir Najeem Kapadia
Department of Emergency Medicine, Aga Khan University

Background Acute pancreatitis is one of the most common causes of abdominal pain presenting to the emergency department¹, with the most common triggering factor being gall stones². In most cases it is self-limiting, and requires no specific treatment; but however in 20% to 30% of cases a severe disease that can progress to multi-organ failure, and potentially death^{2,3}. Therefore, a reliable risk stratification tool to predict the severity and prognoses of AP is of great clinical importance for the management of this disease. An ideal scoring system should be early, quick, simple, accurate, and reproducible description of disease severity.

Objectives To determine diagnostic accuracy of BISAP and Ranson score in predicting mortality in acute pancreatitis in patients presenting to Emergency Department.

Methods Setting: Department of Emergency Medicine AgaKhan Hospital Study design: Cross Sectional

Study Sample size: By using Pass sample size calculated taking statistics for sensitivity as 71.5% and specificity as 99.1% and prevalence 31.25% the calculated sample size will be 136. **Sampling technique:** Non-probability consecutive sampling **Inclusion criteria:** All patients above 16 years to 75 years presenting with acute Pancreatitis as per the definition of having an amylase or lipase thrice the normal value. (amylase 28-100 IU/L and lipase 6-51 IU/L) **Exclusion criteria:** • Patients with CKD, Tumor lysis syndrome and CLD • Patients referred from other hospital after 1-2 days of diagnosing acute Pancreatitis • LAMA before 48 hours. **RESULTS** (ongoing) BISAP score is anticipated to predict same severity as done by conventional RANSON score in a more timely fashion to predict outcomes early. **Conclusion** There is no difference in BISAP or RANSON predicting severity in acute pancreatitis.

Keywords Acute Pancreatitis, Severity score, RANSON score, BISAP score

9.5

THE ASSOCIATION OF BODY COMPOSITION WITH QUALITY OF LIFE IN ADULT PATIENTS WITH END STAGE RENAL DISEASE ON HEMODIALYSIS VISITING A TERTIARY CARE HOSPITAL IN KARACHI.

Sobiya Sawani, Romaina Iqbal, Iqbal Azam, Subhash Chandir, Waqar Kashif
Department of Community Health Sciences, Aga Khan University

Background In hemodialysis patients a large body size is associated with poor quality of life (QOL). It is not clear whether body fat or muscle mass confers a better QOL. In this study, we hypothesized that increased muscle mass and lower body fat percentage are independently associated with a better QOL score. **Methods** An analytical cross-sectional study was conducted on 72 patients, visiting Aga Khan University Hospital (AKUH) twice or thrice per week for HD. These patients underwent a detail assessment of body composition. Socio-demographic and medical related information was also collected. Quality of life (QOL) was assessed using WHOQOL-BREF questionnaire. Multiple linear regression was carried out for statistical analysis.

Results Out of 92 ESRD patients 72 were recruited. Out of all 4 domains, mean QOL of environmental domain scored highest. HD patients had a mean age of 57.9 ± 14.2 years. Around 52.78% were male, where majority 49 patients were on thrice per week HD.

Patients who were employed, the mean estimated QOL score was higher as compared to unemployed (7.77, 95% CI: 0.41, 15.12). With every one unit increase in muscle mass, the mean estimated QOL score increases (27.93), whereas with every one percent increase in body fat percentage, the QOL score decreases (10.86). Among all ESRD patients, married female had a decreased QOL score.

Conclusion Finding shows the assessment of QOL along with body size and compositions are valuable in clinical practice for health professionals to advise their patient accordingly. In future controlled trials are warranted to examine whether intervention to improve nutrition status along with muscle mass improve QOL in HD patients.

Keywords: Quality of life, body fat, muscle mass

9.6

HEALTH BENEFITS OF CHIA SEEDS

Sara Saleem Valliani, Anusha, Shehla Khan
School of Nursing and Midwifery, Aga Khan University

Background: *Salvia hispanica*, commonly known as chia is a species of flowering plant in the mint family, Chia is an annual herb growing up to 1.75 metres (5.7 feet) tall, with opposite leaves that are 4–8 cm (1.6–3.1 in) long and 3–5 cm (1.2–2.0 in) wide. The same amount of chia seeds contains high amounts (48–130% DV) of the dietary minerals calcium, iron, magnesium, manganese, phosphorus and zinc (table). Like other types of seeds, you can eat chia seeds as a tasty treat. Although you have to ground and chew them well, they are very healthy. Further, you can incorporate them into your diet easily. They can be added to puddings and baked goods or sprinkled on cereal and rice. You can eat chia seeds raw or soak them in juice. In fact, adding liquid to chia seeds will make them transform into a gel-like substance. **Hypothesis:** Does chia seeds contain protein carbohydrates and protein?

Procedure / Method: A standardized method was used in which a qualitative and quantitative measurements was done for the detection of protein, carbohydrates and proteins.

Results: The data was collected on a large scale for the detection of each class of nutrient. Chia seed is composed of protein (15–25%), fats (30–33%), carbohydrates (26–41%), high dietary fiber (18–30%), ash (4–5%), minerals, vitamins, and dry matter (90–93%). It also contains a high amount of antioxidants.

Conclusion: With the qualitative and quantitative

experiments Performed it was concluded that chia seeds contain proteins, carbohydrates and lipids. Your body and brain will benefit from their high nutritional value.

Keywords: Nutrition, food nutrients, chia

9.8 IMPACT OF SPICING UP THE CRITICAL CARE FELLOWSHIP CURRICULUM- A QUALITATIVE ANALYSIS OF TRAINEE PERCEPTION *Madiha Hashmi, Aliya Ahmed, Asma Hasnain* *Department of Anaesthesiology, Aga Khan University*

Designing critical care medicine (CCM) curriculum for subspecialty training is challenging due to the uniqueness of the specialty and special needs of the CCM trainees. Intensive care units (ICUs) have a service-driven environment with acute often life-threatening medical conditions, a multidisciplinary nature of the ICU team and fewer numbers of trainees especially in newly established CCM-training programmes in developing countries where CCM is yet to be recognized as a stand-alone specialty. In 2013 the CCM curriculum committee of the Aga Khan University used the SPICES model to evaluate the existing curriculum and introduced innovative student-centered learning and assessment strategies. SPICES model of curriculum development has been used successfully not only to design, plan and review various under and post-graduate curricula, but to tackle problems relating to the curriculum and provide guidance relating to teaching methods and assessment.^{4,5,6} It consists of an acronym of six strategies, each strategy being represented as a spectrum or continuum, i.e. student-centred / teacher-centred, problem-based/information-gathering, integrated/discipline-based, community-based/hospital-based, elective/uniform and systematic/apprenticeship-based. The objective of the study was to evaluate the impact of these teaching/learning strategies on CCM Fellowship training experience, as perceived by the trainees. The qualitative research 'phenomenology methodology' was adopted to document the experience of CCM fellows before and after the introduction of innovative teaching strategies. The transition in fellowship training program and its impact was estimated by the experiences and feedback of the participants who gave their perspective which was recorded by individual interviews. The interview data were coded and transcribed for the purpose of the thematic analysis. The results of this study highlight gaps in CCM training in one institution which can be used by

programme directors regionally and globally to address the identified gaps and improve critical care training. The weaknesses of the training program identified were different for pre and post-intervention trainees. Lack of formal teaching sessions and assessment were considered the main drawbacks of the program by the pre-intervention trainees. Whereas, lack of defined elective rotations and no dedicated time for research were the weaknesses pointed out by the post-intervention fellows. Both of these issues are considered valid for the training program by the authors and are being addressed by the CCM fellowship committee for further strengthening the program. By introducing novel teaching strategies, regular assessment and focused feedback the critical care training experience was enhanced and moved the curriculum towards the innovative and progressive side of the SPICES continuum. In 2013 the CCM curriculum committee of the Aga Khan University used the SPICES model to evaluate the existing curriculum and introduced innovative student-centered learning and assessment strategies. SPICES model of curriculum development has been used successfully not only to design, plan and review various under and post-graduate curricula, but to tackle problems relating to the curriculum and provide guidance relating to teaching methods and assessment. It consists of an acronym of six strategies, each strategy being represented as a spectrum or continuum, i.e. student-centred / teacher-centred, problem-based/information-gathering, integrated/discipline-based, community-based/hospital-based, elective/uniform and systematic/apprenticeship-based. The objective of the study was to evaluate the impact of these teaching/learning strategies on CCM Fellowship training experience, as perceived by the trainees. The qualitative research 'phenomenology methodology' was adopted to document the experience of CCM fellows before and after the introduction of innovative teaching strategies. The experiences and feedback of the participants was recorded by individual interviews. The results of this study highlight gaps in CCM training in one institution which can be used by programme directors regionally and globally to address the identified gaps and improve critical care training. The weaknesses of the training program identified were different for pre and post-intervention trainees. Lack of formal teaching sessions and assessment were considered the main drawbacks of the program by the pre-intervention trainees. Whereas, lack of defined elective rotations and no dedicated time for research were the weaknesses pointed out by the post-intervention fellows. Both of these issues are considered valid for the training program by the

authors and are being addressed by the CCM fellowship committee for further strengthening the program. By introducing novel teaching strategies, regular assessment and focused feedback the critical care training experience was enhanced and moved the curriculum towards the innovative and progressive side of the SPICES continuum.

Keywords: critical care fellowship, perception, spices

9.9 KNOWLEDGE OF CARDIOLOGY NURSES' REGARDING CARE OF PATIENTS WITH PACEMAKER AND ICDS.

Faisal Ameen, Dr Jacqueline Maria Dias, Saleema Allana

Department of Surgery and School of Nursing and Midwifery, Aga Khan University

Nurses' knowledge plays a vital role in terms of providing care of patients with permanent pacemaker and implantable cardioverter defibrillators. It is increasingly recognized that the patient with implanted PPMs or ICDs are a real challenge, especially when they require long term care. Adequate knowledge of nurses about the care of PPMs & ICDs, improves accuracy in measurement of parameters, assists in setting realistic goals and making clinically wise decisions, and improves their overall performance. However, as per researcher's knowledge this study has never been conducted in Pakistan. Purpose The aim of the present study is to assess nurses' knowledge regarding care of patients with PPMs and ICDs. Furthermore the study aimed to explore the knowledge level between novice and expert nurses, nurses having different level of professional qualification, nurses having dip card and those who do not have dip card, and between male and female nurses.

Methodology A descriptive cross sectional study design was conducted, total 139 study participants were enroll in this study from the Aga Khan University Hospital (AKUH), and Tabba Heart Institute (THI) Karachi, Pakistan. The data was collected, between April and June 2016, through structured questionnaire to assess nurses' knowledge regarding care of patients with PPM and ICDs. The tool was divided into three parts background knowledge, post procedure care and post procedure and patient education, further, tool made by the researcher according to Pakistani culture and context. Data was analyzed on SPSS version 19, T-Test for two independent sample and, One-way ANOVA used for data analysis purpose.

Results The current study revealed that, 26.6% study participants had higher knowledge regarding care of patients with PPMs and ICDs, 64% of the study participants had moderate level of knowledge, whereas, 9.4% of the study participants had poor level of knowledge. The current study also found a significant difference between novice and expert nurses, moreover, a significant difference was also found between the mean levels of knowledge score between nurses having different level of qualification. Study also found a significant difference between specific study questions, however, a true comparison could not be assured, as dip card nurses were only 19 in numbers versus 120 study participants.

Conclusion To conclude, the majority of the nurses have moderate level of knowledge regarding care of patients with PPMs and ICDs, furthermore the finding of the study have created a platform for nursing leaders, to start a comprehensive training program in order to improve quality care of the patients. In addition as this was the base line study so might be providing visions for qualitative as well as interventional study in the future.

Keywords: PPMs and ICDs, novice and expert nurses, nurses' knowledge

9.10 RECOGNIZING ACUTE KIDNEY INJURY IN CHILDREN: A MATTER OF 5 RS

Sidra Ishaque, Tariq Jamil, Qalab Abbas, Humaira Jurair, Anwar ul Haq

Department of Paediatrics and Child Health, Aga Khan University

Background: Acute Kidney Injury (AKI) is strongly associated with increased morbidity and mortality, if not recognized early and treated appropriately. We describe our experience of conducting AKI workshops amongst pediatricians and trainees and their perception in different tertiary care hospitals of Karachi. This is in context with the Oby25 initiative launched by the ISN (International Society of Nephrology).

Methods: AKI workshops were conducted in ten teaching hospitals of the city by the Pediatric critical care team of The Aga Khan University Hospital (AKUH) in collaboration with department of Continuing Professional Education in 2016. This half day workshop consisted of a pre-test, 1 didactic lecture covering the basic definition of AKI, the 5 Rs (Risk, Recognition, Response, Renal Support and Rehabilitation), the modified p RIFLE criteria and KDIGO (Kidney Disease-Improving Global Outcomes) classification. This was followed by a 30-

minute video on basic concepts of peritoneal dialysis and its application in our setting. This was followed by a practicum session lasting three hours, where the participants were divided into small groups and nine case scenarios covering the 5 Rs, including, nephrotoxicity, contrast induced nephropathy, post-operative AKI, Intraabdominal hypertension and cardiorenal syndrome were discussed. This was followed by feedback and post-test.

Results: Total 12 workshops were arranged with 286 participants, with an average 20-25-participants per workshop with 4-6 facilitators. Participants showed an overall improvement in post-test score as compared to pre-test and 70% participants scored >75% in post-test. Overall satisfaction rate of the participant was very good (92%).

Conclusion: Prevention and treatment of AKI should be a core competency for all Pediatric physicians. This focused workshop is one of the initial steps to educate and train frontline physicians in improving the care of acutely ill child in order to improve the outcome by creating awareness and dissemination of knowledge.

Keywords: Recognizing, Kidney Injury, critically ill

9.11

DETERMINE THE PH AND MICROBIAL STATUS OF DIFFERENT DRINKING WATER SAMPLES. / INVESTIGATORS: RUHINA KHUDODOD, ZOFINOON DOSTYAR, SHEHLA KHAN (SUPERVISOR)

*Ruhina Khudodod, Zofinoon Dostyar, Shehla Khan
School of Nursing and Midwifery, Aga Khan
University*

Background Nowadays foreign people from different countries come to Pakistan and most of them complain about getting stomach pains and acidity due to the waters they drink here. Most foreign people coming to AKU have the same complaints about the AKU tap water. Therefore, we chose this hypothesis in order to see and prove if this is the actual case for them to get sick or maybe there are just some other reasons. We chose specifically the most branded waters of Pakistan that those people might be drinking and also AKU tap water and the regular filter water for our experiment. By identifying the pH levels and the number of microbes present in these water brands; we would be able to aware people about which water is actually harmful for their health and which one is not.

Procedure A. Determine the PH of the water samples:
1. Take about 200 ml of the first water sample (Aquafina) in a 250 ml beaker. 2. Take 10 ml of this

sample in a test tube. 3. Find out its pH with the help of pH paper. 4. Take 8 readings by repeating steps 2-3 and record them in the observation table (table A). 5. Take 10 ml of this water sample in a 100 ml beaker. 6. Now find out its pH with the help of pH meter. 7. For this purpose, rinse the pH electrode in distilled water and dry it with the help of tissue paper. 8. Immerse the pH electrode in pH buffer. Adjust the standardized control for instrument to read pH 7.00 approximately. 9. Rinse the electrode in distilled water again and dry it. 10. Immerse the pH electrode into the sample (test tube) to be measured. Allow sufficient time for the electrode to be stabilized. The screen of the instrument will indicate the pH value of the sample at room temperature. 11. Take 8 readings by repeating steps 5-10 and record them in the observation table (table A). 12. Repeat the above procedure (steps 1-11) to find out the pH of remaining four water samples (Nestle, Culligan, AKU filter water and Normal filter water). Record all readings in the observation table (table A).
B. Determine the microbial status of the water samples
1. Arrange 3 water blanks (9 ml each) in a test tube rack and label them 1:10, 1:100 & 1:1000. 2. Transfer 1 ml of the first water sample (Aquafina) by a sterile pipette filler in the tube labeled as 1:10. Shake the tube to mix thoroughly. 3. Prepare serial dilutions by transferring 1 ml dilute sample from first (labeled as 1:10) to second (labeled as 1:100) and second to third (labeled as 1:1000) test tube. 4. Take 3 sterile petri plates and label them with the three dilutions prepared respectively. 5. With sterile pipette filler, measure 1 ml of the highest water dilution (1:1000) and transfer it to the plate so marked. 6. Using the same pipette filler, repeat step 5 for each dilution, in descending order of dilution. 7. Take melted nutrient agar, cool it to approximately 45°C and pour suitable amount of agar in each of the petri plate containing water dilution. Cover the plate and mix the content by rotating it gently on the top of the table. 8. Allow the agar to solidify and then invert all plates. 9. Incubate all plates at 37°C for 24 hours. 10. After 24 hours, count the number of colonies on each plate and calculate the number of organisms per ml of water. Results: Ph was 6-7 for all the waters Colonies: Aquafina: No growth Nestle: 0.66 Culligan: No growth AKU tap water: 0.33 Normal filter water: No growth

Conclusion: According to the results, the PH of the water samples was always in the range of 6-7 and mostly it was 7 which is neutral. The microbial status also proved that all the waters are clean. Thus, we can now say that stomach and other health problems are not due to these waters, and anyone should drink these waters with no hesitation.

Keywords: ph, microbial status, water brands

9.12 IDENTIFY BEST PRACTICES IN CLINICAL BEDSIDE TEACHING: A SYSTEMATIC REVIEW

Azam S. Afzal, Muhammed Tariq
Section of Education, Department of Medicine, Aga
Khan University, Karachi

Background: Bedside teaching is a specialized form of small group teaching that takes place in the presence of the patient. Although it is known to enhance a student's learning experience and improve patient care, the use of this type of teaching is unfortunately in steady decline. The aim of our research was to: 1) Identify factors, and variables pertaining to clinical bedside teaching 2) Understand current educational theories applicable to clinical bedside teaching 3) Identify practices regarding clinical bedside teaching have been published.

Methods: Search Databases include PubMed, Educational Resources Information Center (ERIC), Cumulative Index of Nursing and Allied Health Literature (CINAHL), and the Cochrane Library. Data was retrieved by connecting Medical Subject Heading (MeSH) terms ["clinical" or "bedside" or "education" or "teaching"]. Inclusion criteria for selection of articles were based on type of respondents (medical, nursing, dentistry) of either an undergraduate or postgraduate program; type of study (surveys, interventions evaluations), and published in English language, peer reviewed journal. Data was extracted into a data table. Extraction included subheadings from the Best Evidence Medical Education (BEME) Quality, Utility, Extent, Strength, Target, Setting of evidence (QUESTS) acronym.

Results (initial): Traditionally, bedside teaching has been seen as a primary teaching modality. It consisted of 75 % of all clinical training in the 1960s. Today's estimates range from 8–19 % of medical training.

Success factors include attending approachability, enthusiasm, high quality teaching, attention to length of rounds, house staff autonomy, and establishing goals/expectations. Learners are motivated to **engage in clinical reasoning** and problem-solving, if role models provide adequate demonstration and guidance.

Conclusions: Although bedside teaching is an important aspect of clinical education, increasing pressures on clinical practitioners have resulted in a fall in its use in recent years. This needs to be addressed by providing more structured and protected bedside teaching opportunities for students and junior doctors.

Keywords: Teaching & learning, bedside teaching, clinical teaching.

9.13 A QUALITATIVE STUDY ON BEDSIDE CLINICAL TEACHING IN AN UNDERGRADUATE MEDICINE CLERKSHIP

Azam S. Afzal, Muhammed Tariq
Department of Medicine, Aga Khan University,
Karachi

Background: Bedside teaching can improve students' history taking, examination skills, and knowledge of clinical ethics, can teach them professionalism, and can foster good communication and role modeling skills. The educational sessions integrate theory, practical skills, and patient contact to make the educational process as realistic as possible, and they allow the students to develop empathy with the patients. It represent as much as 75 % of all clinical training in the 1960s. Today's estimates range from 8–19 %, if at all present in medical training. Our research aimed to determine the current status of bedside teaching in the Medicine Department at Aga Khan University.

Methods: A constructivist, induct research approach was used in the study. Data was collected from the students rotating in the medicine clerkship (n = 60); through an online evaluation system which ensured participant anonymity. Participants provided qualitative narratives to describe their experience of the Medicine clerkship, which included strengths and limitations. Content analysis of student narratives was used to identify factors effecting bedside teaching. *Results:* From the narratives the themes identified which affected clinical bedside teachings were: clinical team size, patient load, faculty/attending motivation. Interestingly, participants commented that one of the factors that effected clinical teaching negatively was an increase in team size especially due to elective students. A heavy patient load effected the clinical *Conclusions:* Although bedside teaching is an important aspect of clinical education, increasing pressures on clinical practitioners have resulted in a fall in its use in recent years. This needs to be addressed by providing more structured and protected bedside teaching opportunities for students and junior doctors.

Keywords: Teaching & learning, bedside teaching, clinical teaching.

9.14 MEDICAL STUDENTS' PERCEPTIONS OF ATTENDING PHYSICIANS' AND RESIDENTS' TEACHING ROLE

Azam Afzal, Kiren Habib, Fateh Ali Tipoo
Section of Education, Department of Medicine, Aga
Khan University, Karachi

Background: Changes in the health care system imply that fewer patients will be admitted to hospitals and attending physicians will be devoting more time to clinical activities with less time for student education.

Methods: Anonymous surveys of final year students were conducted at Aga Khan Medical College at the end of the required 11-week medicine clerkship at the university hospital. Data from the medicine clerkship rotation and faculty evaluation was collected and analysed.

Results: Out of 0-5 scale, students rated "Demonstrate Professionalism" highest (mean =4.3), followed by "is able to answer questions clearly" and "is able to challenge students thinking" (mean=4.2). When comparing effectiveness of physician and resident rounds, for attending physicians mean = 4.2, while for residents mean = 4.1.

Conclusions: As medical education shifts to ambulatory settings, clinical teaching such as rounds and conferences should be maintained and efforts to enhance the teaching skills of faculty should be encouraged. In addition other factors affecting clinical teaching should also be explored.

9.15 RATINGS OF RESIDENT PERFORMANCE IN 360- DEGREE FEEDBACK: PERFORMANCE THEORIES OF SELF AND OTHERS

Muhammad Tariq, Marjan Govaerts, Azam Afzal, Syed Ahsan Ali, Tabassum Zehra
Section of Education, Department of Medicine, Aga
Khan University, Karachi

Introduction: Three sixty-degree evaluations are becoming increasingly important in assessment of trainee performance in the workplace. Research findings indicate that there is variability in ratings when comparing different rater sources. Adequate interpretation of performance ratings in 360-degree feedback procedures therefore requires understanding of performance theories. Particularly factors underlying self-ratings of performance is not well understood. *It is important to investigate what underlies self-ratings and to investigate differences in*

performance theories underlying self-ratings and ratings by other rater sources, particularly nurses.
Methods: 103 self-ratings of residents were analyzed, using SPSS software version 20. Exploratory factor analysis was conducted to identify factor structure of self ratings and Cronbach's alpha was obtained to measure internal consistency of the ratings.

Results: Principal component analysis was conducted on the 8-item-self-rating questionnaire with oblique rotation (direct oblimin). Only one factor had Eigenvalue over 1 and explained 63% of variance. The single identified construct was professional behavior. The reliability analysis measured with Cronbach's $\alpha = .91$.

Conclusion: The identified performance theories would help programme directors to develop residents' profiles. Our research findings indicate that the 360-degree evaluation tool needs improvement. Some of the explored performance theories could be incorporated in the 360-degree rating scale to enhance its construct validity.

Infection and Immunity

10.1 BEHAVIORS REQUIRED FOR HEALTH CARE PROFESSIONALS WHILE CATERING MEN WITH STIS

Sarmad Muhammad Soomar, Salman Muhammad Soomar

Nursing Education Services and Department of Pathology & Laboratory Medicine, Aga Khan University

Background: Sexual health is sensitive in conservative societies like ours. Men are more reluctant to visit hospitals or take care while they are having STIs because of sociocultural taboos. In addition, what is commonly witnessed that is stereotyping of health care providers on men who are having sexually transmitted infections (STIs). Healthcare professionals are theoretically well versed in identifying symptoms and designating proper care and medications to client. The point of improvement that still resides in the care is lack of behaviors that are essential to establish while catering men suffering from or diagnosed with STIs.

Objective: The purpose of this study was to identify the core behaviors that are required for health care professionals to demonstrate a proper care to men suffering from or diagnosed with STIs.

Methodology: To meet the objective a literature search from authentic data bases like science direct and others was done to identify recent literature supporting the aim the study.

Results: The literature search was evident in terms of reflecting multiple core behaviors required for health care professionals to demonstrate a proper care to men having STIs. The major and commonly highlighted were dignity, respect, empathy, sensitivity, confidentiality and nonjudgmental and non-stereotypical behavior. The literature was further supporting the core behaviors with relevant case studies encountered by authors in terms of reflecting this very sensitive issue.

Recommendations and Conclusion: It is highly recommended to encourage health care providers and reemphasize them through short courses or refresher training, along with a proper monitoring system to reassure presence of core behaviors while dealing with men having STIs. So that men can visit health care setting (when they want to opt of services regarding STIs) confidently and without any fear of judgments. In conclusion, sensitivity and stereotypes related to STIs makes men reluctant to opt for sexual health services and lack of core behaviors among health care providers aggravate their thinking more. Addition of

core value and behaviors in treatment and care can improve this flaw.

Keywords: Healthcare providers, behaviors, sexually transmitted infections

10.2 ASYMPTOMATIC CARRIAGE OF SALMONELLA SPP. AMONG FOOD HANDLERS AT A TERTIARY-CARE HOSPITAL

Syeda Ayesha Farooq, Roomail Nazir, Seema Irfan, Faiza Jamal, Farahnaz Qamar, Sadia Shakoor
Medical College, Aga Khan University

Background: Carriage of typhoidal salmonellae is a well-known risk factor for food-borne enteric fever transmission. The burden of Salmonella carriage among professional food handlers in highly endemic countries such as Pakistan is unknown, but expected to be high. Chronic carriage among food handlers operating in catering establishments including in medical institutes and hospitals can result in large nosocomial and community outbreaks, as catering services are trusted to be free of pathogens by the populace. We report carriage rates in a cohort of professional food handlers employed by food services at a medical institute in Karachi, Pakistan.

Methods: Employee records of all food handlers hired by the food services, at the Aga Khan University Hospitals were examined from 2006–2015. There were 152 unique records. The food services pre-employment and annual screening is linked to the Employee Health Unit of the institute and all employees found to be infected or carriers are treated by a physician. A hygiene education program is also a mandatory part of food service employees. Data was abstracted in MS Excel for employees followed up over the study years. The cohort is described.

Results: Our sample consisted of 145 men and 9 women. In 2006, 78 employees were inducted for pre-employment screening. Thereafter, on an average, 8 ± 6 employees were inducted each year. Approximately, 112 ± 20 follow-up stool cultures were performed each year. Over the 10-year period, 12 Salmonella cases were identified. These included the following Salmonella species: 3 Salmonella Group B, 1 Salmonella Group C1, 4 Salmonella Group C2, 3 Salmonella species, and 1 Salmonella typhimurium. All Salmonella cases were identified on follow-up annual cultures and none on pre-employment screening. After treatment, the repeat cultures showed

no growth of Salmonella. Additionally, there were 59 Campylobacter cases and 20 Shigella cases. Nine cases of Campylobacter and one case of Shigella were identified on pre-employment screening, whereas all other carriage cases were identified on annual follow-up.

Conclusions: The carriage rate of Salmonella spp. among food handlers is low. We recommend routine pre-employment screening and hygiene education of all food handlers as in our model cohort in urban areas of Pakistan, with annual follow-up as a trigger to improve hygiene practices among professional food handlers.

Keywords: Salmonella, asymptomatic, prevention

10.8 ANTIBIOTIC STEWARDSHIP PROGRAM IN PEDIATRIC INTENSIVE CARE UNIT OF A DEVELOPING COUNTRY

*Shah Ali Ahmed, Qalab Abbas, Humaira Jurair
Department of Paediatrics and Child Health, Aga
Khan University*

Objectives: To assess the effects of implementation of pharmacist led antibiotic stewardship program on usage of antibiotics in our pediatric intensive care unit (PICU).

Methods: This cross sectional study was conducted in our 8 bedded closed-multidisciplinary PICU for a duration of three months. The antibiotic stewardship program (ASP) team included a pharmacist, PICU physician and infectious disease specialist. Four components of this program included appropriate selection of antibiotics, appropriate dose, de-escalation / discontinuation and monitoring of interaction and drug blood levels. During daily rounds, team recorded all the four components on each patients along with days of therapy (DOT), cost of therapy (COT) and outcome in term of survival. Data was collected on a structured proforma. We compared the antibiotic utilization data with our retrospective published data. Data was entered and analyzed using SPSS version 20.

Results: Total 130 patients studied in pre and post ASP each. Age and admitting diagnosis were same in both the groups. Use of empiric antibiotics dropped from 42% in pre ASP to 30% in post ASP, prophylactic antibiotics were given to 43% patients in each group while 15% in pre ASP received therapeutic and 9% in post ASP. All the patients had received antibiotics in pre ASP while 81% patients received in post ASP. During the ASP appropriate dose

adjustment by the pharmacist was done in 19%, and 82% of the times antibiotics were stopped when indicated and missed drug-drug interaction/monitoring of drug levels were missed in 14% of cases in ASP while none of these were done in pre ASP. DOT reduced from 1937 to 651 days after the ASP and prolonged (>5 days) use of antibiotics decreased from 64% in pre ASP to 47% in post ASP (p

Keywords: antibiotic stewardship program, PICU, cost and days of therapy

10.9 PROSPECTIVE SURVEILLANCE OF DEVICE- ASSOCIATED HEALTHCARE-ASSOCIATED INFECTIONS IN A PEDIATRIC INTENSIVE CARE UNIT OF A TERTIARY CARE CENTER IN PAKISTAN

*Shah Ali Ahmed, Qalab Abbas, Humaira Jurair
Department of Paediatrics and Child Health, Aga
Khan University*

Introduction: Infection prevention and control Program has significantly reduced the rate of device Associated infections (DAI) in several intensive care units (ICUs). The limited Data is available from Pakistan.

Objective: To assess the rate of DA-HAI in a pediatric intensive care unit of a developing country according to CDC-NNIS and current NHSN definitions and guidelines. **Methods:** This was a prospective observational study conducted at the PICU of AKUH from Aug-2015 to Jul-2016. All children aged from 1 month to 16 year were included. CDC- NHSN guidelines was used for diagnosis of DA-HAI.

Results: A total of 371 patients were admitted in PICU (1639 patient days and 4880 device days). The mean age was -----year and ---- were male. There were total 13 DAI reported with incidence rate of 2.6/1000 Device days. Rate of CLABSI was 12.3/1000 CV-lines days. Rate of VAP was 0.95/1000 ventilator days. Most frequently isolated organisms included Enterococcus (21.4%), E.Coli (21.4%) and K. pneumoniae (21.4%). Mortality rate was 14.5%. **Conclusion:** There is high rate of DAI and associated cost, morbidity and mortality. Active surveillance and low cost interventions can reduce this burden.

Keywords: Device associated infectipn, PICU, Pakistan

10.10 PRIMARY AMOEBIC MENINGOENCEPHALITIS: NEUROCHEMOTAXIS AND NEUROTROPIC PREFERENCES OF NAEGLERIA FOWLERI

Abdul Mannan Baig
Department of Biological and Biomedical Sciences,
Aga Khan University

Abstract: *Naegleria fowleri* causes one of the most devastating necrotic meningoencephalitis in humans. The infection caused by this free-living amoeba is universally fatal within a week of onset of the signs and symptoms of the disease called primary amoebic meningoencephalitis (PAM). In all the affected patients, there is always a history of entry of water into the nose. Even though the diagnostic and treatment protocols have been revised and improved, the obstinate nature of the disease can be gauged by the fact that the mortality rate has persisted around ~95% over the past 60 years. Some of the unanswered questions regarding PAM are is there a neurochemical basis of the chemotaxis of *N. fowleri* to the brain? What immune evasion means occurs preceding the neurotropic invasion? What is the contribution of the acute inflammatory response in the fatal cases? Can a combination of anti-amoebic drugs with antagonism of the acute inflammation help save the patient's life? As prevention remains the most valuable safeguard against *N. fowleri*, a quicker diagnosis, better understanding of the pathogenesis of PAM coupled with testing of newer and safer drugs could improve the chances of survival in patients affected with PAM.

Keywords: Drug delivery to the Brain, *Naegleria fowleri*, primary amoebic meningoencephalitis

10.11 EMERGING INSIGHTS FOR BETTER DELIVERY OF CHEMICALS AND STEM CELLS TO THE BRAIN

Abdul Mannan Baig
Department of Biological and Biomedical Sciences,
Aga Khan University

The human central nervous system and its vascularity has evolved a complex yet useful barricade, called blood brain barrier (BBB). The understanding of the BBB and the transport proteins that allow a selective access across the BBB remain fundamental in designing chemicals and molecules that could cross the BBB and prove therapeutically beneficial. The finding that human CNS has a lymphatic drainage as

evidenced by a brain-lymphatic link in brain blood vessels and the fact that chemical molecules from the CNS enter the general circulation, the model of the BBB needs to be revisited. Here the author intends to discuss the components of the BBB, debate novel routes of administration of the drugs and embryonic stem cells that could cross or bypass the BBB in order to reach the CNS.

Keywords: Blood Brain Barrier, CNS-Lymphatics, Drug delivery to the Brain

10.12 TRACED ON THE TIMELINE: DISCOVERY OF ACETYLCHOLINE AND THE COMPONENTS OF THE HUMAN CHOLINERGIC SYSTEM IN A PRIMITIVE UNICELLULAR EUKARYOTE ACANTHAMOEBA SPP.

Abdul Mannan Baig, Zohaib Rana, Salima Lalani,
Syeda Sumayya Tariq, HR Ahmad
Department of Biological and Biomedical Sciences,
Aga Khan University

Acetylcholine (ACh) is the neurotransmitter of cholinergic signal transduction that affects the target cells via muscarinic (mAChR) and nicotinic (nAChR) cholinergic receptors embedded in the cell membrane. Of the cholinergic receptors that bind to ACh, the mAChRs execute several cognitive and metabolic functions in the human central nervous system (CNS). Very little is known about the origins, autocrine and paracrine roles of the chemical ACh instigated in primitive life forms on earth. With the recent report of the evidence of an acetylcholine binding mAChR1 like receptor in *Acanthamoeba* spp, it was tempting to investigate the origin and functional roles of cholinergic G-protein coupled receptors (GPCRs) in the biology of eukaryotes. We hypothesized the presence of ACh, its synthetic, degradation system and a signal transduction pathway in a approximately ~2.0 billion year old primitive eukaryotic cell *Acanthamoeba castellanii*. Bioinformatics analysis, ligand binding prediction and docking methods were used to establish the origins of enzymes involved in the synthesis and degradation of ACh. Notably, we provide evidence of the presence of ACh in *Acanthamoeba castellanii* by colorimetric analysis, which to date is the only report of its presence in this primitive unicellular eukaryote. We show evidence for the presence of homology of evolutionary conserved key enzymes of the cholinergic system like choline acetyltransferase (ChAT) and Acetylcholinesterase (AChE) in *Acanthamoeba* spp, which were found to be

near identical to their human counterparts. Tracing the origin, functions of ACh and a primeval mAChRs in primitive eukaryotic cells has the potential of uncovering primitive cholinergic pathways that can be extended to understand the states of cholinergic deficiency in neurodegenerative diseases (ND).

Keywords: Acetylcholine Origins, Evolution of Cholinergic System in Eukaryotes, Acanthamoeba spp.

10.13 DISCOVERY OF CALCIUM CHANNELS IN ACANTHAMOEBA CASTELLANII

Abdul Mannan Baig, Zohaib Rana, S. Sumayya Tariq, HR Ahmad
Department of Biological and Biomedical Sciences,
Aga Khan University

Aims: We inferred the presence of target proteins of Amlodipine that include diverse types of voltage gated calcium channels [Cav] and carbonic anhydrase [CA] in Acanthamoeba. **Methods:** In this study, we performed bioinformatic searches for amino acid sequence homology, 3D structural modelling, ligand binding predictions, docking predictions and experimental assays. **Results:** We show the evidence of the presence of two pore calcium channels (TPC), Cav of L-type, Cav subunit alpha-2/delta1 and CA in Acanthamoeba, which are known targets of amlodipine. Growth assays showed amoebistatic and amoebicidal effects at a dose range of 50-100µg/ml of Amlodipine and Gabapentin respectively. **Conclusion:** Bioinformatics tools, 3D structural modelling, docking predictions and ligand binding prediction offer well-defined methods to explore drug targets and facilitate the study of the evolution and homology of cardinal ion transporters and enzymes in between unicellular eukaryotes, like Acanthamoeba and multicellular specie such as humans.

Keywords: Acanthamoeba spp, Calcium Channels, Voltage-gated Calcium channels

10.14 EVOLUTION OF ACID-BASE BUFFERS AND WATER HOMEOSTASIS IN EUKARYOTES: HOMOLOGY OF AQUAPORIN AND CARNOIC ANHYDRASE BETWEEN HUMANS AND ACANTHAMOEBA SPP

Abdul Mannan Baig, Zohaib Rana, HR Ahmad
Department of Biological and Biomedical Sciences,
Aga Khan University

In humans and several other multicellular eukaryotes, numerous coordinated buffer systems has evolved to keep the pH at close to 7.1 and 7.4 within the intracellular and extracellular milieu respectively. We selected Acanthamoeba castellanii as a model unicellular eukaryote to explore the evolution of water and pH regulatory mechanisms and compare it with mechanisms in humans that exist at cellular levels. Experimental assays were done with Acetazolamide, Brinzolamide and Mannitol to observe their effects on Acanthamoeba. The amino acid sequence homology search and 3D modeling for carbonic anhydrase and aquaporin revealed identical proteins in Acanthamoeba with their human counterparts. Docking studies reflect the binding site of Acetazolamide on amoebal proteins.

Keywords: Aquaporins, Band 3 Protein, Acanthamoeba spp.

10.15 APOPTOSIS IN ACANTHAMOEBA CASTELLANII BELONGING TO THE T4 GENOTYPE

Abdul Mannan Baig, Salima Lalani, Naveed Khan
Department of Biological and Biomedical Sciences,
Aga Khan University

Here we describe features of apoptosis in unicellular Acanthamoeba castellanii belonging to the T4 genotype. When exposed to apoptosis-inducing compounds such as doxorubicin, A. castellanii trophozoites exhibited cell shrinkage and membrane blebbing as observed microscopically, DNA fragmentation using agarose gel electrophoresis, and phosphatidylserine (PS) externalization using annexin V immunostaining. Overall, these findings suggest the existence of apoptosis in A. castellanii possibly mediated by intrinsic apoptotic cascade. Further research in this field could provide avenues to selectively induce apoptosis in A. castellanii by triggering intrinsic apoptotic cascade

Keywords: Acanthamoeba, DNA fragmentation, Apoptosis

10.16

SIGNIFICANCE OF INFECTION CONTROL PROTOCOL OF NURSING CARE TO PREVENT EXTERNAL VENTRICULAR DRAIN (EVD) RELATED INFECTION AMONG PEDIATRIC AGE GROUP OF A TERTIARY CARE HOSPITAL IN PAKISTAN: A RETROSPECTIVE STUDY

Farah Noorali Wasaya
Nursing Services, Aga Khan University

Objective: Being an invasive procedure, External Ventricular Drain (EVD) carries infection risk which is preventable. Therefore, the aim of the study is to analyze the significance of nursing care with a strict infection control protocol to prevent EVD related infections.

Method: The retrospective study was done at the Aga Khan University Hospital, Karachi for all the pediatric patients who have undergone EVD placement surgeries from January 2007 till December 2014.

Result: The indications for EVD include hydrocephalus, traumatic brain injuries, meningitis, hemorrhages, brain tumors and VP shunt malfunctions. The infections associated with were found in 25 out of 117(14.1%) cases. Factors associated with these infections are analyzed in relation to infection control protocol.

Conclusion: EVD infection was found in 14.1% of patients who were nursed using infection control protocol.

Keywords: Hydrocephalus, External Ventricular Drain, Infection

10.17

EVALUATION OF DIRECT SUSCEPTIBILITY TESTING BY DISK DIFFUSION OF SALMONELLA TYPHI AND SALMONELLA PARATYPHI FROM BLOOD CULTURE

Yusra Shafquat, Ghazala Shaheen, Sadia Shakoor, Khalid Wahab
Department of Pathology and Laboratory Medicine, Aga Khan University

Introduction: Direct susceptibility testing (DST) of organisms from blood culture saves time to appropriate antibiotic administration, and optimal management of infectious syndromes. The American Society for

Microbiology recommends that DST methods from blood culture be validated against standard disk diffusion method with >90% categorical agreement (CA), and

Keywords: Salmonella typhi, Direct susceptibility testing, blood culture

10.18

LABORATORY DETECTION OF TYPHOIDAL SALMONELLAE IN URINE CULTURES IN A TYPHOID ENDEMIC SETTING

Tazeen Fatima, Faisal Riaz Malik, Sadia Shakoor
Department of Pathology and Laboratory Medicine, Aga Khan University

Background: Despite several advances in clinical microbiology diagnostics, improved detection of typhoidal salmonellae in cultures (blood, urine, or stool) remains a challenge. Urine cultures may show growth of Salmonella enterica serovars Typhi or Paratyphi A in the second week of illness, albeit with low sensitivities. In addition to being highly specific, culture diagnosis has the advantages of informing molecular epidemiology and antibiotic susceptibilities. However, many urine culture systems are not designed to detect salmonellae and this may lead to a missed opportunity in diagnosing enteric fever as the cause of an undiagnosed febrile illness, especially in children where urine cultures are performed as part of fever evaluation. We present retrospective urine culture positivity rates for Salmonella Typhi and Paratyphi A from an endemic region.

Methods: Retrospective laboratory records of urine cultures performed from 1996 to 2015 were retrieved from archives of the Integrated Laboratory Management Systems at the Aga Khan University clinical microbiology laboratory. The laboratory has used the cysteine-lactose-electrolyte-deficient (CLED) medium for urine cultures throughout the study years, followed by biochemical identification with the API 20E system (BioMerieux) for isolate identification. Data was exported to MS Excel. Results with Salmonella species were identified after removal of duplicates and frequencies were calculated.

Results: We identified 138 reports (0.03% of all positive urine cultures; with 50000 positive urine cultures reported annually) of Salmonella species in urine cultures during 20 years of study period from 1996-2015. Of these 38.4% (n=53) were Salmonella Typhi and 23.2% (n=32) were Salmonella Paratyphi A, while 38.4% (n=53) were non-typhoidal salmonellae. Around 56% (n=97) of the cases were

male, and male to female ratio was 1.29. Disc diffusion testing showed 63% (n=87), 30% (n=41), 84% (n=116), 17% (n=23), 64% (n=88) and 61% (n=83) of the isolates were sensitive to ampicillin, chloramphenicol, cefixime, ciprofloxacin, ceftriaxone and cotrimoxazole respectively.

Conclusion: Laboratory personnel should be alert to the possibility of both typhoidal and non-typhoidal *Salmonella* spp in urine cultures in typhoid endemic countries. Further identification of isolates having a similar biochemical profile to *Salmonella* spp should be performed, especially if screening agars (eg chromagars) are used which do not identify salmonellae.

Keywords: typhoidal salmonellae, urine cultures, diffusion

10.19 SALMONELLA TYPHI PYOMYOSITIS DUE TO SUBOPTIMAL USE OF CIPROFLOXACIN

*Fizza Farooqi, Joveria Farooqi, Naima Fasih
Department of Pathology and Laboratory Medicine,
Aga Khan University*

Background: Fluoroquinolone resistance in *Salmonella* Typhi has increased from 84.7% to 91.7% in Pakistan. Here we report a case of a healthy 25 year old female who developed a *Salmonella* Typhi pyomyositis following an enteric fever episode 5 months ago probably due to suboptimal therapy with ciprofloxacin at that time.

Objective(s): To highlight the importance of using blood cultures as a diagnostic tool for enteric fever in the current era of emerging resistance

Methods: Setting: Department of Pathology and Microbiology, Aga Khan University Hospital, Karachi This organism was first identified as a gram negative rod on gram stain of the specimen (pus drained from swelling on anterior aspect of leg) and then grown on culture using direct culture methods. It was further identified using standard serological techniques.

Results: Upon receiving the culture report of the pus sample drained from the affected site after incision and drainage, antibiotic therapy was changed from ciprofloxacin to oral co-trimoxazole. The patient was found to be improving till latest follow up.

Conclusion: This case stresses upon the importance of using culture and sensitivity testing for the diagnosis of enteric fever in order to guide appropriate therapy in the present era, when multidrug resistance serves as a serious threat for clinicians. It further negates the use

of fluoroquinolones as empirical therapy for enteric fever in this part of the world.

Keywords: salmonella typhi, pyomyositis, ciprofloxacin

10.20 INTRATHECAL AND INTRAVENTRICULAR ANTIBIOTICS FOR POSTOPERATIVE GRAM- NEGATIVE MENINGITIS AND VENTRICULITIS

*Saad Akhtar Khan, Muhammad Waqas, Usman T. Siddiqui, Muhammad Shahzad Shamim, Karim Rizwan Nathani, Rashid Jooma, Faisal Mehmood
Department of Surgery, Aga Khan University and The Memon Medical Institute*

Background: Postoperative meningitis is a growing cause of concern, especially with the evolution of multidrug- resistant organism. The authors evaluate the use of intraventricular/intrathecal (IVT/IT) antibiotics for postoperative gram- negative meningitis in patients whom intravenous antibiotics were ineffective.

Methods: Medical records were retrospectively reviewed and neurosurgery patients with gram- negative postoperative infection meningitis/ventriculitis were enrolled in the study. Their demographics, hospital course, and outcomes were recorded in a pro forma and analyzed using Statistical Package for the Social Sciences, version 19. *Results:* The review identified 21 patients with postneurosurgical gram- negative meningitis/ventriculitis who were treated with IVT or IT antibiotics. The most common organism was *Acinetobacter* species (n = 14; 66%). Amikacin was used in 7 patients, polymyxin B in 9 patients, and colistin in 5 patients. A combination of antibiotics was used in one patient. Cerebrospinal fluid sterility was achieved in all patients with no incidence of relapse. There was a single death, though that was not related to the infectious process as the patient had a massive pulmonary embolism.

Conclusion: The findings of this study suggest that IVT and IT antibiotic therapy is a useful option in patients who are nonresponsive to standard intravenous therapy with little or no side effects.

Keywords: gram negative, meningitis, ventriculitis

10.21

CHASING THE GOLDEN HOUR

Mohammad Khurshid, Zarka Samoon, Natasha Ali, Shoaib Siddiqui

Department of Oncology, Aga Khan University

Abstract: Febrile neutropenia is the development of fever, often with other signs of infection, in a patient with neutropenia. Fever in the setting of neutropenia should be considered a medical emergency requiring immediate evaluation and administration of empiric broad-spectrum antibiotics. Early studies demonstrated that patients with febrile neutropenia were not promptly treated often experience a rapidly fatal outcome, most notably because of Gram-negative bacteremia. If these febrile neutropenic patients are identified and deal according to institutional integrated care pathway in emergency and administered antibiotic on time (in an hour), the mortality rates of febrile neutropenia due chemo therapy can be reduced.

Method: To check the compliance on institutional clinical practice guidelines a base line audit was done in which 48 adult and pediatric patients with solid and hematological cancer has been selected from July 2015 to April 2017. In this study following things has been checked 1. Time of patient admitted in emergency. 2. Sample drawing timing in emergency. 3. Administration of antibiotic in emergency. 4. Antibiotic is administered after drawing of blood sample drawing or before.

Results: Median age of patients is 54 years (Average: 46, range: 3 - 76), 23 Male and 25 Female. Median time of sample drawing in emergency 0.25 hours (range: 0:00 - 0.74 hours). Median time-to- antibiotic administration was 1:58 hours (range: 0.16 hour – 8:45 hours). 98% patients got antibiotics before blood sample drawn.

Conclusion: Our median time for antibiotic administration was 1.58 hours and maximum time was 8.45 hours. According to studies if antibiotic administration is done within hour of presentation in emergency we can reduce reduced the cost and stay in hospital. This can be done by educating and reinforcing the concerned emergency staff.

Keywords: Febrile Neutropenia, Antibiotics, An hour

10.22

EVALUATION OF MYCOBACTERIAL ANTIBODY SECRETING CELLS (MASC) AS A MARKER OF PULMONARY TUBERCULOSIS IN CHILDREN

Kumail Ahmed, Fariha Shaheen, Aisha Mehnaz, Fehmina Arif, Shazia Sultana, Shahida Qureshi, Farah Qamar, Tania Thomas, Najeeha Talat Iqbal, Department of Paediatrics and Child Health, Aga Khan University and University of Virginia, USA

Background: In the current study, we have evaluated the performance of a diagnostic test based on the secretion of differentiated Antibody Secreting Cells (ASCs) in TB cases confirmed by Mycobacterium tuberculosis (MTB) GeneXpert and children with strong suspicion of tuberculosis.

Method: Among a cohort of children (age 1-14yrs) suspected with pulmonary tuberculosis, we included children with Mycobacterium tuberculosis (MTB) detected by GeneXpert (n=10), Probable (n=42) and Possible (n=42) diagnosis of tuberculosis. Age and Sex matched healthy controls were also recruited (n=87). Briefly, mononuclear cells were cultured with 10% FBS at the concentration of $10^{-5} \times 10^6$ cells/ml in 24-well tissue culture plate at 37°C for 24, 48 or 72 hrs. Culture supernatants were collected at each time point and stored at -80°C. ELISA plates were coated with 1µg /well of BCG vaccine (Japan BCG laboratory). Culture supernatants were added in ELISA plates after blocking nonspecific sites and incubated for 2 hrs at 37°C. After washing, HRP labeled secondary antibody was added for the detection of IgG. The results were expressed as relative optical densities (O.D.) of IgG.

Results: Results of MASC test was first evaluated in children less than 5 and more than 5 years of age. All cases greater than 5 years of had higher ALS responses (48 hrs 0.4 ± 0.31 vs. 0.27 ± 0.24 ; $p=0.012$; 72 hrs 0.44 ± 0.24 vs. 0.31 ± 0.25 ; $p=0.021$). Culture confirmed cases had highest MASC response (Mean= 0.9 ± 0.7) compared to Probable (Mean= 0.4 ± 0.2) Possible TB (Mean= 0.3 ± 0.2) and controls (Mean = 0.3 ± 0.2) [p

Keywords: Diagnostic test, Antibody, Tuberculosis

10.23 DRUG SUSCEPTIBILITY PATTERN OF MYCOBACTERIUM TUBERCULOSIS IN ADULT PATIENTS WITH TUBERCULOUS PLEURAL EFFUSION

*Muhammad Irfan, Kauser Jabeen, Rumina Hasan
Departments of Medicine and Pathology & Laboratory
Medicine, Aga Khan University*

Background: Tuberculous pleural effusion (TPE) occurs in up to 25% of TB patients. Although drug resistance in TB patients has increased worldwide, there is limited information on drug resistance in TPE.

Objectives: To evaluate the drug susceptibility pattern of Mycobacterium tuberculosis in TPE

Methods: A prospective cross-sectional study was performed at Aga Khan University Hospital, Pakistan from August 2014 to June 2016. Patients with TPE were recruited on history, exudative lymphocytic nature of effusion and raised adenosine daminase level. Pleural fluid samples were tested for AFB smear, culture, and line probe assay MTBDRplus. Culture-positive isolates were evaluated for drug susceptibility. Antituberculous drug susceptibility testing were performed according to CLSI M24-A42 guidelines by agar proportion technique on enriched Middle brook 7H10 medium (BBL). Pyrazinamide resistance was detected at 100 µg/ml using the BD BACTECTMMGIT 960 PZA test medium and kit (Becton Dickinson USA). Results: We enrolled 203 patients of TPE with mean age of 48.4±19.8 years. Pleural fluid AFB smear was positive in 4 (1.9%) and AFB culture was positive in 27 (13.3%) cases. Resistance to at least one first-line drug was observed in 4 (14%) of the cases. Isoniazid resistance was found in 2/27 (7.4%) isolates. Resistance against ethambutol was found in 1/27 (3.7%) and for streptomycin was 2/27 (7.4%). All the isolates were sensitive to rifampicin and pyrazinamide.

Conclusion: The observed 14% prevalence of resistance to at least one first-line antituberculosis drug among pleural M. tuberculosis isolates highlights the importance of M. tuberculosis isolation for DST in patients with TPE prior to treatment selection.

Keywords: Tuberculous pleural effusion, drug resistance, diagnosis

10.24 WHOLE GENOME SEQUENCING OF EMERGING BIOFILM FORMING ENTEROINVASIVE E. COLI (BF-EIEC)

*Junaid Iqbal, Oscar G. Gomez-Duarte
Department of Paediatrics and Child Health, Aga
Khan University and Vanderbilt University*

Emergent intestinal E. coli pathogens pose a serious threat to human health. We have recently identified an emergent biofilm forming enteroinvasive E. coli (BF-EIEC) from Colombian children suffering from severe diarrhea. EIEC are closely related to Shigella spp. and cause Shigellosis-like disease. Biofilm is a unique feature to this BF-EIEC emergent pathotype and we believe that that it may be involved in pathogenesis. The objective of this study was to identify known EIEC and emergent virulence genes and pathogenicity islands in this BF-EIEC strain by whole genome analysis. Genome sequencing was performed on the BF-EIEC 52.1 strain using NextGen Illumina and Pacific Biosciences (PacBio) platforms. Data was analyzed using different publically available software and databases. BF-EIEC genome consists of 5,193,449 bp long chromosomal DNA, 269589 bp Large invasion plasmid and 45997bp long additional plasmid. BF-EIEC genome analysis identified 57 genomic islands, 26 pathogenicity islands and 12 prophage integrations. Virulence associated genes identified in the genome included: i) type three secretory system (TTSS), which plays a central role in EIEC/Shigella cell invasion and cell spread; ii) cell adhesion and colonization, iii) biofilm formation, iv) survival in host cell and v) cytotoxicity. Other putative gene function detected included, iron chelation, stress response, evasion of immune response, inflammation and proteolytic degradation of host factors. Antibiotic resistance-associated genes were also detected including efflux pumps and antibiotic degradation enzymes genes among others. These studies indicate that BF-EIEC 52.1 strain contains virulence genes known to be associated with Shigella and EIEC pathogenesis, especially the TTSS genes. The identification of virulence genes and multiple episomal elements may provide evidence of horizontal transfer from other pathogens. Sequencing of BF-EIEC genome not only shed light on the evolution and pathogenesis of this emerging E. coli but may also open opportunities for exciting new discoveries.

Keywords: Biofilm, E. coli, Genome

10.25 HERPES ZOSTER DURING IMMUNOSUPPRESSIVE THERAPY FOR AUTOIMMUNE DISEASES

Mohammad Faizan Zahid, Mariam Ghufuran,
Armaghan-e-Rehman Mansoor, Muhammad Rizwan
Sohail
Medical College, Aga Khan University, Department of
Medicine, Temple University and Aster DM
Healthcare

Background: Patients on immunosuppressive therapy are at a greater risk for herpes zoster reactivation and are more likely to have adverse outcomes. Prophylactic antivirals and vaccinations may potentially prevent these complications. **Methods:** Medical literature addressing the clinical course and therapy of herpes zoster in patients receiving immunosuppressive therapy for autoimmune disorders, and the roles of anti-viral prophylaxis and vaccination was reviewed. Research databases including PubMed, Ovid, Medline, Google Scholar and Cochrane were utilized. **Results:** Acyclovir and its derivatives are most commonly used in this setting for treatment and reduction of post-zoster complications. Foscarnet may be used for acyclovir-resistant strains. At both conventional and ultralow doses, acyclovir has proven effective when used as prophylaxis, reducing the incidence of zoster and its complications in immunosuppressed patients. Additionally, ultra-low doses are associated with significantly reduced side effects. The zoster vaccine, Zostavax, a live-attenuated vaccine has shown promising results in several clinical trials. However, live-attenuated vaccines should be cautiously used in immunosuppressed patients. For patients who require immunosuppressive therapy, vaccination 2–3 months prior to therapy may be appropriate. **Conclusions:** Prophylactic antiviral therapy and vaccination help significantly reduce morbidity and mortality from zoster reactivation in patients receiving immunosuppressive therapy.

Keywords: Herpes Zoster, Immunosuppressive therapy, Vaccination

10.26 NASOPHARYNGEAL TUBERCULOSIS WITH INTRACRANIAL EXTENSION-A CASE SERIES

Shanila Ahmed, Syed Muhammad Mustahsan, Faiza
Ilyas, Bushra Jamil
Departments of Medicine and Emergency Medicine,
Aga Khan University

Background: Tuberculosis is one of the common and chronic infectious diseases and no part of the body is immune to it, most common site that it involves is lungs. Nasopharyngeal tuberculosis is one of the rare types of extra pulmonary tuberculosis. Upper respiratory involvement is uncommon and involvement of nasopharyngeal 0.1% is rarer still. Owing to the rarity of disease less cases are reported and no prospective study has been done. Nasopharyngeal tuberculosis has similar clinical presentation as that of nasopharyngeal carcinoma that makes the diagnosis more complicated and thus makes histopathologic evaluation necessary for diagnosis. Treatment for total of six months with anti-tubercular is recommended. Upper airway tuberculosis can be highly contagious, like pulmonary tuberculosis; therefore, early diagnosis and proper management are important. The clinical presentation of tuberculosis of the head and neck region can be varied and often misleading.

Case Report: We would like to report two cases of nasopharyngeal tuberculosis in which patients had history of chronic ear infection and later on found to have tuberculosis with intracranial extension. After the confirmation of the diagnosis patient was started on anti-tubercular treatment after which significant reduction in disease was noticed. Initial symptoms of nasopharyngeal tuberculosis could be non-specific and can easily be misdiagnosed as malignancy, syphilis or fungal infections. The literature is scarce on nasopharyngeal tuberculosis; so far we have gone through only little number of cases. To the best of our knowledge no such cases have ever been reported from Pakistan. Though the incidence of this disease is very low but its possibility should be kept in mind as one of the differential diagnosis of nasopharyngeal mass.

Conclusion: Nasopharyngeal tuberculosis is a rare entity and can remain under or misdiagnosed as patient may present with non specific symptoms only. Tuberculosis should be one of the differential diagnoses of nasopharyngeal lesion. If treated properly it has an excellent prognosis and complete resolution of disease is guaranteed.

Keywords: Nasopharyngeal Cancer, Pulmonary Tuberculosis, Otitis Media

10.27

INFECTION CONTROL IN DENTAL SETTINGS

*Nighat Alam, Uzma Gull, Nooreen Ahmad, Sherdad Hussain
Medical College, Aga Khan University*

Abstract Infection control nowadays is a very critical issue in the dental healthcare settings. Control of cross-contamination is essential for both patient and dental health care providers for the safe practice. The routes of transmission can be either direct or indirect contact for example through salivary fluids, blood, airborne droplets, and contaminated objects, instruments or environmental surfaces. By following proper guidelines provided by OSHA (Occupational Safety and Health Administration) and CDC (Centers for Disease Control) transmission of infection can be minimized to the greater extent. Pathogens can be transmit to the rest of the body through the mouth and can manifest diseases for example, Human immunodeficiency virus (HIV), Hepatitis, Herpes, Bacterial endocarditis and Chicken pox. For getting authentic and evidence-based knowledge about infection control literature review has been done. Consulted reliable sources such as peer-reviewed articles, some systematic reviews and also the journal of applied oral science and international journal of dentistry. As a health-care provider understanding about the risk factors, prevention and infection control strategies is essential for us. So the rationale for selecting this topic is to enhance our knowledge. Emphasis should be placed on recommended standard precautions; including the use of personal protective equipment, appropriate methods of disinfection and sterilization. The written protocol should be in place for each clinical setting. Such efforts may lead to safe and effective practice. **References** Biofilms, W. (2000). Waterborne biofilms and dentistry: the changing face of infection control. *J Can Dent Assoc*, 66, 539-41. Dagher, J., Sfeir, C., Abdallah, A., & Majzoub, Z. (2017). Infection Control Measures in Private Dental Clinics in Lebanon. *International Journal of Dentistry*, 2017. Elkarim, I. A., Abdulla, Z. A., Yahia, N. A., AlQudah, A., & Ibrahim, Y. E. (2004). Basic infection control procedures in dental practice in Khartoum—Sudan. *International dental journal*, 54(6), 413-417. Garg, S. K., Mittal, S., & Kaur, P. (2012). Dental unit waterline management: historical perspectives and current trends. *Journal of investigative and clinical dentistry*, 3(4), 247-252. <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5217a1.htm> Jiwani, N. (2011). A Silent Storm: Hepatitis

C in Pakistan. Khanghahi, B. M., Jamali, Z., Azar, F. P., Behzad, M. N., & Azami-Aghdash, S. (2013). Knowledge, attitude, practice, and status of infection control among Iranian dentists and dental students: a systematic review. *Journal of dental research, dental clinics, dental prospects*, 7(2), 55. Munagapati, B., & Mallikarjun, M. (2011). Guidelines On Infection Control In The Dental Laboratory. Neves, J. K., de Araújo Martins, M. F., Germinio, J. E. S., de Andrade, M. C., & de Oliveira, S. R. (2017). Effectiveness of Disinfection of Anesthetics Tubes in Oral Surgery—An in Vitro Study. *Journal of Pharmacy and Pharmacology*, 7, 424-429. Occupational Safety and Health Administration (2014). OSHA law and regulations. Pawar, A., Garg, S., Mehta, S., & Dang, R. (2016). Breaking the Chain of Infection: Dental Unit Water Quality Control. *Journal of clinical and diagnostic research: JCDR*, 10(7), ZC80. Sebastiani, F. R., Dym, H., & Kirpalani, T. (2017). Infection Control in the Dental Office. *Dental Clinics*, 61(2), 435-457. Wilkins, E. M., & McCullough, P. A. (1989). *Clinical practice of the dental hygienist* (Vol. 235, pp. 297-298). Lea & Febiger.

Keywords: Infection control, cross-contamination, dental health care

10.28

IS THERE A CHOLINERGIC SURVIVAL INCENTIVE FOR NEUROTROPIC PARASITES IN THE BRAIN?

*Abdul Mannan Baig
Department of Biological and Biomedical Sciences,
Aga Khan University*

Abstract The reason why some parasites specifically target the brain remains a mystery. Often, it is seen that the primary site of infection is quite remote from the brain, but an eventual involvement of the cerebral tissue is seen to occur that becomes the cause of death of the majority of the patients. In the absence of a clear preferential reason for targeting the brain, chemicals produced by the nervous system, which have miniature concentrations in the blood, appear to set up a chemical attraction that eventually causes them to migrate to the neural tissue. We studied the possible chemicals of neural origin that can lure the parasite toward the brain, enabling them to cause meningoencephalitis. The identification of these chemicals could be of enormous prophylactic significance as blocking the chemotaxis of neurotropic parasite by antagonist drugs and chemicals can prevent

cerebral infection and provide ample time to eradicate the parasites at the primary site of infection.
(doi:10.1021/acschemneuro.7b0037)

Keywords: Acanthamoeba, Naegleria fowleri, Rat Lunworm

10.29 INCIDENCE OF HUMAN IMMUNODEFICIENCY VIRUS INDICATES LATE DIAGNOSIS OF INFECTION IN HIGH RISK GROUPS IN KARACHI, PAKISTAN

*Zahra Hasan, Sharaf Ali Shah, Rumina Hasan, Shoaib Rao, Mars Stone, Michael Busch
Pathology and Laboratory Medicine, Aga Khan University, Bridge Consultants Foundation, Karachi and Blood Systems Research Institute, USA*

Introduction The Human Immunodeficiency virus (HIV) affects 36.7 million individuals world-wide. Pakistan was considered a low HIV incidence setting however; HIV prevalence has recently found to be increasing in high-risk groups including, people who inject drugs (PWIDs) and transgender sex workers (TGWs). We tested for recent infections amongst PWIDs and TGs to the address the dynamics of HIV transmission in Pakistan.

Methods The study involved a Multistage cluster sampling method. One hundred HIV positive patients each from PWID and TG groups were included. All study subjects were recruited within 24 weeks of their diagnosis. Serum samples were tested using the Maxim HIV-1 Limiting Antigen Avidity (LAG) EIA (Maxim Biomedical, Inc.) ELISA test to determine recent infections.

Results The mean age of all study subjects was 29.5 y; PWIDs, 28.5 y and TGs, 30.4 y. Thirty-one percent of PWIDs and 21% of TGs were in heterosexual marriages, while the remaining were single. Overall, 42.5% were employed; 34% of PWID and 46% of TG groups. Of the study subjects, 40% had no formal education. Incidence assay testing determined that 80% of PWIDs and 84% of TGs did not have evidence of recent infections.

Conclusions Study of HIV incidence in PWID and TG groups in Karachi determined that 80 % or more had Long-term infections at the time of diagnosis. This indicates delays in diagnosis and treatment of HIV in these individuals which may reflect on their health seeking behavior as well posing a considerable transmission risk. This study highlights a need for identification and treatment of HIV infected individuals to restrict spread of the disease in high-risk

individuals and their contacts. Incidence of Human Immunodeficiency Virus indicates Late Diagnosis of infection in high risk groups in Karachi, Pakistan

Keywords: HIV, high-risk, incidence

10.30 IMPACT OF MATERNALLY DERIVED PERTUSSIS ANTIBODY TITERS ON INFANT WHOLE-CELL PERTUSSIS VACCINE RESPONSE IN A LOW INCOME SETTING

*Romesa Ibrahim, Asad Ali, Momin Kazi, Saad B. Omer
Department of Paediatrics and Child Health, Aga Khan University*

Background: Maternal vaccines against pertussis are not yet recommended in the developing world. Besides unclear burden estimates, another concern is that transplacental transfer of maternal pertussis antibodies could result in attenuation of immunogenic response to DTwP primary vaccination series in infants. We aimed to determine whether higher levels of pertussis maternal antibody titers attenuate immunogenic response of infants to DTwP vaccination series given at 6-10-14 weeks.

Methodology: We enrolled 261 pregnant women and their infants from four low-income settlements in Karachi, Pakistan. The outcomes were infant antibody titers for Pertussis toxin (PTx), Filamentous hemagglutinin antigen (FHA), Pertactin (PRN) and Fimbriae type 2/3 (FIM)- from birth through 18 weeks. Linear regression models were used to determine the association between higher maternal antibody titers and infant immunogenic response to DTwP vaccine. Geometric Mean Ratio (GMR) was calculated as the ratio of infant antibody titers at specified time points against the maternal antibody titers at the time of delivery.

Results : Among infants who received at least two doses of DTwP vaccine, higher maternal antibody titers did not have any effect on infant post-immunization antibody titers against all pertussis antigens: At eighteen weeks of age, the adjusted GMR for pertussis toxin was 1.00 (95% CI: 0.95-1.04), for FHA was 1.00(95% CI: 0.99-1.01), for PRN was 1.00(95% CI: 0.98-1.03), and for FIM was 1.00(95%CI: 0.98-1.03).

Conclusion: Transferred maternal pertussis antibodies did not attenuate immunogenic response of the infant to DTwP primary vaccination series given at 6-10-14 weeks of age.

Keywords: Maternal vaccination, whole-cell pertussis, immunogenicity

10.31

HUMAN METAPNEUMOVIRUS IN HOSPITALIZED CHILDREN LESS THAN FIVE YEARS OF AGE IN PAKISTAN.

Romesa Ibrahim, Mohammad Tahir Yousafzai, Asad Ali
Department of Paediatrics and Child Health, Aga Khan University

Background: Acute respiratory infections (ARI)s are the second leading cause of death in children less than five years of age worldwide. Human Metapneumovirus (hMPV) is associated with around 5-7% of the total pneumonia admissions in children, although significant regional differences exist. The aim of this study was to determine the proportionate age distribution and clinical spectrum of hMPV associated hospitalizations in a cohort of children up to five years of age.

Methodology: We prospectively studied 1150 children who were admitted with ARI at the Aga Khan University Hospital (AKUH), Karachi - from August 2009 to June 2012. We collected throat swabs and tested them for hMPV using real-time PCR. Multivariable log binomial regression analysis was done to identify the associated factors of hMPV infection in our study cohort.

Results: Out of 1150 children enrolled, we found that the incidence of hMPV was 84/1150(7%). The clinical characteristics of hMPV infection in our study cohort were predominantly cough (85%), fever (73%), nasal congestion (69%) and shortness of breath (68%). Of the HMPV positive subjects, almost two-thirds were less than 12 months of age. We demonstrated that the most common presenting diagnosis in hMPV positive infants was pneumonia, followed by asthma and bronchiolitis. We further observed that hMPV was identified year round, peaking in both February and August, and was significantly associated with sore throat. (Adjusted RR 2.23; 95% CI 1.42-3.52).

Conclusion: We showed that infants less than twelve months of age, in a cohort of children up to five years of age, were at greatest risk of acquiring hMPV infection. Therefore, there is a critical need to effectively develop vaccine strategies against hMPV.

Keywords: Human Metapneumo Virus, Acute Respiratory Infection, Pakistan

10.32

ROLE OF INCREASED MYCOBACTERIUM TUBERCULOSIS ANTIGEN-INDUCED GENE EXPRESSION AND PROTEIN SECRETION OF PRO-INFLAMMATORY CYTOKINES IN DIABETICS LATENTLY INFECTED WITH TB

Kiran Iqbal Masood, Martin E. Rottenberg, Javaid Khan, Muhammad Irfan, Qamar Masood, Alnoor Akber, Shoaib Rao, Fatima Haroon, Zahra Hasan
Departments of Pathology & Laboratory Medicine, and Medicine, Aga Khan University and Karolinska Institutet Sweden

Introduction: Pakistan ranks fifth in high tuberculosis (TB)-burden countries and seventh among countries with high prevalence rates of diabetes mellitus (DM). DM is a risk factor for TB and worsens disease outcomes. Furthermore, Mycobacterium tuberculosis (MTB) infection can induce glucose intolerance and worsen glycemic control in diabetes. Suppressor of cytokine signaling (SOCS)-1 and -3 molecules regulate cytokine signaling and are important in maintaining an immune balance. In TB, interleukin (IL)-6 up-regulation induces SOCS3, which is also a negative regulator of insulin signaling.

Objective: To investigate the effect of MTB infection on immune responses of DM patient with specific impact on host cytokines required for mycobacterial clearance.

Methods: Gene expression by RT-PCR for SOCS1, SOCS3, interferon-gamma (IFN- γ), IL-6, and tumor necrosis factor alpha (TNF α) was performed using MTB antigen (PPD) stimulated whole blood stimulated from DM (n = 21) and healthy controls (EC, n =24) with and without latent TB infection (LTB) and TB patients (TB, N=17). Secretion levels of IFN- γ , IL-2, IL-4, IL-5, IL-6, IL-12, IL-13, and TNF α were determined by Th1/Th2 Cytokine Human ProcartaPlex™ kit.

Results: Gene expression data showed that PPD induced IFN γ was down-regulated in ECs as compared to TB (p=0.002). SOCS1 was up-regulated in DM as compared with EC (p=0.0127), IL6 was up-regulated in DM-LTB and TB as compared with EC (p=<0.001) and also in DM-LTB as compared with DM (p=0.025). TNF α was increased in DM-LTB as compared with DM (p=0.0152).

Cytokine secretion data in response to PPD showed that IFN γ was increased in DM-LTB as compared with TB (p=0.03), DM (p=0.01), LTB (p=0.03) and EC (p=0.01), IL12 and IL6 were increased in DM-LTB as compared with TB, DM and LTB, IL2 was increased in DM-LTB as compared with DM (p=0.02), LTB

($p=0.01$) and EC ($p=P<0.001$) and also in DM as compared with EC ($p=0.03$). TNF α and IL13 were increased in DM-LTB as compared with DM, LTB and EC

Conclusions: We observed increased pro-inflammatory cytokines in DM-LTB group. This indicates predisposition to inflammatory response increasing the likelihood of disease progression.

Keywords: Cytokines, TB, Diabetes

10.33

UTILITY OF INTERFERON-GAMMA RESPONSE ASSAYS FOR DIAGNOSIS OF MYCOBACTERIUM TUBERCULOSIS IN PATIENTS WITH MULTIPLE CO-MORBIDS IN AN ENDEMIC SETTING

*Bushra Jamil, Kiran Iqbal Masood, Zoya Rani, Maheen Hassan, Zahra Hasan
Departments of Pathology & Laboratory Medicine and Medicine, Aga Khan University*

Introduction Interferon gamma response assays (IGRA) detect T cell based Interferon-gamma (IFN γ) to Mycobacterium tuberculosis (Mtb) antigens and are useful for the identification of individuals infected with Mtb. In high tuberculosis (TB) endemic settings IGRAs should be interpreted carefully due to the high exposure to Mtb. Various factors which affect immunity such as nutritional status, lymphocyte counts and steroid treatment affect IGRA results. **Objective** We assessed the value of using IGRA as a rule out test for TB in a tertiary care settings in patients with and without comorbid conditions. **Method** We reviewed 149 cases where patients were tested using the Quantiferon-Gold (in tube, QFT) assay. Patient clinical history, results of laboratory and radiological investigations were evaluated. QFT results were classified as positive or negative based on standard cut-off (>0.35 IU/ml). Cases were divided into Active TB, probably Latent TB or Non-TB cases based on microbiological, radiological and clinical investigations. Comorbid conditions for each case were identified. **Results** Overall, of the 149 cases tested, 56 cases were QFT positive and 73 were QFT

negative. Amongst the 56 with positive QFT, 33 patients had active TB; 10 with pulmonary and 23 with extra-pulmonary infections and 21 were classified as latent TB. Of the QFT negative cases, 20 had active TB; of these 65% had lowered lymphocyte counts; 9

were on steroid treatment, 1 had autoimmune disease and 1 had received chemotherapy. There were 73 QFT negative cases where the patients had no signs of active TB. These included those with chronic kidney disease ($n=5$), renal transplant patients ($n=2$), diabetes ($n=10$), autoimmune disease ($n=6$), chronic liver disease ($n=2$), COPD ($n=1$), malignancy ($n=10$), epilepsy ($n=1$), chronic heart disease ($n=1$), multiple co-morbid (n=11) and others with no known- co-morbid (n=24). **Conclusions** This data reveals the value of QFT as a rule out test in a tertiary care setting where patients may have multiple comorbid. However, it is important to interpret data keeping in mind the immune status of the individual, in cases where lymphocyte counts may be depressed, the chances of QFT being positive may be reduced and a false negative may be present.

Keywords: Quantiferon, TB, co-morbid

10.34

PROGRESSIVE OUTER RETINAL NECROSIS IN TB PATIENT WITH UNDIAGNOSED HIV AIDS MISDIAGNOSED AS ETHAMBUTOL TOXICITY

*Muneeba Ahsan Sayeed, Bushra Jamil
Department of Medicine, Aga Khan University, Karachi*

Background: Progressive outer retinal necrosis (PORN) is an aggressive, necrotizing inflammation of retina caused by herpes varicella zoster virus. It is also known as Varicella zoster virus retinitis (VZVR) that typically affects people with advanced AIDS or severely immunocompromised due to chemotherapy. In this, patient would present with sudden visual loss leading to blindness. Here we are reporting a case of TB lymphadenitis with undiagnosed HIV having a CD4 count of 38 presenting with sudden visual loss that led to blindness secondary to Varicella PORN which was initially misdiagnosed as optic neuritis secondary to ethambutol toxicity.

Case: It's a case of 50 years old gentleman who initially presented with cervical lymphadenopathy that on biopsy showed chronic granulomatous inflammation and was managed for Tuberculous lymphadenitis with anti-tuberculous therapy. 2 months later on therapy patient continued to lose weight and developed generalized skin lesions secondary to herpes zoster for which he received Acyclovir for 14 days. On therapy the lesions fade out but did not disappear completely. 1 month later patient developed sudden bilateral complete visual loss with headache and presented to AKU. His MRI brain was done that

showed Inflammatory changes in Optic Nerve so he was started on Steroids pulse therapy thinking of Optic Neuritis and ethambutol was stopped for presumed ethambutol toxicity but had no improvement in symptoms. At this time his HIV serology was checked that came out to be positive with a very low CD4 count of 38. Ophthalmoscopy was done that showed many confluent lesion in retina due to necrosis suggestive of Progressive outer retinal necrosis secondary to VZV. Patient was started on Intrathecal Ganciclovir but due to progressive disease patient died emphasizing the need of early HIV diagnosis in patients with TB and its timely treatment.

Conclusion: Every blindness in TB patient is not secondary to Ethambutol toxicity but there are many other infective causes especially in the background of HIV.

Keywords: Progressive Outer Retinal Necrosis (PORN), Varicella Zoster Virus (VZV)

10.35 HEPATOSPLEENIC ABSCESS CAUSED BY CANDIDA USTILAGO: A PARASITIC PLANT FUNGUS

*Muneeba Ahsan Sayeed, Syed Faisal Mahmood
Department of Medicine, Aga Khan University,
Karachi*

Background: Candida ustilago is a parasitic fungus on grasses. The name Ustilago has been derived from a Latin word ustus meaning 'burnt' because the members of the genus produce black, sooty powdery mass of spores on the host plant parts imparting them a 'burnt' appearance. Its hyphae traverses plants and proliferate to form TUMOR MASSES. These organisms are filamentous in nature; however, they can develop into haploid yeast forms in culture media so are Dimorphic; these factors likely contributed to the initial difficulty in identification of the pathogen in the case presented. Hepatosplenic candidiasis is a very rare disease. Majority of fungal species involved in cases with positive blood culture are *C. albicans*, *C. tropicalis*, and *C. parapsilosis*. *C. ustilago* rarely infects humans and there are few case reports of it causing peritonitis, meningitis and allergic rhinitis. There is no case report on hepatosplenic abscess caused by *C. ustilago* so far.

Case: It's a case of 47 years old gentleman known case of ALL for which he is on Chemotherapy presented with 1 month history of fever, abdominal pain and weight loss. On examination patient was pale and had hepatosplenomegaly. Laboratory investigation

showed normal TLC count with Blood culture showing yeast which was later identified as *Candida ustilago*. Patient was started initially on Amphotericin that was later switched to itraconazole to which he responded well with clearance of blood culture and resolution of abscess on imaging after 6 weeks of therapy.

Conclusion: *C. ustilago* which is a plant fungus can become pathogenic for humans and rarely can even cause hepatosplenic abscess especially in immunocompromised individuals.

Keywords: Candida ustilago; Hepatosplenic abscess

10.36 EMPOWERED NURSES: THE LEADING EDGE OF PATIENT CARE TO IMPROVE HAND HYGIENE PRACTICES

*Farzana Aftab Khawaja, Rozina Khimani, Hasnain
Zafar, Huma Naz
Department of Medicine, Aga Khan University,
Karachi*

In health care settings nurses are the forefront in patients care improvement and prevention of infections. Building a stratagem to boost hand hygiene practice in hospitals and maintain sustainability is a difficult challenge. Therefore, it's important to empower nurses so that they can advocate on behalf of their patients.

The purpose of this study were to analysis and compares the data of hand hygiene compliance audit results, subsequent to raise responsibility and accountability among nurses to achieve the target of >90% and continue lay efforts to remain static. To determine the hurdle and improve existing processes in achieving goal we exploit the cause and effect analysis, six sigma methodologies and pare to-analysis.

Results: we derived the data of hand hygiene compliance within the unit between 2016 and 2017. In january 2016 there was marked declined up to 68% and became little stagnant throughout the february till may from 88% to 85%. Whereas the result showed the highest percentage of (100%) in june and decreased 10% in july 2016. However, the ratios remained the same by 85% between august and september and relatively turn down by 10% during october and november 2016. The rate of hand hygiene practices

fell significantly to 70% in december 2016. While the practices improved reasonably and achieved the target of 90% in january and february 2017.

Conclusion: The nurses play a vital role in prevention and control of infection by maintaining standards of hand hygiene practices. Hence let nurse responsible to stop all health care professionals from spreading infections through hand hygiene.

Keywords: Hand Hygiene, Compliance, Empowered Nurses & Sustainability.

10.37

SUCCESSFUL MANAGEMENT OF MDR PROVIDENCIA RETTGERI ISOLATED FROM SUBGALEAL ABSCESS

*Sara Ahmed, Rashid Jooma, Faisal Mahmood
Department of Medicine, Aga Khan University,
Karachi*

Introduction: Providencia species, particularly Providencia Rettgeri has recently shown carbapenem resistance which is of concern as they are inherently resistant to several antibiotics including Colistin and Tigecycline and these antibiotics are used in treating carbapenem resistant infections. Here we are reporting a case of MDR Providencia Rettgeri isolated from subgaleal abscess which was successfully treated with a combination of Fosfomycin, Meropenem and Colistin.

Case presentation: 23-year-old gentleman presented with a history of road traffic accident in which he sustained multiple fractures. There were multiple facial injuries with nasal CSF leakage, subcutaneous emphysema, pneumomediastinum and left sided pneumothorax for which chest tube was placed. CT brain showed left sided subdural haemorrhage with midline shift so he underwent left decompressive craniectomy and tracheostomy and was kept on mechanical ventilator. During the course of his hospital stay, he developed hospital acquired pneumonia, tracheal cultures grew pan sensitive Pseudomonas Aeruginosa and Providencia Stuarti which was susceptible to Piperacillin/Tazobactam and Meropenem so he was treated with Meropenem. On the fourteenth post operative day, he developed subgaleal abscess for which evacuation was done; pus culture grew MRSA and MDR Providencia Rettgeri which was resistant to almost all antibiotics; susceptible only to Fosfomycin. So he was started on

Fosfomycin, Meropenem, Colistin and Vancomycin. His hospital stay was further complicated by the development of right sided empyema thoracis for which he underwent VATS plus decortication. Postoperatively, he developed SIADH which was managed accordingly. Later on he got better, fever subsided, GCS improved to 9/10 E4M5V (Trach). His antibiotics were continued for a total of four weeks and he was discharged home in a stable condition with a plan for cranioplasty.

Conclusion: Providencia is an infrequent cause of nosocomial infections but the emerging resistance is alarming as very few antibiotics will be left to treat such kind of infections resulting in potentially prolonged hospital stays, increased treatment expenditure and may even prove to be fatal.

Keywords: Providencia, Carbapenem resistance, Subgaleal Abscess

10.38

DENGUE FEVER COMPLICATED BY AEROMONAS HYDROPHILA ENDOPTHALMITIS AND BILATERAL LIMB CELLULITIS

*Nabila Kanwal¹, Matiullah Kamin¹, Nosheen Nasir¹
Department of Medicine, Aga Khan University,
Karachi*

Introduction: Aeromonas hydrophila is a heterotrophic gram negative, rod-shaped bacterium mainly found in areas with a warm climate. Aeromonas species do not commonly cause disease in humans. However, when disease is seen, it often occurs in patients with underlying immunosuppression or malignancy and has a high fatality rate range from 28% to 46% in cases of bacteremia and mostly caused by A. hydrophila and A. veronii biovar sobria. Here, we are describing a case of Aeromonas hydrophila endophthalmitis and bilateral limb cellulitis in a patient recovering from dengue fever. To the best of our best knowledge, this is the first case of dengue followed by aeromonas infection to be reported particularly from Pakistan.

Case presentation: 48 years old gentleman with clinical history of well controlled type 2 diabetes mellitus and hypertension was recently diagnosed with Dengue fever and was in recovery phase. Six days later, he presented with sudden loss of left eye vision along with redness and swelling of bilateral lower extremities and left forearm. He was diagnosed to have left eye endophthalmitis, left arm and bilateral leg cellulitis. He was empirically started on intravenous

ceftriaxone after sending blood cultures, but later antibiotics escalated to vancomycin and piperacillin/tazobactam in view of worsening leukocytosis and possibility of polymicrobial infection. He underwent left vitreal tapping and intravitreal antibiotics were administered. His intraocular culture was positive for *Aeromonas hydrophila* which was sensitive to Ciprofloxacin but the blood cultures did not yield any organism. Vancomycin was stopped and Ciprofloxacin was added along with intravenous piperacillin tazobactam and topical eye antibiotics. He improved clinically in terms of resolution of cellulitis and his leukocytosis as well as other inflammatory markers also started to decrease but despite aggressive management, his endophthalmitis had a rapid course and he did not regain vision in left eye.

Conclusion: Dengue is known to be complicated by gram negative infections but *Aeromonas hydrophila* infection is quite rare. It can present as a very aggressive disease and can have severe consequences.

10.39

SEQUELAE OF EXTRAPULMONARY TUBERCULOSIS AFTER TREATMENT: ADDRESSING PATIENT NEEDS

Jamil B, Shakoor S, Isra Ashraf, safia Awan, Hasan R*
Department of Medicine, Aga Khan University, Karachi

Introduction: Extrapulmonary disease accounts for a significant proportion of all cases of tuberculosis (TB) in endemic areas. Extrapulmonary involvement is seen in >50% of patients with concurrent AIDS and TB. Due to diagnostic difficulties, extrapulmonary disease is often recognized late and, even after cure is achieved, affected individuals continue to suffer due to infectious and non-infectious sequelae.

Methods: Sequelae of extrapulmonary TB were explored through literature review. Additionally, case files of patients presenting to the TB clinics in a tertiary care hospital in Karachi, Pakistan were examined from 2005 to 2015 for age and sex distribution, and common sequelae leading to debilitation. The sequelae of TB can be divided into:
•those of ongoing inflammation, for example, vasculitis in central nervous system infection leading to neurologic deficit, or amyloidosis with renal failure

in longstanding, inappropriately managed cases, or where the diagnosis is missed;

- healing with fibrosis, for example, intestinal obstruction, pericardial constriction, infertility;
- loss of function secondary to bone and joint deformity, for example, gibbus formation and paraplegia in spinal TB.

Results: Of 2053 patients with a diagnosis of extrapulmonary tuberculosis seen at the Aga Khan University hospital, 50.8% were male and 49.2% were female. Mean age was 31.9 + 21.1 years. The common types were TB meningitis (70.9%, n=1457), pericardial TB (6%, n=124), intestinal TB (15.7%, n=322), and spinal TB (7.3%, n=150). Complications of extrapulmonary TB included long-term CNS shunts for TB meningitis, intestinal resection and colostomies in intestinal TB, pericardiectomy in pericardial TB, and paraplegia and spinal fusion for Pott's disease.

Conclusion: Early reliable diagnosis and anti-TB treatment, often with steroids, is essential for control of disease and prevention of complications. Patients need to be monitored clinically and supported psychologically, logistically, and socially to return to lead productive lives after extrapulmonary TB infections.

10.40

CLINICAL SPECTRUM OF CANDIDA AURIS INFECTION: A SINGLE CENTRE EXPERIENCE

Muneeba Ahsan Sayeed, Joveria Farooqui, Kauser Jabeen, Safia Awan and Syed Faisal Mahmood
Department of Medicine, Aga Khan University, Karachi

Background: Candida auris is an emerging antifungal resistant yeast species causing nosocomial and invasive infection. It was first reported in Japan in 2009 when it was isolated from external ear canal. In September 2014 Aga Khan University Hospital experienced an outbreak of C auris and since then this emerging pathogen has been isolated ever now and then. A limited data is available about C auris but in all the studies C auris has been reported as less susceptible or resistant to Azoles including Fluconazole and Voriconazole with variable sensitivities to other antifungal creating a treatment dilemma.

Objective: In this study, we have assessed the clinical spectrum and outcomes of patients affected with C auris that will help in combating this emerging pathogen in a better way.

Methods: Cross sectional study conducted from October 2014 to September 2016

Results: During this study period a total number of 75 patients are studied. Out of these 40 are male (53%),

35 (47%) are female, 58 had comorbidities, 71(95%) had prior history of antibiotics and 28 patients (37%) had history of prior antifungal therapy. It occurred after a median hospital stay of 14.5 days. 28 (37%) had CLABSI, 13(17%) had CAUTI, 21(28%) had asymptomatic funguria. All the *C. auris* strains are resistant to Fluconazole 100%(n=45) while 20%(n=15) are resistant to Voriconazole and only 1 strain (1.3%) was Amphotericin resistant. Overall mortality rate was 40% (n=30) while death due to *C. auris* infection was seen in 12 patients (40%). In this study, we have found that Candidemic patients had increase mortality compared to non candidemias with a p-value of 0.03, patients in ICU and HDU had increase mortality with p-value of 0.01 and comorbidities did not have any impact on the outcome.

Conclusion: From this study, we have concluded that *C. auris* is an emerging multidrug resistant fungus associated with high mortality rate in Candidemic patients that is usually acquired after a median hospital stay of 2 weeks.

Keywords: *Candida auris*, Candidemia

10.42

RISK FACTORS AND OUTCOME DIFFERENCES IN METHICILLIN RESISTANT AND METHICILLIN SENSITIVE STAPHYLOCOCCUS AUREUS SEPTIC ARTHRITIS

Aneela Hussain, Minaz Mawani, Bushra Jamil
Department of Medicine, Aga Khan University,
Karachi

Background: Septic arthritis impacts 2 to 10 per 10,000 patients and impairs joint function in 25 to 50% cases yearly. The most common pathogen is *Staphylococcus aureus*, a virulent organism causing a mortality of 15%. Methicillin resistant *Staphylococcus aureus* (MRSA) is a nosocomial pathogen all over the world therefore a comparison between MSSA and MRSA septic arthritis becomes crucial in our population. To determine the difference in risk factors, mortality and length of hospital stay between MRSA and MSSA septic arthritis.

Method: In this retrospective cross-sectional study patients from 2000 to 2015 with MRSA or MSSA identified in pus culture from the joint or blood (with joint involvement) were identified and the length of hospital stay, mortality and difference in risk factors were viewed.

Results: We gathered 66 patients out of which 46 were men, with mean age (SD) of 51.4(18.9). About 30

patients had MRSA and 36 had MSSA. Most patients (n=61) had one joint involved, the most common joint was the knee joint (n=31), followed by hip (n=21), ankle (n=11, shoulder (n=4) and elbow (n=2). Most patients had native joints involved. The WBC, ESR and CRP were not significantly different across the two categories. There was no difference in hospital stay in both groups (9.6 days for MRSA and 10.3 days for MSSA). MSSA was isolated more in pus culture (34 vs. 22) isolation in blood was almost the same in both (15 in MRSA vs. 11 in MSSA). Also MSSA in blood took lesser days to clear (14 VS 68.5).

Immunosuppressives, transplants, trauma, hemodialysis and CKD were associated more with MRSA. However, CLD, DM, hypertension, central line placement showed no difference. Mortality rate was higher in MRSA.

Conclusion: No differences were found in the inflammatory markers as well as synovial fluid and blood white cell count between patients infected with MRSA and MSSA therefore; these should not be used as a differentiating factor between the two. We found MRSA in patients on immunosuppressives, kidney failure and on hemodialysis therefore appropriate antibiotics should be used in such cases.

Keywords: Septic arthritis, *Staphylococcus aureus*, methicillin resistant

Neurosciences and Mental Health

11.1 DEMENTIA SURVEY AMONGST ATTENDEES OF A DEMENTIA AWARENESS EVENT IN KARACHI, PAKISTAN

*Qurat Khan, Yusra Hanif, Mohammad Zaman Khan,
Shireen Najam
Department of Psychiatry, Aga Khan University*

Introduction: Dementia prevalence, epidemiology, symptomatology, caregiver characteristics, and care arrangement may be different in low and middle income countries (LMICs) than in high income Western societies which led to contextualized dementia research in the last decade. Pakistan is also an LMIC with very limited research related to dementia.

Methods: This study was a pilot survey among the attendees of a dementia awareness session held at the Aga Khan University Hospital in Karachi, Pakistan. A self-reported questionnaire was used to find out about the most distressful and frequent symptoms of dementia, care arrangement, and knowledge about the diagnosis.

Results: Out of the 38 participants who returned filled questionnaires, about half identified the name of dementia as “Alzheimers”, and the other half was not aware of the type. Memory loss was reported as the most prominent and most distressing symptom by all patients and caregivers followed by anger/aggression, and low mood/anxiety. Two thirds of patients/caregivers reported that patients engaged in hobbies or activities and “watching TV” was reported as the most common activity while “exercise” and “listening to music” were reported by the least number of people. Almost all caregivers identified themselves as primary caregivers, reported living in the same house with the patient, and bearing financial cost of care. Half of them were children of patients with dementia. One third of all participants reported having paid help. About 50% of all participants reported the activity as helpful and showed willingness to participate in such activities in future.

Conclusion: The results from this study provide important insight into patients’ symptoms and knowledge about dementia as well care arrangement in Pakistan and has important implications for health care providers in managing patients and their families as well as in designing customized programs and policies.

Keywords: Dementia, Caregiver burden, Lower middle income country

11.2 LEARNING DIFFICULTIES AND THEIR IMPACTS ON CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)

*Sarmad Muhammad Soomar
Nursing Education Services, Aga Khan University*

Attention Deficit Hyperactivity Disorder (ADHD) is a condition mainly faced by children, in which it is difficult for them to sit still and concentrate. These children experience many difficulties in daily lives. One of the major problems faced by children with ADHD is learning difficulty. As they are unable to sit still at a place for long time and their attention span and concentration is lower as compared to other children, so they face issues with their learning as they are unable to understand any concept or learning strategy. In this condition their schooling is compromised at great extent and progression of their learning becomes a trouble. This paper aims to highlight the learning difficulties and their impacts faced by children, who are diagnosed with ADHD. For this purpose an extensive literature review was done from different online Psychological journals and search engines. The key words used for search were learning abilities and ADHD. The articles included in the paper, were looked for relevancy, accuracy and recency of publication. On the basis of the literature review it was revealed that ADHD children commonly experience dyslexia, underachievement, and problems with speech and learning language. Children may become more obsessive, impulsive and feel low self-esteem as a result. In order to help children with ADHD to cope these learning difficulties, interventions that improve attention and concentration are also recommended.

Keywords: Attention Deficit Hyperactivity Disorder,, Children, Learning difficulties

11.3 NOVEL PRESENTATION OF INTRAVENTRICULAR GLIOBLASTOMA MULTIFORME

*Sarosh Madhani, Maria Ahmad, Zeeshan Uddin,
Aneela Darbar
Medical College, Departments of Surgery and
Pathology & Laboratory Medicine, Aga Khan
University*

Glioblastoma Multiforme (GBM) as defined by WHO is a grade IV glioma. Anatomically, this tumor is most

commonly found in the frontal and temporal lobes. However, in rare instances, GBM can also be found in other locations within the central nervous system. One of these rare locations are the ventricles within the brain. In our report, we present two such cases that were endoscopically resected and histologically confirmed to be GBM tumors. The first case is of a twenty-two-year-old woman who presented with neurological and constitutional symptoms, with the MRI showing a hemorrhagic lesion in the third ventricle. She underwent surgical resection of the tumor which was confirmed on histology to be GBM. The second case is of a fifty-three-year-old gentleman presenting with neurological deficits. MRI scan showed a lesion present within the right lateral ventricle. The lesion was surgically resected and was confirmed to be GBM on histopathology. Our report provides detailed clinical and surgical course of these two cases with discussion on radiological and histopathological findings as well as the possible origin of the lesion.

Keywords: Glioblastoma Multiforme, Intraventricular Tumor, Glioma

11.4 COGNITIVE SCREENING OF THE ELDERLY USING MMSE IN SHELTER HOMES IN KARACHI: A QUALITATIVE STUDY

*Laila Akber Cassum, Dr. Keith Cash, Samina Vertejee
School of Nursing and Midwifery, Aga Khan
University and Kuwait University*

**COGNITIVE SCREENING OF THE ELDERLY
USING MMSE IN SHELTER HOMES IN
KARACHI: A QUALITATIVE STUDY** Objective:
The study aimed to assess the ability to recall and define the life experiences of the elderly people who are brought to live in shelter homes in Karachi, Pakistan. It also aimed to identify the impact of cognitive impairment on expression of real life experiences and performance of activities of daily living. *Methodology:* A qualitative methodology, with a descriptive exploratory design, was adopted for the study. In line with the pre-set inclusion criteria, a purposive sample of 14 elderly males and females was selected for the study, from two different shelter homes in Karachi, Pakistan. Elderly people with severe cognitive impairment (falling on the MMSE 0- 10), and severe hearing difficulties was excluded from the study. The Mini Mental State Examination (MMSE) tool comprising of 11 questions was administered to assess the cognitive ability of the participants,

followed by the score analysis using SPSS version 19.0.

Results: The present study used the scores given by M.F. Folstein, Folstein and Fanjiang (2001). Ten participants out of 14 were within the normal cognitive score range, while three participants' were under the category of mild cognitive impairment, and one participant was classified under moderate cognitive impairment on the MMSE instrument. The participants who fell under the category of mild cognitive impairment were having issues with thinking, finding words, concentrating, and reasoning, whereas the one who was identified with moderate impairment was having problems in the domains of memory, attention, judgment, and reasoning. The participants in both the categories were independently performing their ADL, however, their cognitive and functional capacity in the domains of IADL and AADL was not possible to evaluate due to the researcher time limitation.

Conclusion: The study screened cognitive ability among the elderly participants so that those participants could be selected whose ability to recall and define their past experiences was not impaired, and they would be better able to share their rich and genuine experiences of coming into the shelter homes.

Keywords: Cognitive screening, elderly, MMSE

11.5 SIGNIFICANCE OF PULMONARY REHABILITATION AMONG TRAUMATIC BRAIN INJURED (TBI) PATIENTS UNDERGOING CRANIOTOMIES

*Farah Noorali Wasaya
Nursing Services, Aga Khan University*

Introduction/Objective: Neuroscience has one of its rapidly arising sub-specialty Neurological Intensive Care which requires a serious attention towards its patient's multidisciplinary approach. In order to prevent from these complications requires coordinated efforts from medical, nursing and physiotherapy teams. Number of cardiopulmonary complications has been reported among the patient with traumatic brain injuries (TBI) undergoing craniotomies which include inability to maintain airway secondary to pneumonia, hypoventilation and direct injuries to the chest. Therefore, adequate oxygenation and ventilation is significant to increase its delivery to the brain, enhance cerebral blood flow, raise cerebral perfusion pressure and maintain intracranial pressure.

Methods: 25 articles from last 10 years were systematically reviewed.

Results: Studies have shown that prolong intubations, mechanical ventilator support and inability to maintain airway can lead to pneumonia among 60% of patient with the severe head injuries. Hence, an effective pulmonary rehabilitation and conventional chest physiotherapy techniques if routinely practiced can result in X-rays resolution and improved Arterial Blood Gasses (ABGs). Moreover, Brain Trauma Foundation recommends maintaining PaO₂ >60 mmHg and arterial oxygen saturation >90% for oxygenation and ventilation of traumatic brain injury (TBI) patients

Recommendation/Conclusion: In conclusion, following craniotomies, patients with traumatic brain injuries (TBI) requires a strict pulmonary rehabilitation in order to prevent cardiopulmonary complication such as pneumonia. In addition, Neurological intensive care unit with specialized team is recommended to achieve multidisciplinary goal.

Keywords: Craniotomies, Head Injuries, Rehabilitation

11.6 RETROSPECTIVE REVIEW OF CHILDREN ADMITTED WITH SOMATIC COMPLAINTS AT PEDIATRIC UNIT OF A TERTIARY CARE HOSPITAL IN KARACHI, PAKISTAN

*Arshalooz Rahman, Shela Hirani, Amber Tahir
Department of Paediatrics & Child Health and School
of Nursing & Midwifery, Aga Khan University and
Jinnah Sindh Medical University*

Background: Children with functional somatic symptoms (FSS) often present with chronic symptoms severe enough to result in decreased quality of life, healthcare seeking behavior and skepticism in general pediatricians due to timely non-diagnosis is a major issue. Neurobiological alterations and adverse psychosocial factors contribute to FSS. This research aims to study presence of undiagnosed psychiatric disorder and adverse psychosocial factors contributing to somatization.

Methods: Retrospective approach was adapted and pre-recorded patient-centered data of five years (2008-2012) of the pediatric ward of Aga Khan University Hospital in Karachi, Pakistan was utilized. Medical records of patients admitted with complaints of bodily symptoms and diagnosed with a psychiatric disorder were identified and retrieved, manually. Data was entered and analyzed using SPSS v.23.

Results: Of 20,608 admissions, 67 (0.63%) of all ward admissions had somatic complaints and after evaluation, were diagnosed with a psychiatric or

conversion disorder (CD). Most common presentations were pseudoseizure (n=15, 22.3%) and headache (n=11, 16.4%). Most common psychiatric diagnoses were Conversion Disorder (CD) (n=38, 56.7%) and Major Depressive Disorder (MDD) (n=10, 14.9%). History of physical/verbal abuse and parental marital discord were significant stressors for CD. 17.9% (n=12) children had suicidal ideation which included 50% (n=5) children with MDD.

Conclusion: This retrospective analysis concludes somatization with underlying undiagnosed psychiatric disorders such as Conversion and Major Depressive disorder to be a common occurrence in pediatric general practice. Somatization and comorbid psychiatric disorder roots back to emotional trauma or distress such as physical abuse and parental marital discord.

Keywords: Somatization, functional somatic symptoms, conversion disorder

11.9 A JOURNEY FROM MISERY TO EMPOWERMENT

*Nazila Bano Khalid
Department of Community of Health Sciences, The
caravan of Life Pakistan Trust*

Background & Purpose It is estimated that at least 450 million people worldwide have no access to mental health facilities and by 2030 every fourth individual will be inflicted by mental disorders. The determinants of mental disorders are poverty, age, gender, conflicts and disasters. The barriers to mental health are lack of priority and integration into primary health facilities, inequitable distribution of clinics and mental health professionals, and psychiatric rehabilitation centers. The community based outreach mental health and rehabilitation services reformed health structure of developing countries like India, Pakistan, and Sudan and resulted in social integration and reduction of cost of informal-care sector. **Methods** An exploratory case study was conducted in the low income settings of Karachi from December'16 – February'2017. Descriptive data were collected from case files and participants: demographic data (gender, age, marital status, education, current employment) diagnosis; length of contact with mental health services; and previous inpatient service use. The interviews from staff and case files for each participant explored the determinants of access, interventions and treatments received over the preceding three months including medications, psychosocial interventions (family

interventions, cognitive behavioral therapy) and hours per week engaged in a meaningful occupation (attendance at day centre/vocational rehabilitation Centre/voluntary or paid work/educational course)

Results This study describes the findings of first time provision of mental health rehabilitation services in Pakistan context. The services were effective in 95% of people living with family or friends in community and facilitated improvement in social functioning, representing a significant level of potentially avoidable family's burden. Almost 60% service users regained the skills for family supported living. The 60% of females were engaged in rewarding activity. About 40% achieved adequate income to support their goals. But for positive impacts of rehabilitation services on individuals with complex mental health problems the community's support is pivotal to ensure ongoing access and sustainability.

Conclusions This study shows that rehabilitation services play a key role in promoting and supporting social inclusion for individuals with enduring mental illness by providing support to gain access to housing, employment and social activities. This has important implications in reducing the mental/physical health and social burden for service users with severe mental health problems and their families and for society in general. The recipe to success is in understanding the community's need, education about mental illness, diagnosing & treating clients for mental illness, developing readiness for rehabilitation in their own environment and presenting a hopeful future of functional & productive life

Keywords: Community Outreach, , Rehabilitation, Mental Health services

11.10

FACTORS ASSOCIATED WITH DEPRESSION AMONG ADULT PRIMARY BRAIN TUMOR PATIENTS DIAGNOSED IN PAST FIVE YEARS AT A TERTIARY CARE HOSPITAL IN KARACHI, PAKISTAN: AN ANALYTICAL CROSS-SECTIONAL STUDY

Anum Sadruddin Pidani, Amna Rehana Siddiqui, Iqbal Azam, Shahzad Shamim, Adnan A. Jabbar, Shameel Khan

Departments of Community Health Sciences, Surgery, Oncology and Psychiatry, Aga Khan University

Background: Primary brain tumors are ranked highest among those cancers which causes greater emotional and psychological burden for the patients. They are often associated with emotional distress, depression,

and anxiety. Studies report depression rates among primary brain tumor patients ranges from 15% to 40% with highest rates among Glioma patients. Depression is a heterogeneous illness with numerous causes associated with it. Patients diagnosed with primary brain tumors develop depression due to the contribution of several individual-related, tumor-related, and disease-related factors. Ascertainment of these factors will enable healthcare providers to identify high risk patients earlier in the course of treatment in order to provide them with psychological help. This will not only precludes progression of diseases but will prevent treatment failure, eventually improve quality of life which is the one of the most essential goals of treatment for primary brain tumor patients.

Objective: The objective of the study is to determine the association between depression and patient-related, treatment-related and tumor related factors among adult primary brain tumor patients diagnosed in past five years at a tertiary care hospital in Karachi, Pakistan.

Method: An analytical Cross-sectional study will be conducted at Aga Khan University Hospital. All the adult primary brain tumor patients who will meet eligibility criteria will be included in the study via purposive sampling. Data analysis will be done on STATA version 12.0. The outcome of the study is binary that is depression positive or negative thus; Cox Algorithm will be used to obtain crude and adjusted prevalence ratios. **RESULTS:** Based on the evidences which will be obtained from this study, it is anticipated that patients with high grade primary brain tumors having impaired functional status ($KPS \leq 70$) along with one or more cognitive impairment with a disease duration of ≥ 6 months will be 2 times more likely to have depression.

Conclusion: Evidences obtained from this study will facilitate to propose changes in existing guidelines and policies for treating primary brain tumor patients. These changes specifically include incorporating psychosocial domain in the care of primary brain tumor patients. This specifically implicates preliminary screening for depression at the time of admission along with intermittent screening for all the primary brain tumor patients.

Keywords: Brain Tumor, Depression, Associated Factors

11.11

FREQUENCY AND SEVERITY OF DEPRESSION IN VITAMIN D DEFICIENT PATIENTS VISITING OUTPATIENT CLINICS OF A TERTIARY CARE HOSPITAL IN KARACHI-PAKISTAN

Ruhma Ashraf

Department of Family Medicine, Aga Khan University

Introduction: Depression is one of the leading causes of disability worldwide and is on the rise globally with an estimated 350 million people affected. A low plasma 25-OH vitamin D3 level is a universal risk factor for a wide range of diseases and in several studies, low levels of serum Vitamin D have been identified as a risk factor for depression. Low vitamin D status is especially a widespread problem in South Asia, including Pakistan, with frank vitamin D deficiency common in all age groups, from neonates to the elderly. There is emerging experimental evidence that suggests that metabolites of 25(OH)D can cross the blood brain barrier and 25(OH)D receptors exist in the central nervous system, which raises the possibility that 25(OH)D might be involved in brain and cognitive function. The presence of both vitamin D deficiency and depression in an individual would have significant public health implications, particularly as supplementation with vitamin D is cost-effective and without significant adverse effects.

Objectives: The aim of this study is to determine the frequency and severity of depression in vitamin D deficient patients visiting the outpatient clinics of AKUH.

Methodology: Study Site: AKUH- CHC, consulting clinics and outreach clinics AKUH Karachi. Inclusion Criteria: Males and females >18 and < 65 years of age who are found to be vitamin D deficient on lab reports at the time of visit. Exclusion Criteria: Patients using prior vitamin D supplementation, patients with a history of CKD, patients using antidepressants or other mood stabilizing drugs, pregnant or lactating patients. Non-probability consecutive sampling technique will be used to identify 113 study participants who are found to be vitamin D deficient. A pilot-tested coded questionnaire will be filled by them.

Results: This study is a work in progress.

Conclusion and Recommendations: The results of this study will help to identify the burden and severity of depression in vitamin D deficient patients visiting outpatient clinics in AKUH Karachi.

Keywords: depression, vitamin d deficiency, mental health

11.12

NONCOMPLIANCE: CAUSES AND THEIR EFFECTS ON MENTALLY ILL PATIENTS

Muhammad shoaib, mir baz khan, fazal rabi, Hafiz Sabghatullah

School of Nursing and Midwifery and Departments of Paediatrics & Child Health and Community of Health Sciences, Aga Khan University

Introduction: compliance is also refer as adherence. Compliance is the degree of positive behavior towards the advised therapeutic regime or a patient correctly follows medical advice. Most commonly, it refers to medication or drug compliance. However, non-compliance is one of the major issues in psychiatric patients. The effects of non-compliance could result poor prognosis, relapse of psychotic symptoms, self-harm and harmful to family members and to the community.

Objective: The aim of this paper is to highlight the underlying issues and effects of non-compliance on patient, family and community.

Method: Systemic review was conducted on recent literature to explore the reported causes and its effects.

Results: The current literature on the phenomenon reports several reasons of the non-compliance of therapeutic regime among psychiatric patients. First, most of the patients refused to continue their medication because of its long duration. The Second reason for non-adherence is the side effects of psychiatric medicines. Third, patient's insight related to disease process and management. Next, patient's values and cultural belief and last the financial issues. The literature reports different effects of non-compliance on patients, family and the community. The first most common affect is in a non-compliant patient that he may end up into relapse and re admissions in a psychiatric setting. Second, they are at the risk of self-harm and homicidal acts. This may lead to their rejection in family and community and may labelled or stigmatized.

Conclusion: It is important to explore the causes and effects of non-compliance among clients with mental illness. This will provide guidance healthcare professionals to prevent address the issues through counselling, psycho-education and insight building.

Keywords: noncompliance, mental illness, therapeutic regime

11.14

EFFECTS OF CO-ADMINISTRATION OF INDIGENOUS HERBS SAFFRON AND CHAMOMILE ON DEPRESSION IN ALLAXON INDUCED DIABETIC RATS

Saara (Ahmad) Muddasir Khan, Malik Hassan Mehmood, Asra Khan
Department of Biological and Biomedical Sciences,
Aga Khan University

Diabetes mellitus is one of the most common metabolic disorders with momentous concerns in humans and results due to reduced production of insulin (type I) or resistance to its effect (type II and gestational). The present study was aimed to determine the neuropsychological insufficiencies particularly depression produced following allaxon-induced diabetes in rats. Rats were made diabetic by the intra-peritoneal administration of 160 mg/kg allaxon which prompts type-1 diabetes through damaging "β-cells" of pancreas. Body weight, food and water intake was monitored daily. Open field test (OFT) model with its sub sections being latency (L), time spent in the corner (TC_o), time spent in the center (TC_r), number of rearing (NR) and number of squares crossed (NSC) and forced swim test (FST) were executed for the assessment of ambulation and depression-like symptoms. After 10 days of diabetes induction the exploratory activity of rats was monitored by OFT while depression-like symptoms in rats were analyzed by FST. Results showed that there was no significant effect of allaxon -induced diabetes on body weight but food and water intake of STZ-induced diabetic rats was significantly increased. Exploratory activity in diseased control rats (DC) with significant decrease in L, TC_r, NR, NSC in OFT while TC_o with significant increase as compared to the healthy control rats (HC) and diabetic rat groups treated with herbal drugs saffron (S) and saffron combined chamomile (SC) treated rats. Likewise, FST showed significantly decreased attempts to save life in DC rats as compared to HC, S and SC rats. Thus, it may be suggested that allaxon-induced diabetes alters the brain functions and may play an important role in the pathophysiology of certain behavioral deficits like depression, while the herbal remedies including saffron and combination of saffron and Chamomile may reverse the psychoneurological deficits in the diabetic rats. This finding may be of relevance in the pathophysiology and in the clinical picture, which could be related to an altered brain serotonin metabolism and neurotransmission and may probably be connected to neuropsychiatric disorders in diabetic patients.

Keywords: depression, diabetes, streptozotocin

11.15

CLINICAL SPECTRUM IN RADIOLOGICALLY DIAGNOSED PATIENTS OF PELIZAEUS MERZBACHER DISEASE: A CASE SERIES

Mustafa Belal Hafeez Chaudhry, Naila Nadeem, Nida Sajjad, Yousuf Husen, Muhammad Anwar Saeed
Department of Clinical Imaging, Aga Khan University
and Rashid Hospital, Dubai, UAE

Background: Pelizaeus Merzbacher disease (PMD) is a rare (1 in 400,000 live births) X-linked recessive leukodystrophy. PMD is caused by proteolipid protein 1 (PLP1) gene mutations with resultant defect in myelination of oligodendrocytes. Radiological diagnosis depends on Magnetic Resonance Imaging (MRI) of brain; demonstrates classical features of diffuse hypomyelination

Material & Method: We retrospectively recruited radiologically diagnosed 5 cases of PMD, 3 boys and 2 girls. One boy and a girl were siblings. After informed consent, parents were telephonically interviewed regarding clinical history, presentation, progression of disease and its physical manifestations. Recent or previous imaging was requested for further radiological assessment.

Results: The median age was 14 months (range 9 months to 13 years). All 4 families reported consanguineous marriages. 3 families reported perinatal complications in 4 patients; including maternal hypertension (3 patients) and maternal diabetes (1 patient). All children were term births with 3 patients born by caesarean section. Horizontal nystagmus was initial presentation in all subjects, followed by hypotonia that progressed to spasticity in 3 patients and 2 out of them further developed spastic quadriplegia. Delayed arrival of motor milestones was seen in all patients followed by rapid regression in 4 patients and slow regression in 1 patient. Delay in motor functions in all patients with difficulty in maintaining balance and ataxia (5/5), ability to walk with support (2/5), tremors and shaking arms (3/5). Respiratory difficulties and stridor is seen in 3 patients. Decreased cognitive abilities were seen in all patients, chronologically followed by difficulty in understanding commands and expressive speech, further followed by dementia in (2/5 patients). Four patients were able to develop social interaction, but, all had difficulties in feeding, toilet training and sleeping.

Conclusion: PMD can have variable clinical presentation with few classic symptoms. But, it should be suspected in children with regression of milestones.

However, further research to clarify the variations in disease course and relationship of phenotypes to genotypes is needed.

Keywords: Pelizaeus Merzbacher disease (PMD), Leukodystrophy, Magnetic Resonance Imaging (MRI)

11.16 ENDOVASCULAR COIL EMBOLIZATION OF RUPTURED AND UNRUPTURED INTRACRANIAL ANEURYSMS: REVIEW OF A 13-YEAR SINGLE CENTER EXPERIENCE

Mustafa Belal Hafeez Chaudhry, Tanveer ul Haq, Muhammad Azeemuddin, Waseem Akhtar Mirza, Syed Naseer Ahmed, Syed Ather enam, Poonum Khan
Departments of Clinical Imaging and Surgery, Aga Khan University

Objective: To report our experience with the endovascular management(ECE) of ruptured and unruptured intracranial aneurysms(ICA) during the past 13 years at tertiary care University hospital.

Material & Method: A retrospective study was performed at Radiology Department, The Aga Khan University between April 2003 to April 2016. All patients with ICA undergoing ECE were included. They were divided in groups of conventional technique(CT) and remodeling technique(RT) based on technique of ECE. Chi square was used to determine if there was a significant association between procedure technique and success.

Results: In total, 189 patients (95 men and 94 women) underwent ECE, of these, 156(82.5%) patients presented with ruptured ICA & 33(17.5%) patients with unruptured ICA. 50(32%) patients presented with Grade II subarachnoid hemorrhage(SAH) based on the Hunt and Hess scale, followed by 41(26.3%) with Grade III SAH. 33% ICA were located in ACommArtery, followed by 17% in internal carotid artery. Mean age was 46.5 years (Range:10-78 years). 92(48.5%) patients had wide neck ICA. In total, 164(86%) patients were embolised with CT and 25(14%) patients with RT. Overall, 170(90%) patients (46% women and 45% men) underwent successful embolization (greater than 95% occlusion of the dome without any coil prolapsing into the parent vessel). No significant difference in procedural success rate in either group [CT vs. RT: 146(89%) vs. 24(96%); p

Conclusion: Endovascular treatment of ICA is a safe and effective technique for both ruptured and unruptured aneurysms, with a small associated risk of permanent morbidity-mortality.

Results of endovascular aneurysm coiling at our center showed high technical success rates.

Risk of further bleeding is small with vast majority of patients achieving independent recovery.

Keywords: INTRACRANIAL ANEURYSMS, ENDOVASCULAR COIL EMBOLIZATION, subarachnoid hemorrhage (SAH)

11.17 REFERRAL PATTERNS TO PSYCHIATRIC SERVICES: EXPERIENCES AT THE AGA KHAN UNIVERSITY HOSPITAL, KARACHI, PAKISTAN

Humera Saeed, Sana Siddiqui, Murad Khan, Marium Mansoor, Saniya Kamal, Mohammad Zaman
Department of Psychiatry and Medical College, Aga Khan University

Background Liaison psychiatry (or Consultation-Liaison) is critical service integral to all acute hospital settings where it functions as interface between physical and mental health problems. At the Aga Khan University Hospital, a 24-hours consultation service is provided for patients with psychiatric problems referred from general wards and the emergency department of the hospital. Aims and Hypothesis To describe the referral patterns made to psychiatric services from the general wards of AKUH and use the information obtained to optimize the integration of care. The information obtained can also be used to improve training of medical and nursing staff involved in consultation-liaison services.

Methods Data on all cases referred from the general wards of AKUH between years 2015 to 2016 was collected retrospectively from the medical records. Data included socio-demographic details, reason for referral, past psychiatric history, treatment, management suggested and outcome of referral. Data was entered and analyzed using SPSS version 19.0.

Results During the study period more than 1,100 cases were referred for psychiatric consultations of which 434 have been analyzed so far. The preliminary results show there were 53% females of patients ranged from 4 years to 97 years. Most referrals were from Internal Medicine. The most common reason for referral were behavioral problems (31%) and the most common psychiatric diagnosis made was delirium (35%). Most patients were discharged, and nearly half (40%) were called for follow up in clinic.

Conclusion Psychiatric problems in medical inpatients are common and pose diagnostic and management challenges for clinicians. Our study has identified areas of improvement such as late referrals, problems

with documentation, and issues in following through with the recommended management. As a result, we recommend an online form to record and capture data and improve communication. There is also need for training for early recognition of conditions such as delirium.

Keywords: Liaison, mental health, integrated care

11.18

THE INTERSECTION OF ADOLESCENT DEPRESSION AND PEER VIOLENCE: BASELINE RESULTS FROM A RANDOMIZED CONTROLLED TRIAL OF 1752 YOUTH IN PAKISTAN

Nargis Asad, Rozina Karmaliani, Judith McFarlane, Shireen Shehzad Bhamani, Yasmeen Somani, Esnat D. Chirwa, Rachel Jewkes
Department of Psychiatry and School of Nursing & Midwifery, Aga Khan University and South African Medical Research Council

Background: Depression and peer violence are global issues impacting youth. We are presenting baseline data as part of a cluster randomized control trial underway, on adolescent depression, and associated factors among boys and girls in schools.

Method: Cluster randomized control trial is underway for measuring the effectiveness of school-based play intervention program of the NGO Right to Play, in a sample of 1752 grade 6 youth in 40 public schools of Hyderabad, Pakistan. Students responded to Child Depression Inventory (CDI-2), the Peer Victimization Scale (PVS), the Peer Perpetration Scale (PPS), and investigator-driven seven-item School Performance Scale.

Results: We report baseline assessments to examine the prevalence of depressive symptoms, and associated occurrence of peer perpetration and victimization. Boys report significantly more depressive symptoms as well as perpetration and victimization compared to girls ($p \leq .0001$). Our analysis indicates that among boys, depression was found associated with greater age, food insecurity, poorer school performance and working for money, as well as being beaten at home and witnessing beating of their mother by their father or other relatives. Among girls, depression was associated with a younger age, greater food insecurity and poorer school performance. Depression was also associated with a great likelihood of engagement in peer violence, experience of punishment at home, and

witnessing their father fighting with other men or beating their mother.

Conclusion: Engagement in violent behaviors, exposure to violent acts and poverty surfaces as detrimental to mental health in youth age groups, suggesting strong measures to address youth violence, and poverty reduction for positive mental health outcomes in school age children.

Keywords: Peer Violence, Depression, Abuse

11.19

PLASMA NITRIC OXIDE (NITRATE/NITRITE) PROFILING IN PATIENTS WITH ACUTE STROKE PRESENTING TO THE EMERGENCY DEPARTMENT OF A TERTIARY CARE HOSPITAL IN A LOW TO MIDDLE INCOME COUNTRY: AN OBSERVATIONAL CROSS-SECTIONAL STUDY.

Shahan Waheed, Ayaz Ghouse, Rubaba Naeem, Ayeesha Kamran Kamal, Nathan Bryan, Asad Iqbal Mian

Departments of Emergency Medicine and Medicine Aga Khan University and Department of Biological & Biomedical Sciences, Baylor College of Medicine, Houston, Texas.

Introduction: Acute stroke incites an inflammatory reaction in the microvasculature of brain which activates formation of nitric oxide (NO) metabolites (nitrate and nitrite) that can be measured in plasma. We aim to investigate NO metabolites in patients diagnosed with acute stroke and compare nitrate and nitrite values between ischemic and hemorrhagic stroke.

Methods: Cross-sectional study at the emergency department of Aga Khan University Hospital (AKUH) Pakistan for a period of one year. Patients presenting to the emergency with symptoms of acute stroke, blood and other specimens were collected as per standard of care. The specimens to be assayed for NO were frozen at -80C and shipped in batches to the university of Texas Houston for analysis by high performance liquid chromatography. Data was analyzed using SPSS 18. Data is expressed as mean+SD value. NO levels between ischemic and hemorrhagic stroke were compared by Student's t test. *Results:* Out of 75 patients, 61% had ischemic stroke while 38.7% had hemorrhagic stroke. The mean serum nitrite concentration of acute stroke patients was 1.8 +8.8 and mean serum nitrate concentration of acute stroke patients was 24.7+17.3. The mean serum nitrite

concentration of ischemic stroke was 0.73+21.7 and mean serum nitrite concentration of hemorrhagic stroke was .5+14. Area under the curve for nitrite was 0.69 compared to nitrate that is better or predicting its association with stroke.

Conclusion: Plasma nitrite levels were higher in patients with ischemic stroke. NOx values can be used to estimate prognosis of patients with acute stroke with the help of other diagnostic modalities.

Keywords: Stroke, Nitric Oxide, Nitrite and Nitrate

11.20

TO ASSESS THE COMPLIANCE WITH METABOLIC MONITORING OF PATIENTS WITH ANTIPSYCHOTIC MEDICATIONS IN A TERTIARY CARE HOSPITAL, KARACHI.

Humera Saeed, Syeda Maheen Batoool, Rabeeka Aftab, Mohammad Zaman, Department of Psychiatry and Medical College, Aga Khan University

To assess the compliance with metabolic monitoring of patients with antipsychotic medications in a tertiary care hospital, Karachi. Humera Saeed¹, Syeda Maheen Batoool², Rabeeka Aftab³, Mohammad Zaman⁴

Introduction Metabolic syndrome (MetS) also known consists of dyslipidemia, hypertension, hyperglycemia and abdominal obesity. Mental health problems like schizophrenia, bipolar affective disorder and the use of second generation antipsychotics (SGA) are associated with a high risk of developing metabolic syndrome and associated complications. Guidelines have been proposed to diagnose and treat MetS, but the compliance to these protocols is less than sufficient.

Objectives To assess the compliance of monitoring metabolic symptoms associated with second generation antipsychotics according to the standards of NICE guidelines. Secondly, we also aim to develop a workable standardized protocol.

Methodology A total of 385 patients admitted to psychiatric ward from February 2015-January 2016 were included in the study. Case files were reviewed to obtain relevant clinical information. Results Assessment of height, weight, pulse, blood pressure, movement disorders, level of physical activity and nutritional status were measured in all patients. Fasting blood glucose was measured in 99 (26.5%), glycosylated hemoglobin (HbA1c) in 39 (10.4%), blood lipid profile in 44 (11.8%) and prolactin in 3 (0.8%) patients. Less than half of the patients (118, 31.6%) underwent ECG investigation. Slow upward

titration of the medication (331, 88.5%) and a trial of at optimum dosage (343,81.7%) were routinely seen. Overall physical health and patient well-being was recorded in a significant number of our study subjects (310, 82.9%). A significant number of physical and biochemical parameters were not routinely monitored. **Discussion** Our study reports findings consistent with previous literature. With the findings we hope to highlight important concerns and make recommendations. This will not only reduce the risk of a number of possible complications secondary to antipsychotic medications, but will also improve patient adherence and compliance to the pharmacological treatment.

Keywords: MetS, Risk monitoring, Compliance

11.21

VALIDATION OF THE RECENT LIFE CHANGES QUESTIONNAIRE (RLCQ) FOR STRESS MEASUREMENT AMONG ADULTS RESIDING IN URBAN COMMUNITIES IN PAKISTAN

Azmina Artani^{1†}, Shireen Shehzad Bhamani², Iqbal Azam³, Moiz AbdulSultan⁴, Ayeesha K. Kamal^{5†}, Department of Medicine, Aga Khan University, Karachi*

Background: Recent Life Changes Questionnaire (RLCQ) developed by Richard Rahe has enabled quantification of stress by analyzing life events. Contextual adaptation of the RLCQ has permitted us to measure stress in the LMIC setting of the Pakistani population by employing qualitative research methodology. In this paper, following adaptation, we report the validation of the adapted RLCQ.

Methods: This is a criterion validation study. Four urban communities were selected for the study namely Kharadar, Dhorajee, Garden and Gulshan in which households were randomly chosen. Two data collectors were assigned to administer the adapted RLCQ to eligible participants after obtaining written informed consent. Following this interaction, two psychologists interviewed the same participants with a diagnostic gold standard of Mini International Neuropsychiatric Interview (MINI) which is utilized in usual practice within Pakistan to confirm the presence of stress related mental disorders and validate the accuracy of the adapted RLCQ. This would generate the ROC curve for the adapted RLCQ.

Results: The area under the receiver operative curve (ROC) of common mental disorders was 0.64, where sensitivity was 66%, specificity was 56% and the

corresponding cut off from the adapted RLCQ was 750. Individuals scoring more than or equal to 750 were classified as high stress and vice versa. In contrast, the area under the ROC curve for serious mental disorders was 0.75, where sensitivity was 72%, specificity was 60% at the cut off of 800 on the adapted RLCQ. Individuals scoring more than or equal to 800 were classified as high stress and vice versa. The rate of agreement between the two psychologist was 94.32% (Kappa= 0.84).

Conclusion: The adapted and validated RLCQ characterizes common mental disorders such as depression and anxiety with moderate accuracy and severe mental disorders such as suicide, bipolar and dysthymia with high accuracy.

Trial Registration: Clinicaltrials.gov NCT02356263. Registered January 28, 2015 (Observational Study Only).

Keywords: Recent life changes questionnaire, validation, Pakistan.

11.22

IMPROVING FUNCTIONAL STATUS AMONG ACUTE STROKE SURVIVORS USING SHORT 5 MINUTE VIDEOS AS AN EDUCATIONAL TOOL – A RANDOMIZED CONTROLLED TRIAL (MOVIES4STROKE)

Khoja Adeel¹, Kamal Ayeesha¹, Magsi Shahvaiz¹, Munaf Aresha¹, Peera Zahra¹, Shakeel Saadia¹, Ahmed Masood¹, Alqera Mazen¹, Muqet Abdul², Zaidi Fabiha², Sayani Saleem², Azam Iqbal³, Saleem Sarah³

¹Department of Medicine, Aga Khan University, ²e-Health Resource Center, Aga Khan Development Network, ³Department of Community Health Sciences, Aga Khan University

Background: To obtain a true sense of morbidity and disability after an acute stroke, the heterogeneous nature of the types and severities of stroke must be taken into account. To quantify this, various stroke scales have been formulated.

Methods: Movies4Stroke was a randomized controlled, outcome assessor blinded, parallel group, single center superiority trial. Participants having an acute stroke, medically stable, with mild to moderate disability and having a stable primary caregiver were included in this trial. Intervention group participants had the movie program software installed in their

android device which allowed them to view 5 minute videos on stroke related topics. Control group participants received standard of care at an internationally accredited center with defined protocols. Primary outcome measure, functional status with respect to stroke severity and disability was ascertained between the two groups.

Results: 310 stroke survivors along with their caregivers were recruited. According to modified Rankin scale, at baseline, majority were falling in the category of slight to moderate disability (54% in intervention group vs. 61% in control group). At 12 months, majority shifted to having no to minimal disability (71% in intervention group vs. 59% in control group). Similarly for NIH Stroke Scale, at baseline, majority were falling in the category of moderate stroke (49% in intervention group vs. 43% in control group). At 12 months, majority shifted to having minor stroke (51% in intervention group vs. 46% in control group). For Barthel index at baseline, bulk was falling in the category of total dependency in performing routine activities (51% in intervention group vs. 50% in control group). After one year, majority shifted to performing routine activities independently (68% in intervention group vs. 59% in control group).

Conclusion: Functional status of stroke survivors improved after twelve months as evident by shift in categories of all three scales.

Keywords: Stroke; Behaviour Modification Intervention; Mobile Health; Functional Status, Low Middle Income Countries

Funding Source/Country: Fogarty International Center – National Institutes of Health/USA

Trial Registration:

<https://clinicaltrials.gov/NCT02202330>

11.23

IMPROVING STROKE RELATED KNOWLEDGE AMONG CAREGIVERS OF ACUTE STROKE SURVIVORS USING VIDEO-BASED TEACHING PROGRAM – A RANDOMIZED CONTROLLED TRIAL (MOVIES4STROKE)

Khoja Adeel¹, Kamal Ayeesha¹, Munaf Aresha¹, Peera Zahra¹, Magsi Shahvaiz¹, Shakeel Saadia¹, Ahmed Masood¹, Shahnawaz Saba¹, Artani Azmina¹, Muqet Abdul², Zaidi Fabiha², Sayani Saleem², Azam Iqbal³, Saleem Sarah³

¹Department of Medicine, Aga Khan University, ²e-Health Resource Center, Aga Khan Development Network, ³Department of Community Health Sciences, Aga Khan University

Background: Globally, Pakistan ranks sixth when it comes to population size, and its inhabitants are particularly susceptible to suffer from stroke. Post stroke impairment mainly presents itself as physical, mental or cognitive, and can limit the stroke survivors' capacity to perform his/her daily living activities independently. This disability has a strong impact, not only on stroke survivors, but their caretakers as well.
Methods: Movies4Stroke was a randomized controlled, outcome assessor blinded, parallel group, single center superiority trial. Participants having an

acute stroke, medically stable, with mild to moderate disability and having a stable primary caregiver were included in this trial. Intervention group participants had the movie program software installed in their android device which allowed them to view 5 minute videos on stroke related topics. Control group participants received standard of care at an internationally accredited center with defined protocols. Primary outcome measure, stroke related knowledge with respect to risk factors, emergency preparedness, stroke rehabilitation and medications was ascertained between the two groups at first, third, sixth, ninth and twelfth month post-discharge follow-ups respectively.

Results: Three hundred and ten stroke survivors along with their caregivers were recruited. At each follow-up visit; stroke related knowledge was significantly increased among participants in the intervention group as compared to the control group. Mean (\pm SD) along with *p*-value (chi-square statistics) between the two groups for **first follow-up** was 30.97 (\pm 11.09) vs. 19.37 (\pm 7.63), *p*-value <0.01; **second follow-up** was 37.88 (8.28) vs. 17.60 (7.25), *p*-value <0.01; **third follow-up** was 35.11 (6.33) vs. 21.53 (5.46), *p*-value <0.01; **fourth follow-up** was 34.83 (6.45) vs. 22.80 (5.70), *p*-value <0.01; **fifth follow-up** was 27.76 (7.99) vs. 21.10 (7.38), *p*-value <0.01.

Conclusion: Stroke related knowledge significantly increased among study participants in the intervention group as compared to the control group at each follow-up visit.

Keywords: Stroke; Behaviour Modification Intervention; Mobile Health; Stroke Knowledge, Low Middle Income Countries

Funding Source/Country: Fogarty International Center – National Institutes of Health/USA

Trial Registration:

<https://clinicaltrials.gov/NCT02202330>

11.24

BILATERAL POLYRADICULITIS FOLLOWING EPIDURAL ANALGESIA WITH BUPIVICAINE

Sarah Hasan Siddiqui¹, Mughis Sheerani²
¹Department of Medicine, Aga Khan University, Karachi, ²South City Hospital

Case Summary: A 42 year old male developed rapid onset bilateral leg weakness following epidural analgesia which he was receiving for post-operative pain control. He had undergone partial Gastrectomy for locally advanced gastric carcinoma. On examination he had bilateral flaccid paralysis of legs, areflexia in lower limbs and variable sensory

impairment up to T 9 dermatome. MRI spine did not reveal any compression. Nerve conduction study demonstrated abnormal motor NCS with either no response or very low amplitudes in lower limbs. Repeat MRI spine after 4 weeks demonstrated thickening and enhancement of cauda equina nerve roots representing radiculitis. Patient is currently bedbound with no significant improvement in his neurological status.

Conclusion: Neurotoxicity following central neuraxial blockade is a rare complication and bupivacaine has been implicated. Permanent neurological damage can occur very rarely and this should be kept in mind while administering epidural analgesia.

Keywords: Polyradiculitis, epidural analgesia, Bupivacaine, cauda equina syndrome

11.25

SAFETY AND EFFICACY OF LOW DOSE T-PA AS INTRAVENOUS THROMBOLYTIC THERAPY – EXPERIENCE AT AKUH

Haris Hakeem¹, Ammar Zaman Khan², Masood uz Zaman¹, Jaleed Gillani³, Mohammad Wasay¹
¹Department of Medicine, Aga Khan University, Karachi

²Department of General Surgery, BBH, Rawalpindi
³Zia-ud-Din medical college, Karachi

Objective: To determine the safety and efficacy of intravenous t-PA at a dose of 0.6mg/kg in acute stroke patients at Aga Khan University hospital (AKUH) and compare the results with those of 0.9mg/kg dose in safe implementation of thrombolysis in stroke monitoring study (SITS-MOST).

Methods: This retrospective observational study was conducted at AKUH. Hospital records of patients

receiving intravenous t-PA for ischemic stroke thrombolysis from Jan, 2007 to Oct, 2016 were reviewed. Primary safety outcome variables included symptomatic intracerebral hemorrhage after start of thrombolysis treatment and death within three months (mRS 6). Secondary efficacy outcome variable included functional independence (mRS 0-2) at three months.

Results: Of the 79 patients included in the final analysis, 52 were male (66%) and 27 (34%) were female. Median pre t-PA NIHSS was 12 (IQR 8-15). Mean door to needle time was 96 minutes (SD 31) vs 68 minutes (SD 30) in SITS-MOST. The proportion of patients with symptomatic intracerebral hemorrhage according to the SITS-MOST criteria was 0 % at AKUH vs 1.7 % in SITS-MOST, whereas according to the Cochrane/NINDS definition it was 3.8 % at AKUH vs 7.3 % in SITS-MOST. Functional independence (mRS 0-2) was seen in 50.6% of patients at AKUH vs 54.8 % of patients in SITS-MOST at three months.

Conclusion: Low dose intravenous thrombolytic therapy for ischemic stroke patients was safe and efficacious in our patient population and yielded comparable results with those of SITS-MOST.

11.26

ARE WE ACHIEVING OPTIMAL WARFARINIZATION? – PATIENTS' TIME IN THERAPEUTIC RANGE AT A TERTIARY CARE HOSPITAL IN PAKISTAN

Haris Hakeem¹, Ammar Zaman Khan², Kashif Aziz³, Ayesha Abbasi⁴, Anam Haider³, Bushra Moiz⁵, Mohammad Wasay¹

¹Department of Medicine, Aga Khan University, Karachi

²Department of General Surgery, BBH, Rawalpindi

³Section of Internal Medicine, Department of Medicine, ⁴Department of Emergency Medicine,

⁵Department of Hematology, Aga Khan University, Karachi

Objective: To determine percent time in therapeutic range of INR (TTR) for patients on long term anticoagulation with warfarin and to determine the percentage of patients with a mean TTR of less than 65%.

Methods: This retrospective observational study conducted at Aga Khan University hospital (AKUH). Hospital records of patients on long term anticoagulation were sought from Jan, 2013 to April, 2015. Each patient, who met the inclusion criteria, was followed up during the first year of his anticoagulation

with warfarin. Rosendaal method was used to calculate the TTR. Percentage of patients with TTR < 65% was calculated. Mean TTR was also calculated according to the specialty monitoring anticoagulation, indication for warfarinization and across each three month period during the first year of therapy. Outcomes during the follow up period, both thrombotic and hemorrhagic, were documented.

Results: Of the 380 files reviewed till date, 88 have met the inclusion criteria. Mean TTR was 40.8% (± 25.1). Mean TTR of patients being managed in anticoagulation clinic was 43.9% (± 29.1). 83% patients had TTR below 65%. Total time below therapeutic range was 42.2% (± 29.5) and total time above therapeutic range was 17.0% (± 21.1). Median follow up was 213.5 (118.25-329) days. Median interval of INR testing was 18.9 (10.6-28.6) days. Thromboembolic events were documented in 3 patients (3.4%) and bleeding complications in 11 patients (11.36%).

Conclusion: Mean TTR of patients reviewed till date is below 65%, the level below which warfarin has been found to confer no additional benefit over antiplatelet therapy against thromboembolic events.

11.27

PATTERN OF NEUROLOGICAL DISEASES IN ADULT OUTPATIENT NEUROLOGY CLINICS IN TERTIARY CARE HOSPITAL

Safia Awan, Saad Shafqat, Ayeesha Kamran Kamal, Aziz Sonawalla, Sarwar Siddiqui, Fowzia Siddiqui, Mohammad Wasay

Department of Medicine, Aga Khan University, Karachi

Objectives: The burden of neurological diseases in developing countries is rising although little is known about the epidemiology and clinical pattern of neurological disorders. The objective of this descriptive study was to understand the burden of disease faced by neurologists in tertiary care setting.

Methods: A prospective observational study was conducted of all presentations to neurology clinic over a period of two years.

Results: A total of 16371 out-patients with neurological disease were seen during the study period. The mean age of the study participants were 46.2 ± 18.3 years and 8508 (52%) were male. Headache disorders were present in 3058 (18.6%) of patients followed by Vascular Diseases 2842 (17.4%), Nerve and Root lesions 2311 (14.1%) and Epilepsies 2055 (12.5%). Parkinson's disease was more prevalent in male 564 (70.8%) as compared to female 257 (62.1%); (p value=0.002). Migraine and vertigo

disease were more diagnosed in females as compared to males. Epilepsies were more seen in younger age group. Parkinson's disease was seen in 50.9% at the age between 45 to 65 years, and the frequency was increased with age.

Conclusion: Headache, stroke, epilepsy, dementia and Parkinson's disease as well as Psychiatric disorders are frequently encountered neurological diseases in adult patients. Mass-awareness Public program is essential to remove misconceptions regarding neurological diseases.

11.28 RESEARCH PARTICIPANTS' PERCEPTIONS AND EXPERIENCES OF THE INFORMED CONSENT PROCESS IN CLINICAL TRIALS AND OBSERVATIONAL STUDIES AT KARACHI PAKISTAN

Dilshad Begum, Rozina Karmaliani, Robyna Khan & Saleema Gulzar
Clinical Trial Unit, Aga Khan University

Background: Ethical and legal doctrines mandate informed consent from the research participants and their legal representatives before enrolling them in any clinical research. Empirical evidence asserts that there are ethical issues and challenges related to conducting clinical research in resource poor settings. According to the US national health registry system Pakistan has 335 registered trials and it is the second leading country, after India, in South Asia in the number of registered trials.

Objectives: To explore the participants' perceptions and experiences of informed consent process in clinical research. To assess the participants' understanding on basic elements of the informed consent.

Methodology: Design: Qualitative Exploratory - descriptive

20 participants were recruited with purposive sampling strategy.

Results: Data showed that information about research studies was partially disclosed. Research participants with higher level of education have better understanding of the informed consent as compared to those who have less education. Most of the participants showed altruism as motivating factor for participation. Research participants preferred to discuss informed

consent with family and then take a shared decision with the research investigators after getting all the information.

Conclusion: This study aimed to explore the research participants' perceptions and experiences regarding informed consent in clinical trials and observational studies. Findings revealed that the participants' comprehension and understanding of the basic elements of the informed consent was low, especially with low level of education. The reasons for poor understanding were incomplete disclosure, lack of time to explain the study, and participants' unfamiliarity about research. Hence, the study suggests improvement in policies and guidelines, education and training of the study team, and proper monitoring to assess the compliance.

Public Health

12.2 DOSE-RESPONSE OF COTTON DUST EXPOSURE WITH LUNG FUNCTION AMONG TEXTILE WORKERS: MULTITEX STUDY IN KARACHI, PAKISTAN.

Ali Naureen Akber, Nafees, Asaad Ahmed, Fatmi,
Zafar, Azam, Syed Iqbal
Department of Community Health Sciences, Aga Khan
University

Background Cotton dust exposure among textile mill workers lead to impaired lung function. However, only few studies have investigated the dose-response relationship between cotton dust and lung function. We aimed to determine the dose-response relationship between cotton dust exposure and lung function among textile workers. **Methods** This cross-sectional survey was conducted from January-March 2016 and included 303 adult male textile workers from spinning and weaving sections of five mills in Karachi. We collected data through a translated version of American Thoracic Society respiratory questionnaire (ATS-DLD-78A) and using spirometry. Mill-level airborne cotton dust was measured over an 8-12 hour shift through UCB-PATS (University of California, Berkeley – Particle, and Temperature Monitoring System). Multiple linear regression was used to determine the association between cotton dust exposure and lung function assessed through the three indices; Forced Expiratory Volume in first second (FEV1), Forced Vital Capacity (FVC) and their ratio (FEV1/FVC). **Results** The mean age of the workers was 32.5 (\pm 10.5) years while average lung function indices were: FEV1: 2862.8 (\pm 607.2) milliliter (ml); FVC: 3713.9 (\pm 719.5) ml and FEV1/FVC: 0.7 (\pm 0.1). The median (IQR) cotton dust exposure was 0.61 (0.2, 1.3) mg/m³. The frequency of respiratory symptoms was: cough 15%, phlegm 20% and wheezing 20%. Approximately 27% had obstructive, 13% had restrictive and 1% had mixed pattern of lung function abnormality. After adjustment, every mg/m³ increase in dust exposure led to 200.4 ml (95% CI: -386.3, -14.5) decline in FEV1 and 0.021 (95% CI: -0.037, -0.004) decline in FEV1/FVC (ratio). There was no relationship between cotton dust exposure and FVC. **Conclusion** This study quantifies the exposure-dependent relationship of cotton dust exposure with lung function and determines various associated factors. This work has implications for development of regulations and standards that should be introduced alongside the appropriate precautionary measures in

the textile industry in Pakistan and similar developing countries.

Keywords: Cotton dust, Dose-response and Lung Function, Textile mill

12.3 CAUSES OF MALNUTRITION: A QUALITATIVE STUDY IN A PERI-URBAN COMMUNITY OF SINDH, PAKISTAN

Mehak Pervaiz
Department of Human Development Programme, Aga
Khan University

Introduction: Malnutrition continues to be a major public health problem in a developing country like Pakistan, causing numerous morbidities and mortalities in children. Investigating the determinants of malnutrition is crucial to design effective intervention strategies.

Objective: To identify the underlying causes of children's malnutrition in a peri-urban community in District Sukkur. **Methodology:** Participatory Action Research was carried out during October-November 2016. The problem tree tool for Participatory Rural Appraisal was adapted to facilitate collective reflection and analysis on factors related to children's malnutrition in separate groups of community men and women. The interviews were audio recorded and transcribed precisely. A thematic analysis of the transcribed data was done to draw themes related to determinants of children's malnutrition in the community.

Results: Content analysis of the data revealed four main themes as community men identified children's inadequate food intake and frequent illnesses, whereas community women identified children's non-nutritious food intake and LBW babies as determinants of children's under-nutrition. Under the first theme, community men identified poverty and reduction in breastfeeding practices as a cause of inadequate food intake by children. In the second theme, male participants identified frequent illnesses because of unhygienic environment, large family size and children's preference for unhygienic junk food items as an underlying cause of children's malnutrition. Under the third theme, community women associated less nutritious diet in children with inflation and loss of agricultural land ownership which force them to buy cheap, adulterated, inorganic and low quality food items. In the final theme, female participants related children's malnutrition with LBW babies who are a

result of early marriages, frequent pregnancies and increased workload on women.

Conclusion: The study indicated the underlying causes of malnutrition in children and highlighted the different perceptions of community men and women. It generated actionable knowledge which can be used to design effective strategies for improving children's nutrition in children.

Keywords: Malnutrition, determinants, children

12.5

ASSOCIATIONS OF URINARY SODIUM EXCRETION WITH CARDIOVASCULAR EVENTS IN INDIVIDUALS WITH AND WITHOUT HYPERTENSION: A POOLED ANALYSIS OF DATA FROM FOUR STUDIES

Romaina Iqbal, Muhammad Arslan Khan, Khawar Kazmi, Iqbal Azam
Departments of Community Health Sciences and Surgery, Aga Khan University

Background Several studies reported a U-shaped association between urinary sodium excretion and cardiovascular disease events and mortality. Whether these associations vary between those with and without hypertension is uncertain. We aimed to explore whether the association between sodium intake and cardiovascular disease events and all-cause mortality is modified by hypertension status.

Methods We performed pooled analysis on data from 133 118 individuals participating in four prospective studies and estimated 24-h urinary sodium excretion. This was related with composite outcome of death and major cardiovascular disease events over a median of 4.2 years (IQR 3.0–5.0).

Findings Increased sodium intake was associated with greater increases in systolic blood pressure in individuals with hypertension (2.08 mm Hg change per g sodium increase) compared with individuals without hypertension (1.22 mm Hg change per g; p interaction

Keywords: Sodium intake, U-shaped association, Cardiovascular disease

12.6

PHYSICAL ACTIVITY RELATED BEHAVIORS AMONG ADULTS OF HIGH- (HIC), MIDDLE- (MIC) AND LOW-INCOME (LIC) COUNTRIES: FINDINGS FROM PROSPECTIVE URBAN RURAL EPIDEMIOLOGICAL (PURE) STUDY

Romaina Iqbal, Muhammad Arslan Khan, Iqbal Azam
Department of Community Health Sciences, Aga Khan University

Background Physical activity (PA) is one of the major risk factors associated with cardiometabolic diseases. In this study we aim to describe varying patterns of physical activity among participants from low-, middle- and high-income countries, and their sedentary behaviors. Methods PURE is a prospective cohort study conducted among adults from 21 countries. Physical activity and sedentary behavior was measured subjectively using International Physical Activity Questionnaire (IPAQ). PA is reported in Metabolic Equivalent Task (MET)-minutes/week which expresses energy cost of the activity. Sedentary behavior was measured as minutes/week of sitting time. Results 90,950 adults were recruited from 21 low-, middle- and high-income countries with mean age (SD) of 48.5 (10.4), 51.2 (9.9) and 52.1 (9.6) respectively. Total PA was highest in LIC (2505 MET-min/week), higher among males than females, however in MICs and HICs females reported higher PA than males. A higher amount of PA was seen among participants living in rural areas as compared to their urban counterparts, the greatest disparity being among LICs and also those who were employed. Occupational PA was highest in LICs, with greater activity among males than females, whereas housework PA was the same across all country income levels with females' contribution increasing and males' decreasing upon moving from high- to low income countries. Sitting time had a decreasing gradient from high to low-income countries with no difference according to gender, however rural participants had less sitting time as compared to urban. *Conclusions* Significant gradients of PA levels have been identified globally according to income level, and gender/urban-rural strata. Contextual interventions need to be applied to improve physical activity to healthier levels.

Keywords: Physical activity, Sedentary behavior, Domains

12.7 PREDICTORS OF PHYSICAL ACTIVITY AMONG ADULT POPULATION OF PAKISTAN: RESULTS FROM PURE STUDY

*Muhammad Arslan Khan, Romaina Iqbal
Department of Community Health Sciences, Aga Khan
University*

Introduction Physical activity (PA) is one of the major modifiable risk factors of Cardio-metabolic diseases. The predictors of physical activity have not been studied in an ecological framework among population of Pakistan. We aim to identify the salient individual and neighborhood level predictors in the local context. **Methods** This is a secondary analysis of data from the Prospective Urban Rural Epidemiology (PURE) study, which is a prospective cohort study of adults, aged 35 to 70 years who were enrolled between January 2003 and December 2009. Data from 6 urban and rural communities has been analyzed. PA was used as binary outcome, with a cut-off of 600 MET-mins/week. Block modelling using multi-variate logistic regression has been performed.

Results Mean age of the participants was 47 (8.7) years. Among 1611 individuals, 76.2% had physical activity level of 600 MET-mins/week and above. At the individual level, increasing age (OR: 0.96, 95% CI: 0.95, 0.98), higher education (OR: 0.38, 95% CI: 0.25, 0.58), male gender (OR: 0.68, 95% CI: 0.48, 0.98), and presence of physical disability (OR: 0.64, 95% CI: 0.48, 0.87) led to drop in PA, whereas the need to go outdoors for paid/unpaid work (OR: 1.56, 95% CI: 1.11, 2.20) led to higher level of PA. At the neighborhood level, occurrence of street crime (OR: 0.55, 95% CI: 0.43, 0.72) reduces PA. Participants living in rural communities (OR: 1.63, 95% CI: 1.08, 2.47) have higher PA than those in urban communities.

Conclusion Our study lays down significant predictors of physical activity. Urban planning, reduction in street crime, aides for the disabled, and work place exercise are some of the possible solutions. Changes at policy level are needed to address these predictors.

Keywords: Predictors, Physical Activity, PURE study

12.8 PREDICTORS OF VARIATION IN LUNG FUNCTION OF ADULTS RESIDING IN KARACHI, PAKISTAN

*Muhammad Arslan Khan, Asaad Ahmed Nafees
Department of Community Health Sciences, Aga Khan
University*

Background: Lung function has been seen to vary across different populations in Pakistan. We aim to explore the predictors of lung function among adult population of Karachi, Pakistan. **Methodology:** A cross-sectional survey was conducted from May 2014-August 2015 comprising of 1627 adult participants from 75 randomly selected clusters in Karachi. 25 households per cluster were selected randomly and all eligible participants recruited. Data was collected through a structured questionnaire (ATS-DLD 78A). Pre- and post-bronchodilator spirometry was performed according to the ATS criteria. SPSS v23 was used to construct univariate and multivariate linear regression models.

Results: After adjusting for participants' age, gender and height, significant positive correlation of forced expiratory volume at 1 second (FEV1) was found with Pashtun ethnicity ($\beta=0.11$, $p<0.01$), lower household income tertiles (tertile 1: $\beta=0.08$, $p<0.01$, and tertile 2: $\beta=0.05$, $p<0.01$), and presence of outward opening window in kitchen ($\beta=0.06$, $p<0.01$) whereas a negative correlation existed with history of allergic conditions ($\beta=-0.06$, $p<0.01$) and presence of indoor kitchen (indoor separate: $\beta=-0.06$, $p<0.01$, and indoor conjoined: $\beta=-0.05$, $p<0.05$). Using predicted percentage of FEV1/FVC ratio as outcome and adjusting for age, another model was created which showed that history of allergic condition ($\beta=-0.09$, $p<0.05$), passive smoking ($\beta=-0.10$, $p<0.05$), living in unplanned clusters ($\beta=-0.13$, $p<0.01$) and low skilled professions were negatively correlated with lung function.

Conclusion: This study lays down the blueprint of predictors that should be addressed contextually. It highlights the significance of good ventilation and efficient removal of exhaust from cooking region inside households.

Keywords: Lung function, predictors, Pakistan

12.9 KNOWLEDGE OF HAND HYGIENE AND ITS SELF-REPORTED PRACTICE AMONG SCHOOL CHILDREN IN SINDH, PAKISTAN

Mehak Pervaiz
Department of Human Development Programme, Aga
Khan University

Introduction: Hand washing is a cost-effective disease prevention measure which can save the lives of millions of children. Health behaviors adopted by school children during childhood retains later in life. Thus, promoting appropriate hygiene behaviors among school children is crucial. This study explores the knowledge of hand hygiene and its self-reported practices among school children in Sindh, Pakistan.

Methodology: A cross-sectional study was undertaken on school children enrolled in classes 2nd-5th from 36 schools situated in 8 districts of Sindh. A total of 1109 students (590 boys and 519 girls) were enrolled in the study. A structured questionnaire was used to collect data on knowledge of hand hygiene and its self-reported practices among school children. Data was entered into a computerized program using EpiData 3.1 and was analyzed using SPSS 20.0.

Results: Present study shows that 73% children considered washing hands as an important practice for getting rid of germs and maintaining health, while 25% associated hand washing with cleanliness and removing dirt. Most children (89%) claimed that they wash their hands with soap and water. Proportion of children (11%) using only water for hand washing was highest in rural areas of Kashmore (24%) and Dadu (20%). Over 50% children claimed that they wash their hands after using toilet, whereas only a quarter of school children reported that they wash hands before (23%) and after eating (24%).

Conclusion: The results highlight a gap in hand hygiene knowledge and practices of school children. Sustaining hand hygiene remains a major challenge among schools children as hand hygiene practices are subjective to availability of sufficient resources including place, water and soap in schools and homes consistently. Our study findings highlight the need for effective health promotion efforts. Hand washing and hygiene education in schools should be promoted to encourage proper hand washing behaviors.

Keywords: hand washing, hand hygiene, school children

12.10 SERVICE DELIVERY STRATEGIES TO REDUCE CHILDHOOD STUNTING-A META ANALYSIS

Romaina Iqbal, Ali Humayun
Department of Community Health Sciences, Aga Khan
University

Background Childhood stunting is a physical manifestation of profound mental and developmental delays in growth, measured against a reference growth curve. Stunting and wasting are responsible for 2.1 million deaths worldwide among children. Countries of Sub Africa and East Asia have concentrated burden, nearly 90% of the world's stunted children live in these regions. The causes are: impaired feeding practices, maternal malnutrition and poor sanitation. Good nutrition during the first 1000 days of life can reduce the prevalence of stunting. Strategies such as: promotion of exclusive breast feeding, timely initiation of complimentary feeding, food security, high value of agricultural crops and provision of adequate nutrition are few strategies used so far to prevent childhood stunting.

Objectives This study aims to understand the impact of health systems component- service delivery as a strategy to prevent childhood stunting in developing countries. *Methodology* This review has used methodology according to Cochrane style methodology in preparation and maintaining of this review. The review includes RCT trials, Quasi experimental studies and pre-post studies.

Results The overall finding of this meta analysis indicates that different service delivery strategies such as integration of health services with public health programs, training of community health workers, provision of adequate resources and task shifting by selecting community volunteers and nutrition workers in LMIC's have shown mixed results in childhood stunting. Training CHW's and integrating nutrition in public health models is a viable platform to enhance IYCF practices with other health service delivery options to reduce stunting.

Conclusion The overall findings of this meta analysis of stunting in developing countries show the effectiveness of a few service delivery strategies for reduction of stunting in LMIC's. The care delivered through service delivery inputs for improving health outcome for children aged < 5 years.

Keywords: childhood stunting, service delivery strategies, infant, young, child feeding practices

12.11 HOSPITAL PREPAREDNESS; ARE HEALTH MANAGERS REACTIVE OR PROACTIVE

Shahid Hussain
Nursing Services, Aga Khan University

The purpose of this paper is to illustrate the role of health manager in hospital administration to cope up uncertainty or disaster. The recent literature review is done on disaster preparedness with several important component of management. To evaluate the role of health administrator of Pakistani hospital we ran a questionnaire based on World Health Organization tool for an all-hazards tool for hospital administrators and health managers comprising of total 9 components of hospital preparedness. The nine variables are command and control, communication, safety and security, triage, surge capacity, continuity of essential services, human resource, logistic management and post disaster recovery. Sample size was 16 health administrator comprised of Government, Semi Government and Private hospital mean result of hospital preparedness followed by 20% ,30% and 40% respectively. The hospital preparedness overall in Karachi which is kind of inference to Pakistani health care system is less than satisfactory. Health Care Setting and health policy makers of Pakistan have reactive rather than proactive approach. Health policy and health care policy of Pakistani system needs to be formulated as proactive.

Keywords: preparedness, hospitals, administrators

12.12 VALIDATION OF FOOD FREQUENCY QUESTIONNAIRE WITH 24 HOUR DIETARY RECALL FOR ASSESSING CALORIC INTAKE AMONG PREGNANT WOMEN (15-49 YEARS) OF KARACHI, PAKISTAN

Shahla Naeem, Zafar Fatmi
Department of Community Health Sciences, Aga Khan University

Introduction: Demand for nutritious food and caloric intake naturally increases during pregnancy. Low birth weight (LBW) occurs because of poor maternal health and nutrition. About 18 million low birth-weight babies are born every year, accounting to 14 per cent of all live births. During pregnancy, diet is a relevant predictor of maternal and fetal outcomes and also child development later in life. Recommended caloric intake

of women with normal body mass index (BMI) is 2000 calories per day. When a woman conceives, her caloric requirements increase to 2500 calories per day. Calorie intake among pregnant women has not been assessed robustly in Pakistan. One of the reasons for this dearth of information is that there is no validated tool available for this assessment. In Pakistan, there are very few studies regarding validation of food frequency questionnaire. The aim of this study was to validate food frequency questionnaire with 24-hour dietary recall among pregnant women (15-49 years of age) of Bin Qasim Town, Karachi. *Methodology:* This cross sectional study was conducted at four sites in Bin Qasim Town, Karachi: Cattle Colony, Ali Akber Shah, Ibrahim Hyderi, Ibrahim Hyderi Extension. Data was collected from May 2015 to Jan 2016. A total of 300 pregnant women of 15-49 years were selected using purposive sampling from ongoing surveillance of pregnant women organized by pediatric department of Aga Khan University, Karachi in Bin Qasim town. All pregnant women were eligible for the study except those with co morbid conditions of hypertension, diabetes and asthma and also women with multiple pregnancies were excluded. Socio-demographic questionnaire and a structured validated food frequency questionnaire (FFQ) were administered on the first day to the pregnant women. 24-hours dietary recall questionnaire were administered twice with fifteen days apart for validating the food frequency questionnaire. Height and weight of pregnant women was taken to determine their BMI. Univariate and multivariate linear regression was done between mean of two days 24-hours dietary recall and socio-demographic variables. Pearson's correlation was done between FFQ and 24-hour dietary recall for validation of food frequency questionnaire (FFQ). *Results:* Being Sindhi speaking or other minorities were taking less calories compared to Urdu speaking community [$\beta=-0.14$ (95% CI: -0.30 to -0.03)]. Low income households (less than 10,000PKR) were taking less calories [$\beta=-0.13$ (95% CI: -0.33 to -0.03)] compared to those having income greater than 10,000PKR. Women with unwanted pregnancy had lower caloric intake [$\beta=-0.17$ (95% CI: -0.40 to -0.09)]. Pearson's correlation coefficient (r) between two 24-hour dietary recall was 0.54 and between total calories of FFQ and mean of two days 24-hr dietary recall was 0.57, at p value

Keywords: Validation;, maternal nutrition, food frequency questionnaire

12.13

ASSOCIATION OF AWARENESS ABOUT HEPATITIS C INFECTION WITH PATTERNS OF HEALTH SEEKING BEHAVIOR AMONG HEPATITIS C PATIENTS IN KARACHI, PAKISTAN

Shahina Pirani, Saleema Allana, Tazeen Saeed Ali,
Faisal Wasim Ismail
Department of Psychiatry and School of Nursing &
Midwifery, Aga Khan University

Background: Hepatitis C infection is one of the significant causes of morbidity and mortality throughout the world. In Pakistan, hepatitis C infection rate is 4.8%, which is the second highest prevalence rate among all developing countries. This study aimed to identify the association between awareness about hepatitis C infection and pattern of health seeking behavior among patients living with hepatitis C in Karachi, Pakistan.

Methods: 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. Data were collected through a modified questionnaire on 'awareness about hepatitis C and patterns of health seeking behavior among hepatitis C patients'.

Results: We did not find any association between participants' awareness of hepatitis C infection and their primary contact with a health care provider. However, this study found that only half of the study participants (52%) had correct knowledge of hepatitis C. The patterns of health seeking behavior showed that a majority of the study participants approached a medical doctor (n=368), followed by spiritual healers (n=206), and a few participants approached traditional healers (n=39) and homeopaths (n=11).

Conclusions: The study did not find any association between the patients' level of awareness about hepatitis C infection and their primary contact with health care providers. However, it has been found that patterns of health seeking behavior are strongly related to the patients' cultural practices and beliefs, which affect their choice of health care providers. This study has provided a basis for planning interventional studies aimed at improving patients' level of awareness about hepatitis C and their health seeking behavior.

Keywords: awareness about hepatitis C, Patterns of Health seeking behavior, Karachi, Pakistan, primary contact, medical and non-medical professionals

12.14

DOES ASTHMA CONTRIBUTE TO DENTAL CARIES AMONGST 12-15 YEAR OLD CHILDREN IN KARACHI, PAKISTAN? AN ANALYTICAL CROSS-SECTIONAL STUDY

Wajeaha Zahid, Shafquat Rozi, Farhan Raza Khan,
Muhammad Masood Kadir
Departments of Community Health Sciences and
Surgery, Aga Khan University

Abstract Objective: To determine an association between dental caries and asthma among 12 to 15 years old children. *Methods:* A cross sectional study was conducted on 544 children aged 12-15 years recruited from five private schools in Karachi. Information on asthma was collected through the International Study of Asthma and Allergies in Childhood (ISAAC) questionnaire. Dental caries was assessed using DMFT Index (Decayed, Missing, Filled teeth) index. The data was analyzed using Cox Proportional Hazard algorithm and crude and adjusted prevalence ratios with 95% CI were reported. *Results:* There were 306/544 (56.3%) boys and 238/544 (43.7%) girls in the study. Mean age of children was 13.2±0.05 years. Total number of children with DMFT >0 were 166/544 (30.5%). The decayed component contributed largely (22.8%) to the DMFT score. Overall prevalence of asthma was 109/544 (20%). Prevalence of caries in asthmatic children was 28.4% as compared to 31% among non-asthmatic children. Adjusted prevalence ratio of dental caries in asthmatic children was 0.8 (95% CI 0.59-1.29) after adjusting for cariogenic food intake, age, oral hygiene index and dentist visit, the association between asthma and dental caries turned out to be non-significant.

Conclusion: There was no association observed between asthma and dental caries among the children examined in this study.

Keywords: Dental Caries, Asthma, Children

12.15

NUTRITION TRANSITION: GENERATIONAL CHANGES IN THE PATTERN OF FOOD CONSUMPTION AMONG SCHOOL CHILDREN IN SINDH, PAKISTAN

Mehak Pervaiz

Department of Human Development Programme, Aga Khan University

Introduction: Developing countries are facing a nutrition transition as they shift from traditional diet towards a modern one that includes excessive consumption of calories per gram, processed foods and packaged snacks that lack essential micronutrients and are low in fiber. This study aims to investigate the generational change in school children's diet in Sindh, Pakistan.

Methodology: Participatory Rural Appraisal approach was adopted to explore change in children's diet in five selected communities in Sindh. Decade matrix tool was used with the community men and women. Participants were asked to identify food items included in the current diet of school children and compare those with the constituents of children's diet twenty/thirty years ago. Data from interactions was audio recorded and analyzed thematically.

Results: A general shift from use of natural products to junk food and fast food was found across all sites. Participants from all communities revealed that there was a general reduction in the variety of grains consumed by children as currently, rice and wheat were being widely used and consumption of grains such as sorghum, millet, gram flour and rice flour had become rare. Also, use of refined grains had become more common as opposed to whole grains. Use of natural milk products such as butter and cheese, locally produced honey, desi/organic chicken and eggs, mutton and beef had also decreased significantly in the current diet of school children. Previously used natural products in breakfast like eggs, butter, honey and homemade bread were replaced by bakery rusk and tea. Furthermore, women in all sites expressed concern about reduction in children's usage of vegetables and fruits. Participants related children's reduction in intake of fruits and meat with inflation and low purchasing power, particularly of daily wage earners.

Conclusion: There is an evident generational shift in diet among school children, which can possibly be a health threat for them. Nutrition educators need to consider these dietary changes to assist school children in adoption of healthy dietary practices.

Keywords: Nutrition Transition, Generational Shift, Dietary Pattern, School Children

12.17

ELECTRONIC CIGARETTES USE AND PERCEPTION AMONGST MEDICAL STUDENTS, A CROSS SECTIONAL SURVEY FROM SINDH, PAKISTAN

Nousheen Iqbal, Zain A Khan, Omar Irfan, Faraz Siddiqui, Javaid A Khan

Department of Medicine and Medical College, Aga Khan University

Background: The manufacturers of electronic cigarette (e-cigarettes) are actively marketing their product through electronic and social media. However there is scarcity of data on e-cigarette from developing country like Pakistan. **Methods:** A cross-sectional study conducted between 1st July and 30th September 2016 at five different medical colleges situated in the second largest province of Sindh in Pakistan. The data was collected through a self-administered, questionnaire.

Results: A total of 500 students were included 290(58%) females & 210(42%) males 194(38.8%) were tobacco user (included conventional cigarette, shisha and smokeless tobacco) 328(65.6%) heard about e-cigarette. Frequency of e-cigarette use was 31(6.2%) Daily use of e cigarette was 6(1.2%), sometimes 15(3.0%) and rarely (<once a month) found in 10(2.0%).

Conclusion: Overall, fairly high number of respondents were aware of e-cigarettes, and e-cigarette use was low. Users consider e-cigarettes to be relatively safer than non-users. Users were also demonstrated higher concomitant tobacco use.

Keywords: e-cigarette, medical students, uses and perception

12.18
PREVALENCE AND PREDICTORS OF
UNINTENDED PREGNANCY IN PAKISTAN:
FINDINGS FROM PAKISTAN DEMOGRAPHIC
HEALTH SURVEY 2012-13

Shiyam Sunder Tikmani, Sumera Aziz Ali, Margo Harrison, Sarah Saleem
Department of Community Health Sciences, Aga Khan University

Background: Unintended pregnancies may carry serious consequences to women and their families, including unsafe abortion, delayed prenatal care, poor maternal mental health, and poor child health outcomes. There is a lack of data on prevalence and predictors of unintended pregnancy from Pakistan. Thus, the objectives of this study were to determine the prevalence and determinants of unintended pregnancy in Pakistan.

Methods: This secondary data analysis was performed on data from the 2012-13 Pakistan Demographic and Health Survey (PDHS). A total of 3,756 women were included in the analysis. Multiple logistic regression analysis was performed to identify the predictors of unintended pregnancy.

Results: The prevalence of unintended pregnancy in Pakistan was 19.4 % (95% CI: 18.2% – 20.7%). The multivariable model showed that older women (>35 years) were 7.69 times more likely to have unintended pregnancy as compared to women of younger age (< 25 years)(95% CI: 7.69 – 14.15); compared to women with higher education, uneducated women were 2.48 more likely to have an unintended pregnancy(95% CI: 1.35 – 4.55); compared to women with the highest socioeconomic status (SES), the lowest SES women were 3.03 times more likely to have an unintended pregnancy (95% CI: 1.72 – 5.35); women with termination of their last pregnancy were 1.42 times more likely to experience unintended pregnancy (95% CI: 1.14 – 1.77), and women who did not want the last child are 13.93 times more likely to have an unintended pregnancy (95% CI: 10.11 – 19.23).

Conclusion: The prevalence of unintended pregnancy in Pakistan is high. Age, parity, educational, economic status, termination of last pregnancy, and desirability of the last child are independent predictors of unintended pregnancy. Thus, improved community efforts are required to educate women about family planning methods and their proper use to reduce rates of unintended pregnancy.

Keywords: Unintended pregnancy, Pakistan, Prevalence

12.19
ASSESSMENT OF FACTORS AFFECTING AND
CAUSING HEPATITIS B

Muhammad Waseem Khan, Hayatullah Balochistan University of Information Technology Engineering and Management Sciences

Introduction: Hepatitis B infection caused by HBV and transmitted through HBV contaminated blood, body fluids is a major communicable disease of vertical transmission. HBV infection is endemic in Asia pacific regions including Pakistan. The main objective of this study was to determine factors affecting and causing HBV.

Methodology: A cross sectional research study was conducted where blood sample was taken from suspected HBV patients for diagnosis and confirmation of HBV via HBV Kit. Social and demographical factors were studied with the help of questionnaire.

Results: HBV is a male dominant (40.8%) disease and more dominant in middle age (26-45 years) affecting (41.48 %) individuals. Overcrowding was positively correlated with HBV disease whereas education and socioeconomic status were negatively correlated with HBV.

Conclusions: The study also concluded that hepatitis B disease is promoted through sharing of environment and equipment with HBV infected individual. The present study serves as a primary data and will be helpful in future research on HBV in Balochistan.

Keywords: Hepatitis B, Prevalence, Communicable

12.20
SLEEP DEPRIVATION AND ITS
CONSEQUENCES ON HOUSE OFFICERS AND
POSTGRADUATE TRAINEES

Syed Muhammad Mustahsan, Syed Maroof Ali, Faran Khalid, Ali Abbas Mohsin Ali, Hasan Ahmed, Syed Aizaz Ali hashmi, Maleeka Syedain, Fatima Feroz
Department of Emergency Medicine, Aga Khan University

Objective: To determine sleep deprivation and its consequences on doctors in tertiary care hospitals.

Methods: The cross-sectional study was conducted from February to May 2012 and comprised house officers and postgraduate trainees at 4 public and 1

private tertiary care hospitals in Karachi. The subjects were posted in wards, out-patient departments and emergencies. A proforma was designed with questions about duration of duty hours, sleep deprivation and its effects on quality of performance, and presence of anxiety, depression, medical errors, frequent cold and infections, accidents, weight changes, and insomnia. Duration of 1 hour was given to fill the proforma. SPSS 20 was used for data analysis.

Result: The study comprised 364 subjects: 187 (51.37%) house officers and 177 (48.62%) postgraduate trainees. There were 274 (75.27%) females and 90 (24.72%) males. Of those who admitted to being sleep deprived (287; 78.84%), also complained of generalised weakness and poor performance (n=115; 40%), anxiety (n=110; 38%), frequent cold and infections (n=107; 37%), personality changes (n=93; 32%), depression (n=86; 30%), risk of accidents (n=68; 23.7%), medical errors (n=58; 20%) and insomnia (n=52; 18%).

Conclusion: Having to spend 80-90 hours per week in hospitals causes sleep deprivation and negative work performance among doctors. Also, there is anxiety, depression and risk of accidents in their personal lives.

Keywords: Physicians, Sleep deprivation, decrease work per formance

12.22

EXPLORING THE FACTORS AFFECTING QUALITY OF MENTAL HEALTH SERVICES AT PRIMARY HEALTHCARE LEVEL IN KABUL-AFGHANISTAN, 2016

Mohammad Ismail Zubair, Tazeen Saeed Ali, Nargis Asad, Nargis Rizvi, Atif Riaz
Department of Community of Health Sciences and Medicine, Aga Khan University and Ministry of Public Health-Afghanistan

Background: According to World Health Organization (WHO) around two million Afghans (almost 7% of the total population) suffer from mental disorders. Mental health (MH) became a part of Basic Package of Health Services (BPHS) in 2005 and integrated as community-based MH services to Primary healthcare (PHC) level. Due to this initiative, the availability and accessibility of MH services have significantly increased, however the quality of services is still not up the mark. **Purpose:** Explore the factors affecting quality of MH services at PHC level in Kabul, Afghanistan.

Methods: This qualitative exploratory study was conducted from July to September 2016 at five PHC

clinics in Kabul. A purposive sampling technique was used. In-depth interviews (IDIs) were conducted with patients/patients' attendants and clinics' staff. Key-informants' interviews (KIIs) were conducted with MH senior management staff of MoPH and implementing NGOs. Desk review was also done. The data were triangulated and manually analyzed by using thematic approach. **Results:** The findings of study draw a connection between the main influences on the quality of MH in Kabul—specifically financial constraints, security problems, weak stewardship, corruption, poor management and limited public health capacity of the MH department. Moreover, shortage and low quality of supplies, turnover of staff, high workload, lack of work plan, low salaries and no benefits for clinic staff were perceived to be the major barriers. Above all, fragile monitoring and evaluation system, weak coordination, low public awareness, and lack of community support were found to be the major factors undermining the quality of MH service at PHC clinics a in the country.

Conclusion: Study findings highlighted various factors affecting quality of MH in PHC clinics which need to be considered by healthcare providers, health system managers, and policy makers for improving quality of MH services at PHC clinics in Afghanistan.

Keywords: Mental Health, Quality, Factors

12.23

URBAN URBAN GOVERNANCE AND EQUITY-ORIENTED POLICIES

Nazila Bano Khalid
Department of Community Health Sciences, The Caravan of Life Pakistan Trust

The multipronged approached to address unemployment in people with mental illness
Background & Purpose The global burden of mental diseases is estimated 12 - 15 % disability-adjusted life years (DALYs), and accounts for more than 30 % of all years lived with disability worldwide. This figure is twice the level of disability caused by all forms of cancers, and cardiovascular diseases. The community based services focuses on providing services in community settings close to the population served. It needs functional coordinated efforts of various mental health services, governmental, nongovernmental or private, The Low-resource countries focus on establishing and improving mental health services within primary care settings specialist services, occupational care and vocational rehabilitation .
Methods An exploratory case study was conducted in

the low income settings of Karachi from December'16 – February'2017. The qualitative inquiry (FGDs and interviews) explored the determinants of access and reasons behind utilization of public and private sector psychiatric rehabilitation services. The interviews from staff and case files for each participant explored the determinants of access, interventions and treatments received over the preceding three months including medications, psychosocial interventions (family interventions, cognitive behavioral therapy) and hours per week engaged in a meaningful occupation (attendance at day centre/vocational rehabilitation Centre/voluntary or paid work/educational course) and number of employment of mentally ill people. Results The community mental health services provided the simplest model for mental health and rehabilitation services. The traditional methods offering occupation rehabilitation need harmonization and coordination of a local planning entity among various service components like: health services • social services and welfare agencies • police forces and prisons • nongovernmental organizations, (religious organizations, volunteer groups and for-profit private organizations). This model works on rapid placement in competitive jobs and support from employees. The individual placement model emphasizes “train and place” approach reflecting competitive employment in integrated work settings with follow-up support. This resulted in user satisfaction with significant symptomatic, social and occupational improvement. Conclusions The community mental health services are close to home and include services that address disabilities as well as symptoms; • provide treatment and care specific to the diagnosis and needs of each individual • reflect the priorities of the service users themselves; and skill development and implies coordination among mental health care providers and agencies to improve the quality and productivity of life for people suffering from mental health problems.

Keywords: Community Mental Health Services, Quality Of Health Care, Equity

12.24 ASSOCIATION OF WORKING CONDITIONS WITH OCCUPATIONAL STRESS AMONG MEDICAL TECHNOLOGISTS

Huma Khalid, Kamal Quraishi
Aga Khan University

Healthcare industry is among the highly sensitive areas where demand of concentration and skills are high, several factors may interfere in providing effective healthcare services in which occupational stress is one

of the major factor that may lead to poor service delivery and poor quality of a healthcare system. Occupational stress is one of the major causes that affect the quality of a healthcare system. Higher workload per employee, low salaries, Ignorance of management and lack of focus on motivational strategies might be one of its causes. Furthermore it enhances the overall cost of a healthcare system with reduce quality. In order to evaluate this, data of 132 technologist of private tertiary care hospital was taken and their response was taken. Standard questionnaire of HSE management tool was used for the study. Variable of the study includes working hours, motivation by management, Subordinates Corporation and attitude was correlated. Obtained results showed that working conditions were significantly associated with occupational stress and managers should take a step in order resolve these issues in order to create healthcare system more effective and efficient. Long working hours, unkind words and behavior was significantly associated with occupational stress. Motivation by line manager is inversely proportional to occupational stress.

Keywords: Healthcare technologists, working conditions, Stress

12.25 ASSOCIATION BETWEEN OCCLUSAL INTERFERENCES AND BRUXISM IN INDIVIDUALS AGED 18-40 YEARS OF KARACHI, PAKISTAN: A CASE CONTROL STUDY

Tayyaba Arshad, Mohammad Masood Kadir, Farhan Raza Khan, Syed Iqbal Azam
Departments of Community Health Sciences and Surgery, Aga Khan University

Introduction: The increasing prevalence of bruxism is impairing the quality of life of affected individuals. The exact etiology of bruxism is unclear. The burden of bruxism is 8 – 35% globally, and 5 - 20% regionally; but burden in Bruxism in Pakistan is unknown. Studies have shown the association of some occlusal factors with bruxism in developed countries but information is lacking from Pakistani context. *Objective:* To determine the association between occlusal interferences and bruxism in individuals aged 18 – 40 years in Karachi-Pakistan. *Methods:* We conducted a matched case- control study by enrolling 106 cases of bruxism and 106 controls; matched on age (18-40 years within \pm 5 years). The subjects were selected from January to June 2017 at Dental clinic,

AKUH, Pakistan. We diagnosed cases of bruxism on the basis of history (structured questionnaire) and on dental examination (presence of tooth wear). Whereas, occlusal interferences (such as mediotrusive and laterotrusive) were diagnosed with excursive movement of the jaw using colored articulating paper. Cases were individuals with generalized attrition and history of sleep bruxism, whereas controls did not have generalized attrition. Cases and controls were matched on age. Crude and adjusted matched odds ratio with 95% confidence intervals were reported to explore the association between bruxism and occlusal interferences.

Results: The mean age of bruxers was (32 ± 7.22 SD) years and (30 ± 6.73 SD) years for non-bruxers. In our sample, males were 41.5% (44/106) and 36.5% (39/106), among bruxers and non-bruxers, respectively. Seventy two percent non-bruxers presented with moderate anxiety as compared to 67% of bruxers; assessed through internationally validated tool (HADS). We found strong association between mediotrusive occlusal interference and bruxism (aMOR=3.2; 95% CI=1.5-6.8) by adjusting all other variables in the model when matched for age. Furthermore, after adjusting all other variables in the model, the odds of having group function occlusion among bruxers was nearly 2.3 times (aMOR=2.28; 95% CI=1.1-4.7) that of non-bruxers. However, no association between malocclusion and bruxism could be seen.

Conclusions: There was a statistically significant association between occlusal interference (non-working side/ mediotrusive interference) and bruxism. Hence, it would be useful to identify and manage occlusal interferences among bruxers to an early stage to avoid dental and temporomandibular problems.

Keywords: Bruxism, occlusal interference, tooth wear

12.27

DESCRIPTION OF WOMEN WITH DM DIAGNOSED AT 6 WEEKS POSTPARTUM AFTER A PREGNANCY WITH GDM

Meesha Iqbal, Romaina Iqbal, Iqbal Azam
Department of Community Health Sciences, Aga Khan University

Introduction/Objectives: Women who develop diabetes during pregnancy (Gestational Diabetes Mellitus- GDM) increase their risk of developing type II diabetes post-partum by 70%. We carried out an exploratory nested case control study to understand

differences between women who developed type II DM post partum as compared to those who did not. **Methodology:** Any woman who did not revert back to euglycemic status 6 weeks postpartum was considered as a case. Women who reverted back to euglycemic status were considered controls. The cases and the controls were matched based on age (+ 2 years), hospital of enrollment (AKU or JPMC) and time of recruitment (within three months). Up to a maximum of 5 controls were matched with each case yielding a total sample size of 131 participants. Independent sample t-test, chi square test and fisher exact test were applied. Uni-variate followed by multi-variate conditional logistic regression was run to see the associations between socio demographic characteristics, reproductive history, anthropometric measurements, laboratory investigations and diabetes mellitus at 6 weeks post partum. **Results:** It was seen that the mean systolic and diastolic blood pressure were significantly different between the cases and the controls (Systolic B.P: 115.5 mmHg, 109.1mmHg $p=0.02$; Diastolic B.P: 82.8mmHg, 76.9mmHg p

Keywords: Gestational diabetes, Matched case control study, LDL cholesterol

12.28

ASSESSMENT OF PATIENT SATISFACTION VISITING FAMILY MEDICINE CLINICS IN THE INTEGRATED MEDICAL SERVICE (IMS) CENTRES OF THE AGA KHAN UNIVERSITY HOSPITAL KARACHI

Waris Qidwai, Sannia Perwaiz Iqbal
Department of Family Medicine, Aga Khan University

Introduction Patient satisfaction is an important health care outcome. Patient satisfaction surveys help family physicians to understand their patients' needs, learn about patients' experiences, improve their practices and show patients that their feedback is valuable. To ensure patient confidence in the quality of healthcare, physicians must measure and evaluate patient satisfaction. The objective of this study was to measure the frequency of patient satisfaction with family medicine in the Outpatient Department of the Aga Khan University Hospital (Integrated Medical Services centres) Karachi and also to identify major reasons of patient dissatisfaction.

Material and Methods: A cross sectional survey was carried out in the family medicine clinics (OPD) at the Integrated Medical Service centres, Aga Khan University Hospital, Karachi from 10th January 2017 to 9th July 2017. A total 160 patients consulted at the

OPD of family medicine were included. A validated questionnaire, PSQ-18, composed of 18 items was administered. The scores were divided into not satisfied(1-2), satisfied(5-6), and neutral(3-4). The reasons for dissatisfaction were also assessed. Descriptive statistics were calculated. Stratification was done using chi square test. The p-value ≤ 0.05 was considered as significant.

Results: There were 48 male and 112 female patients. 86.3% were satisfied and 13.8% were dissatisfied. The most common reason (50%) for dissatisfaction was OPD facilities. There was significant association of patient satisfaction with gender, education level, and socio-economic status.

Conclusion: The results showed that higher satisfaction was associated with female, currently married, upper socioeconomic class, and educated higher than intermediate. Patient satisfaction is at the core of patient-centered care. Incorporation of patient satisfaction research findings at the national level can help healthcare institutions to modify structures and processes and outcomes in patient care.

Keywords: Patient satisfaction, Family Medicine, Reasons for dissatisfaction

12.29

EFFECT OF EARLY CHILDHOOD SOCIO-ECONOMIC AND HEALTH STATUS, AND CURRENT EDUCATION ON COGNITIVE OUTCOME 20 YEARS LATER: RESULTS OF A COHORT STUDY OF ADOLESCENTS AND YOUNG ADULTS FROM A NORTHERN PAKISTANI VILLAGE

Wasiat Hassan Shah, Chelsea Hansen, Alexandra Jamison, Danny Carreon, Barbara A. Schaefer, Nicole Hongxuan Zhong, Khalil Ahmed, Saba Wasim, Syed Iqbal Azam, Ejaz Hussain, Elizabeth Thomas, Julia M. Baker, Faran Sikandar, Zeba A. Rasmussen Fogarty, Penn State University, State College, PA, USA, Karakoram International University, Gilgit, Pakistan and Department of Community Health Sciences, Aga Khan University

Objectives: The Young Adult Follow-Up (YAFU) study (2012-2014) interviewed participants enrolled in a 1989-1996 study of children under age 5 in Oshikhandass, Pakistan to assess long-term effects of childhood health and socio-economic status.

Methods: Children aged <5 years enrolled in a longitudinal study underwent weekly surveillance for diarrhea and pneumonia and regular anthropometry during 1989-1996. Follow-up of the cohort conducted

from July 2012-March 2014 included height, weight, blood pressure and Raven's Progressive Matrices testing to measure non-verbal reasoning/cognitive function. Raven's scores for participants were evaluated psychometrically using exploratory and confirmatory factor analytic approaches. Socioeconomic status was calculated based on parental education, occupation and income and type of housing, lighting, heating and household density.

Results: Of 1847 children originally enrolled, 1462 (85% of those alive) were interviewed at 16-29 years of age. Height and weight data for both periods, and Raven's scores were available for 81% of participants (1184/1462). Childhood anthropometry showed that 977 (83%) were stunted at some time prior to 5 years while 19% were wasted. Psychometric results showed evidence of construct validity for the total score. Preliminary results with linear regression modeling reveal that the strongest predictors of Raven's scores were SES status (either as a child <5 or currently), current educational level, and sex. Stunting and wasting were not significant predictors. Higher Raven's scores were found for males, those with higher SES status in childhood or currently and if educational attainment was higher.

Conclusion: Non-verbal reasoning was more affected by SES, educational attainment, and sex than childhood malnutrition. Though the Raven's Progressive Matrices test is reported to be a measure of non-verbal reasoning independent of common confounders such as socioeconomic status and education attainment, within this population it is highly correlated with both.

Keywords: Cognitive development, Raven's scores, longitudinal cohort

12.30

EFFECT OF EARLY CHILDHOOD HEALTH AND SOCIOECONOMIC STATUS ON PERCEIVED HEALTH AND BMI 20 YEARS LATER: RESULTS OF A COHORT STUDY OF ADOLESCENTS AND YOUNG ADULTS FROM A NORTHERN PAKISTANI VILLAGE

Wasiat Hassan Shah, Saba Wasim, Syed Iqbal Azam, Alexandra Jamison, Ejaz Hussain, Elizabeth Thomas, Julia M. Baker, Faran Sikandar, Khalil Ahmed, Zeba A. Rasmussen Fogarty International Center, National Institutes of Health, USA and Department of Community Health Sciences, Aga Khan University

Objectives: The Young Adult Follow-Up (YAFU) study (2012-2014) interviewed participants enrolled in a 1989-1996 study of children under age 5 in Oshikhandass, Gilgit-Baltistan to assess long-term effects of early childhood health and socio-economic status (SES).

Methods: Children <5 years from 1989-1996 underwent weekly surveillance for diarrhea and pneumonia. Follow-up of the cohort conducted from July 2012-March 2014 included height, weight, blood pressure and self-reported health status. BMI categories were defined as: underweight <18.5 kg/m²; normal 18.5-24.9; overweight 25-29.9, obese >30). SES quintiles were calculated based on maternal and paternal education, occupation, income, type of housing, lighting, heating, and household density. Odds ratios were calculated using ordinal logistic regression.

Results: Of 1847 children originally enrolled, 1461 were interviewed at ages 16-29 years. Self-reported health status was described as excellent/good by 30%, satisfactory by 52%, and poor/very poor by 18%. The following factors were associated with reporting excellent/good health status: male sex, being unmarried, being employed full-time, living outside of Oshikhandass, being overweight, never hospitalized or reporting any chronic illness, and having higher SES status as a child. Ever having had diarrhea or pneumonia <5 years did not relate to later self-reported health status.

BMI distribution was: 14% underweight, 73% normal, 11% overweight and 2% obese. Higher BMI was associated with increasing age, never having been hospitalized, and having a non-working mother. Lower BMI was associated with having grown up in a higher SES group and living outside Oshikhandass currently. Childhood pneumonia as a child was associated with lower BMI; diarrhea was unrelated.

Conclusion: Females were more likely to report poorer health than males. While ever having had childhood diarrhea and pneumonia did not affect health status, having had pneumonia was associated with reduced BMI. Further analysis will explore cumulative incidence of diarrhea and pneumonia in early childhood and relationship to later health status.

Keywords: Adolescent perceived health, longitudinal cohort, BMI

12.31

DIETARY PATTERN OF IRON INTAKE FROM INDIGENOUS IRON RICH FOOD IN FEMALE IDA PATIENTS AND CORRESPONDING HEMATOLOGICAL PROFILES: A CROSS SECTIONAL STUDY AT A TERTIARY CARE HOSPITAL IN KARACHI

*Ghazal Masood Farrukh, Zainab Hasan, Samar Ikram, Batha Tariq
Jinnah Medical Dental College*

Globally about two billion people suffer from anemia of various types amongst which Iron Deficiency Anemia (IDA) is the most prevalent type. According to National Nutrition Survey of Pakistan 2011 (NNS), 50.4 % of non-pregnant females suffer from IDA, despite the fact that a variety of low cost, indigenous food sources of iron are available, affordable and accessible in Pakistan. IDA is a risk factor for complications of pregnancy and low birth weight baby and is also an independent cause of morbidity and mortality in all ages. Therefore this study was conducted to determine the dietary patterns of iron intake in females of reproductive age group who had IDA without any other known cause.

Study Design: A cross sectional study. Setting: Three tertiary care centers of Ziauddin Hospital located at Clifton, Kemari and North Nazimabad.

Methods: Reproductive age females suffering from IDA according to their CBC profile within three months prior to the study were selected through purposive sampling. Females taking iron supplements or with any known cause of iron deficiency were excluded. Total of 141 eligible and consenting IDA patients filled a 7 Day dietary recall questionnaire to determine the iron intake of indigenously available iron rich foods and blood sample was collected for hematological profiles and iron studies.

Results: Mean iron intake was 6.41 ± 4.39 mg/day. Median heme and non heme iron intake was 8.0 mg and 28.0 mg per week, respectively. 52.4% of our study population had moderate IDA, 38.2% had pica for one or more substance and almost all suffered from one or more symptoms of iron deficiency. Majority of the population was consuming non-heme sources of iron.

Conclusion: The iron consumption from indigenous dietary sources is very low and contributes significantly to development of IDA. Increasing awareness regarding signs and symptoms of IDA and common dietary sources of iron will contribute to screening, early diagnosis and correction of the iron

deficit thus promoting health and preventing complications.

Keywords: iron deficiency, anemia, indigenous iron sources

12.32 STUDIES TO EVALUATE THE ROLE OF INDIGENOUS HERBS FOR CHOLINESTERASE INHIBITORY AND ANTIACANTHAMOEBIC ACTIVITY.

Sabaha Farhat
Department of Biological and Biomedical Sciences,
Aga Khan University

Introduction: Plant extracts have been used for years in the field of medicine. A wide variety of fruits and vegetables contain nutrients, bioactive compounds and phytochemicals which can be used to treat different pathological conditions. Tea is the most widely consumed beverage in the world. It contains psychoactive and neuroprotective compounds.

Objective: This study aimed to investigate the antiacanthamoebic and cholinesterase inhibitory effects of some natural extracts. *Methodology:* The methanolic extracts are of green chili, medicinal tea, green tea, pomegranate and black cardamom.

Cholinesterase inhibitory activity was measured by using Ellman's method. In vitro 48-well plate assay was used to detect antiacanthamoebic activity.

Results: For this in vitro assay three different concentrations (1mg, 0.1 mg and 0.01 mg) of each extract was evaluated. For cytotoxic assay a higher (100µg) and lower (10 µg) concentrations of each extracts were used to identify antiacanthamoebic activity. Medicinal tea, green tea and pomegranate against Butyryl cholinesterase showed IC₅₀ of 1mg. While green chili and black cardamom showed minimum inhibitory activity (<20%) at 0.01 mg and 0.1 mg respectively.

Conclusion: This study provides the evidence for the presence of cholinesterase inhibitory constituents in green chili, medicinal tea, green tea, pomegranate and black cardamom. Further studies are required to determine their role in the improvement of psychological and neurological pathologies.

Keywords: in vitro, cytotoxic, inhibition.

12.33 HEAT EMERGENCY AWARENESS AND TREATMENT (HEAT): A CLUSTER RANDOMIZED TRIAL TO ASSESS THE IMPACT OF A COMPREHENSIVE INTERVENTION TO MITIGATE HUMANITARIAN CRISIS DUE TO EXTREME HEAT IN KARACHI, PAKISTAN

Naveed Ahmed, Safia Awan, Uzma Rahim Khan,
Shahan Waheed, Rubaba Naeem, Junaid Abdul
Razzak, Nadeem Ullah Khan
Departments of Emergency Medicine and Medicine,
Aga Khan University

Background: Extreme temperature, primarily in the form of heatwaves, causes the second highest number of deaths after those caused by storms. As a result 160,000 deaths, with 94 million people have been affected during last 20 years. Developing countries have lagged in planning and response to heat related illness. Pakistan is one of ten countries with the highest number of people affected by weather-related disasters. The aim is to develop and implement evidence based care strategies for management of people with exposure to extreme heat (EH) in both households and emergency departments in low income settings such as Pakistan.

Methods: Two-arm cluster-randomized controlled trial (CRT) implemented in Korangi Karachi. Community arm consists of 16 clusters and hospital arm consist 4 major hospitals. Baselines data was collected from May to July 2017. Daily environmental temperature correlated with ED deaths, ED visits, and total hospital admissions. 24/7 surveillance was established in hospitals to capture basic demographics, symptoms, ED management and patient's outcome. As for the community arm, data was collected to detect any deaths or admissions to hospital/ED and the cause of such admission through independent survey on tablet. Intervention at the community level will be community mobilization, awareness & training using health messages and pamphlets/flyers. On the hospital side the intervention will be the, training of the emergency physicians with development of evidence based management protocol.

Results: Total cases recruited in the surveillance were 4193. As per hospital records, total ED visits 222597, total ED mortality 1508 and total hospital admissions were 11492. Daily maximum temperature varied from 41.5 to 30°C.

Conclusion: This study will fill several critical gaps in research by carrying out the first CRT comprised of a

set of customized community- and hospital-based interventions in a low-income urban population, with inclusion of a control group of similar socio-economic status in the same city.

Keywords: Cluster Randomized Trial (CRT), Heat emergencies, HEAT bundle

12.34
EVALUATION OF MICROBIOLOGICAL SAFETY OF ARECA NUT-CONTAINING, READY-TO-EAT CHEWING SUBSTANCES COMMONLY AVAILABLE IN KARACHI, PAKISTAN

Hina Zubairi, Anjiya Sulaiman, Seema Irfan, Kulsoom Ghias
Departments of Biological & Biomedical Sciences, Pathology & Laboratory Medicine and Medical College, Aga Khan University

Identification of Microbial (bacterial, fungal) Contaminants in Common Chewing Substances (Ghutka, Chaali, Pan Masala) Hina Zubairi¹, Anjiya Sulaiman², Seema Irfan³ and Kulsoom Ghias¹
1. Biological and Biomedical Sciences, 2. Medical Student, 3. Pathology and Laboratory Medicine; Aga Khan Medical College Areca-nut/betel-leaf/tobacco chewing habits are widely prevalent in many parts of Asia. Studies have determined the high prevalence of use of chewing substances among both children and adults in Pakistan. Reports in the popular press and social media have often focused on the harmful constituents and contaminants of chewing substances and research studies have shown correlation between use of these chewing substances and diseases such as oral cancer, heart disease. We analyzed levels of harmful bacterial contamination in 12 commonly available chewing substances (specifically, 4 samples each of ghutka, paan masala, chaalia) and also determined aflatoxin levels by means of ELISA in these substances. Each sample was done in duplicate. We found high levels of aflatoxin contamination in all the products (ranging from 1.7 to 7.3 mg/kg). The microbial analysis of wet gutka preparations also showed contamination of E.coli and Enterobacteriaceae. Aflatoxin is not only a proven carcinogen but also it has shown to be correlated to growth retardation and immune suppression in children. Since most of the cancers are preventable, there is a need to educate the young population about the harmful effects of these products on the health. By educating the young population, burden of disease can be scaled down. Therefore the secondary objective of this project will be the proposed design of a

sustainable/scalable educational intervention strategy aimed at school-going children to influence behaviour change with respect to consumption of chewing substances in light of available literature.

Keywords: betelnut, aflatoxin, gutka

12.35
FOOT INJURY ON MOTOR BIKE: A CASE REPORT

Numan Hussain, Javed
Department of Paediatrics and Child Health, Aga Khan University

A healthy man aged 37 years presented with deep laceration on the right foot between little toe and forth toe. He was presented to clinic with bleeding with pain scale 4/10. There was active bleeding and the small toe slightly twisted outwards. The wound was cleaned and sutured. He was given tetanus antibodies injection. Laboratory studies showed he is non-diabetic. Dry dressing was applied and given teaching to change dressing at home. The follow-up was planned after a week and the wound was dry and healing with no signs of infection. The injury caused when he was riding a bike on speed of approximately 40 Km/Hr. He was wearing slippers with strips. He noticed the injury when he felt the blood on the foot while he was pushing the brake paddle. According to him the injury may be caused by a sharp glass piece as the road was rough with gravel. Small gravel displaced from road can also cause such injury at this speed. Wearing a proper gear on two wheelers is very important to avoid fatal and non-fatal injuries. Mass awareness regarding usage of safety gears on two wheelers and enforcement of mandatory safety gear usage is important to avoid injuries.

Keywords: Road Traffic Injury, Injury, Road Safety

12.36
COMPARATIVE STUDIES ON DIFFERENT REGIMENS TOWARDS WEIGHT LOSS AND ITS EFFECTS ON GENERAL HEALTH -A REVIEW

Areesha Zubair Noori, Arooba Aslam, Danica David, Hafsa Shams, Saima Mehmood Malhi
Department of Pharmacy, Aga Khan University

Background/Objectives: Obesity has become alarming disease worldwide because of increasing number of problems in public health starting from difficulty in movement to fatality. It is one of the root causes of a

number of diseases prevalent in society. Physicians are targeting to prevent these problems by alleviating the root cause i.e. obesity, by the help of various drugs. There is not a single study that has compared various weight loss strategies followed by the general public and their effects on endocrine system, if any, in Pakistan. Therefore, we have aimed to do that in present study.

Methodology: Literature review from 2000 to 2017 was done through internet using websites such as pubmed, google scholar, medscape, drugs.com etc. Search terms used were “ FDA approved anti-obesity drugs”, etc. The concerns over increased obese population in Pakistan and the effects of anti-obesity treatment strategies on endocrine system and female reproductive health were evaluated through questionnaire distributed among general public and healthcare professionals (n=250).

Results: According to WHO 26% of women and 19% of men are obese in Pakistan (2013) ranking us 9th out of 188 countries. Studies show evidence of the use of dietary measures, exercise and herbal medicines with more popularity (95%) as weight reduction strategy to be followed as compared to use of a pharmacological agent (72%). FDA has approved at least 8 anti-obesity medicines out of which 5 are available in Pakistan. ‘Orlistat’ is commonly prescribed weight reduction agent. Our study shows that herbal drugs regarding anti obesity have positive effects on female reproductive health such as easing menstruation process, promoting ovulation and helping in treatment of endometriosis. Data collection and survey results are in process and will be completed till the conference dates.

Conclusions: After thorough literature review we are able to identify a number of reasons leading to obesity and unawareness towards its treatment in Pakistan i.e. several psychological perceptions about the adverse drugs reactions of anti-obesity medications, poor awareness campaigns, not treating obesity as a major concern and Public perception of abrupt and irrelevant use of herbal remedies without expertise are few of the concerns for the poor health and increasing obesity related diseases in Pakistan.

Keywords: Orlistat, Weight loss strategy, Questionare

Renal/Urology

13.1

SAFETY AND EFFICACY OF SEMI RIGID URS IN THE MANAGEMENT OF PROXIMAL URETERAL STONE LARGER THAN 10MM

Salman Jamil, Muhibullah Bangash, Syed muhammad Nazim

Department of Surgery, Aga Khan University

Background: Large proximal ureteric calculi are more likely to get impacted and infected and usually dealt with flexible ureteroscope but due to non-availability semirigid ureteroscope is still used in developing countries. **Objectives:** To evaluate the efficacy and safety of the use of semirigid ureteroscopy (URS) in the management of proximal ureteral calculi more than 10 mm in size.

Methods: We reviewed a total of 103 patients (70 MALE and 33 FEMALE), who underwent URS for proximal ureteral calculus larger than 10mm diameter from January 2000 to December 2015. All adult patients who had single unilateral radio-opaque proximal ureteral stone larger than 10mm in size were included. Patients with solitary kidney, Uro-sepsis, pregnancy or pre-operative drainage with nephrostomy or JJ stent were excluded. Stone free rate was defined as no evidence of radiopaque stone on X-ray KUB done after 1 week of URS.

Results: During the study period, 2709 URS cases were performed out of which 404 were for proximal ureter stone. About 103 cases had stone size greater than 10mm. All cases were performed as day care procedures. Stones had a mean size of 13.20+/-4.80 mm. Our stone-free rate was 83.5%. JJ stents were placed in 80.2%. Mean operative time was 41.50+/-15.60 minutes. The minor complications included only self-limited postoperative fever (5.82%) and hematuria (15.5%). They were mostly Clavian Grade 1. Other complications were stone migration (4.8%) and urosepsis (1.9%). No major complications were encountered. 17 cases required ancillary procedures mainly ESWL (8.7%), push back and ESWL (4.8%) and secondary URS (2.9%).

Conclusion: Semirigid URS is a safe and successful alternative to open ureterolithotomy for large proximal ureteral calculi with limited access to flexible instruments.

Keywords: Semi rigid URS, Proximal ureteric stone, stone free rate

13.2

COMPARISON OF TWO DEFINITIONS OF ACUTE KIDNEY INJURY IN A PEDIATRIC INTENSIVE CARE UNIT OF PAKISTAN

Parveen Usman, Qalab Abbas, Asim Azim, Habib Qaiser, Anwarhul Haque

Department of Paediatrics and Child Health, Aga Khan University

Objective: The purpose of this study is to compare the performance of two systems of AKI for incidence and mortality rate in our pediatric intensive care unit.

Method: Retrospective chart review study using medical records as the source of data. All patients admitted to the intensive care unit were included. The exclusion criteria were hospitalization for less than 24 hours, known for chronic kidney disease. Data for direct and indirect variables was collected. Student's t test, chi-squared analysis, a multivariate logistic regression and ROC curves were used for the data analysis.

Results: The incidence of AKI using the RIFLE, and KDIGO criteria were 61% and 66.4% respectively. KDIGO identified more patients than did RIFLE (61% versus 66.4%). Compared with patients without AKI, in-hospital mortality was significantly higher for those diagnosed as AKI by using the RIFLE (13.9% versus 4.9%), and KDIGO (13.5% versus 5.3%) criteria, respectively. There was no difference in AKI-related mortality between RIFLE and KDIGO (13.9% versus 13.5%). The areas under the receiver operator characteristic curve for in-hospital mortality were 0.738 for RIFLE and 0.757 for KDIGO. The areas under the receiver operator characteristic curve, for accuracy of KDIGO to identify AKI is 0.90.

Conclusions: A higher incidence of AKI was diagnosed according to KDIGO criteria. Patients diagnosed as AKI had a significantly higher in-hospital mortality than non-AKI patients, no matter which criteria were used. Compared with the RIFLE criteria, KDIGO was more predictive for diagnosing of AKI.

Keywords: AKI, RIFLE, KDIGO

13.3 DIFFERENTIAL RECEPTOR DEPENDENCIES: EXPRESSION AND SIGNIFICANCE OF MUSCARINIC M1 RECEPTORS IN THE BIOLOGY OF PROSTATE CANCER

*Abdul Mannan Baig, Farhat Abbas, Zohaib Rana, HR
Ahmad, Naveed Khan, Vardah Effendi*

*Departments of Biological & Biomedical Sciences and
Surgery, Aga Khan University and Sunway University
Malaysia*

Recent reports on acetylcholine muscarinic receptor subtype 3 (CHRM3) have shown its growth-promoting role in prostate cancer. Additional studies report the proliferative effect of the cholinergic agonist carbachol on prostate cancer by its agonistic action on CHRM3. This study shows that the type 1 acetylcholine muscarinic receptor (CHRM1) contributes toward the proliferation and growth of prostate cancer. We used growth and cytotoxic assays, the prostate cancer microarray database and CHRM downstream pathways' homology of CHRM subtypes to uncover multiple signals leading to the growth of prostate cancer. Growth assays showed that pilocarpine stimulates the proliferation of prostate cancer. Moreover, it shows that carbachol exerts an additional agonistic action on nicotinic cholinergic receptor of prostate cancer cells that can be blocked by tubocurarine. With the use of selective CHRM1 antagonists such as pirenzepine and dicyclomine, a considerable inhibition of proliferation of prostate cancer cell lines was observed in dose ranging from 15-60 µg/ml of dicyclomine. The microarray database of prostate cancer shows a dominant expression of CHRM1 in prostate cancer compared with other cholinergic subtypes. The bioinformatics of prostate cancer and CHRM pathways show that the downstream signalling include PIP3-AKT-CaM-mediated growth in LNCaP and PC3 cells. Our study suggests that antagonism of CHRM1 may be a potential therapeutic target against prostate cancer.

Keywords: Prostate Cancer, GPCR as drug targets, Human M1 cholinergic receptor

13.4 GENE EXPRESSION GUIDED SELECTION OF ANTICANCER DRUGS: CALMODULIN AND DRUG EFFLUX PUMP AS A TARGET OF LOPERAMIDE AND TRIFLUOPERAZINE IN PROSTATE CANCER CELL LINES

*Abdul Mannan Baig, Farhat Abbas, Zohaib Rana, S.
Sumayya Tariq*
*Departments of Biological & Biomedical Sciences and
Surgery, Aga Khan University*

The analysis of the gene expression of target proteins in the prostate cancer can be used as a lead to select drugs that have covert anti-cancer properties and are in clinical use for diverse clinical indications.

Loperamide and Trifluoperazine are examples of such drugs that bind to opioid receptor, antagonize voltage-dependent type calcium channel (Cav), calmodulin (CaM), and inhibit the drug efflux ABCB1 protein. The latter two are the targets of the drug Trifluoperazine as well. We inferred over expression of various targets of loperamide and trifluoperazine in Prostate cancer. The gene expression of target proteins like Cav, CaM and ABCB1 protein in prostate cancer was studied. We investigated the precise mode of anti-cancer action and the pattern of cell death induced by loperamide and trifluoperazine in androgen independent prostate cancer (PC3 and DU-145) cell lines. Gene expression databases like Oncomine, CanSAR and human protein atlas were used to download gene expressions of Cav, CaM and P-glycoprotein in different tissue samples of Prostate cancer. Growth and cytotoxic assays were performed with loperamide and trifluoperazine to target the aforementioned proteins in the prostate cancer cell lines in-vitro to determine the anticancer properties of these two drugs. Our results show that Prostate cancer samples from different cancer gene-expression databases show gene over expression of CaM and ABCB1. The Cav of L-type also showed an over expression of protein while the opioid receptors that are known targets of loperamide show reduced expression. We show that loperamide in doses of 50-80µg/ml in androgen independent Prostate cancer cell lines proved oncocidal. Growth inhibitory assays done with differential doses of loperamide showed anti-proliferative and oncocidal effects in both cell lines. Loperamide and its structural analogs could prove to be anti-cancer drugs in prostate cancer. The CaM and PGP are potential cancer targets that are cardinal for the neoplastic activity of this form of human cancer that show drug resistance. This suggests optimization

of similar drug interactions with these targets may be useful in developing new approaches to control the growth of androgen independent type of prostate cancer.

Keywords: Prostate Cancer, Microarray in selection of Drug Targets, Calmodulin and Voltage-gated Channels as Drug Targets in Cancer

13.5 COMPARING EMERGENCY AND ELECTIVE URETEROSCOPIC LITHOTRIPSY FOR PATIENTS WITH URETERAL CALCULI

*Muhibullah Bangash, Syed Muhammad Nazim,
Muhammad Owais Abdul Ghani, Suniya Naeem, Nasir
Gulzar
Department of Surgery and Medical College, Aga
Khan University*

Introduction and Objectives: Acute renal colic secondary to ureteric stones is a common presentation in urology practice. Failure of conservative management warrant stenting or nephrostomy tube placement. These measures provide prompt symptom relief and are followed by ureteroscopy (URS) or extracorporeal shockwave lithotripsy (ESWL). There is little available data regarding the use of emergency ureteroscopy (EMURS). This study aims to compare safety and efficacy of the emergency versus elective ureteroscopic (ELURS) treatment of ureteric stones.
Materials and Methods: All adult patients with unilateral single radio-opaque ureteric stone who underwent semi-rigid URS from January 2007 to December 2015 were included. Patients with a solitary kidney, Uro-sepsis, pregnancy or pre-operative drainage with nephrostomy or JJ stent were excluded. EMURS is defined as URS being performed within 24-48 hours of presentation, while ELURS is defined as URS performed after failed medical expulsive therapy. Patient, stone and outcome-related variables were compared in both groups. Stone free rate was defined as no evidence of stone on plain x-ray after 4 weeks.

Results: 125 patients in the EMURS group versus 250 patients in ELURS group were compared. Age, sex and comorbidities and serum creatinine were comparable in both groups. Mean stone size was 7.2 ± 3.57 mm in the EMURS group and 7.5 ± 3.33 mm in the ELURS group ($p=0.42$). Majority of stones in EMURS group were located in distal ureter and ureterovesical junction compared to proximal ureter in ELURS group ($p < 0.0001$). EMURS had a comparable mean operative time versus ELURS (34.54

± 16.34 vs. 37.0 ± 20.44 minutes respectively). JJ stents were placed in 45.8% and 45.9% of EMURS and ELURS, respectively. Ancillary procedures (ESWL/Redo-URS) were performed in 17.92% ($n=28$) of EMURS and in 18.69% ($n=46$) of ELURS ($p=0.8563$). Overall complication rates were reported in 6.5% in EMURS and 12.8% in ELURS ($p=0.0261$) and they were mostly Clavein Grade 1. Stone free rate achieved was 88% in EMURS and 88.5% in ELURS, respectively.

Conclusion: Emergency URS for ureteric stones without other prior temporizing measures is a safe and effective definitive treatment option for patients with acute renal colic not responding to conservative management.

Keywords: URS, emergency URS, stone disease

13.7 A CASE OF ADULT ONSET BARTTER SYNDROME

*Muhammad Sohaib Arif, Sonia Yaqub
Department of Medicine, Aga Khan University,
Karachi*

Introduction: Bartter syndrome is an autosomal recessive disorder that often presents in childhood. Its precise incidence is unknown but its occurrence is rare in adults. It is usually characterized by renal potassium wasting with hypokalemia, metabolic alkalosis, increased renin-angiotensin-aldosterone system and normal blood pressure. Here, we narrate a case who presented to us with bilateral lower limb weakness with polyuria and renal failure.

Case: A 32 years young male presented to us with the complaints of bilateral lower limb weakness, increased frequency of urine and bilateral lumbar pain for two months worsened for the past few days. The patient was of average height and built. He had a pulse rate of 60/min, blood pressures of 100/60mmHg. He had decreased power in all four limbs with upper limb having power of 4/5 and lower limb of 2/5.

Laboratory tests revealed hypokalemic alkalosis with serum potassium of 1.5mmol/L, serum bicarbonate of 30mmol/L. The pH of blood was 7.48 and that of urine 7. Serum sodium 132mmol/L, chloride 94mmol/L, calcium 8.1mg/dl, albumin 2.2g/dl, phosphorous 2.3mg/dl, magnesium 2.0mg/dl, blood urea nitrogen was 21mg/dl and serum creatinine 2.3mg/dl. Twenty four hours urinary excretion of oxalate was 53.1mg, calcium 472mg, protein 1180mg and urine amount 5900ml. Plasma renin levels were 275.7 IU/mL and aldosterone level of 12.16 ng/dl. CT KUB was done

which showed amorphous and coarse calcification throughout both kidneys corresponding to the shape and position of the renal pyramids, findings consistent with medullary nephrocalcinosis. Given the normal blood pressures, polyuria, hypokalemia, alkalosis, increased renin and aldosterone, increased urinary oxalate and calcium with medullary nephrocalcinosis, the diagnosis of Bartter syndrome was made. Patient was started on potassium supplements. Spiranolactone was given 100mg/day. He improved significantly with correction of potassium and was able to walk on his own.

Conclusion: Although Bartter syndrome usually occurs in childhood, but if an adult presents with hypokalemic metabolic alkalosis with polyuria, Bartter syndrome should always be kept in the differential diagnosis.

Keywords: Bartter syndrome; hypokalemia; metabolic alkalosis; nephrocalcinosis

13.8 FREQUENCY OF INSOMNIA IN HEMODIALYSIS PATIENTS

Nazish Naseer, Iffat Yazdani
Department of Medicine, Aga Khan University,
Karachi

Introduction: End-stage chronic renal disease (ESRD) is a significant problem in Pakistan with increasing number of patients receiving hemodialysis therapy. Insomnia is characterized by one or more of the following symptoms: difficulty falling asleep ("sleep onset insomnia"), difficulty staying asleep ("sleep maintenance insomnia"), early awakening or poor sleep quality ("non-restorative sleep"). It is primarily a clinical diagnosis and is most frequently diagnosed using data obtained from patient histories and sleep diaries and is associated with a substantial impairment in quality of life (QOL).

Objective: To determine the frequency of insomnia in hemodialysis patients at Tertiary Care Hospital, Karachi.

Material and Methods: This was a cross-sectional study conducted in Department of Nephrology, Aga Khan University Hospital. Data was collected from patients after taking a verbal consent from August 2016 till February 28th 2017. 100 patients on maintenance hemodialysis were included in this study. Patients with any known psychiatric illness, history of any anti-depressants or any anti-psychotic drugs use or with history of recreational drug abuse were excluded.

Post stratification chi square test was applied taking p-value of ≤ 0.05 as significant

Results: A total of 100 patients admitted in Department of Nephrology, Aga Khan University Hospital, Karachi were included in this study. Mean age in our study was 58.38 ± 6.33 years. 40 (40%) were male and 60 (60%) were female. Out of 100 ESRD patients who were on maintenance hemodialysis 65 (65%) had insomnia and 35 (35%) did not have insomnia.

Conclusion: Sleep disorders are very prevalent in dialysis patients and can cause important adverse effects on overall health and well-being of the patients. Effective diagnosis and management of these disorders has the potential to significantly enhance patient outcomes and could improve quality of life in hemodialysis patients.

Keywords: End stage renal disease, hemodialysis and insomnia.

13.9 ACUTE RENAL FAILURE (ARF) IN DIABETES MELLITUS

Farah Gul Khan, Ejaz Ahmed
Department of Medicine, Aga Khan University,
Karachi

Background/ Objective: Acute renal failure (ARF) is one of the most common problems encountered by nephrologists in patients admitted in hospital. Diabetic patients presenting with renal failure are often assumed to have advanced diabetic nephropathy. Little effort is made to find out reversible component of renal failure, even in those with recognizable acute insult preceding presentation. This study was conducted to find out the factors leading to ARF in patients with underlying diabetes mellitus and its outcome at our institution.

Methods: This prospective study was conducted at nephrology unit of SIUT Karachi, Pakistan from November 2012 to May 2013. All adult patients with known underlying diabetes presenting with suspected ARF were included in the study. All patients were followed for a period of six weeks for outcome of renal failure i.e. recovery, dialysis dependency and death.

Results: A total of 95 patients with suspected ARF were enrolled during this period. We found sepsis as the single most common factor causing ARF in 66 (69.5%) patients and the most common focus of infection was found to be urinary tract in 47 (71.2%) patients. 72 (75.8%) patients required dialysis, while 23 (24.2%) were managed conservatively. 62 (67.39%) patients recovered, 14 (15.21%) became dialysis dependent, and 16 (17.39%) died. Among those who

expired, all underwent dialysis and sepsis was the leading cause of death in 13 (81.25%) patients.

Conclusion: Diabetic patients are predisposed to develop acute renal failure. Dialysis requirement adversely affects patient's survival. Every effort should be made to find out the reversible component of renal failure in diabetic patients presenting acutely as treatment of acute insult may obviate the need of dialysis or shorten its duration.

Keywords: Acute Renal Failure, Diabetes mellitus

13.10

LOOKING BEYOND THE OBVIOUS- IGA NEPHROPATHY IN A LIVER TRANSPLANT RECIPIENT

Shumaila A Manan, Sonia Yaqub, Syed Mansoor Ali Shah, Nazish Naseer
Department of Medicine, Aga Khan University, Karachi

Introduction: IgA nephropathy is a mesangial proliferative glomerulonephritis characterized by diffuse mesangial deposition of IgA. IgA nephropathy is the most prevalent pattern of glomerular disease seen in most western and Asian countries. Of the many proposed mechanisms that are believed to be responsible for the pathophysiology behind IgA nephropathy only one has been linked to the liver and its role in IgA clearance from the circulatory system. This case report of IgA nephropathy in post liver transplant patient not only adds further significance to the correlation between liver disease and IgA nephropathy, but also introduces the possibility of direct correlation between IgA nephropathy and liver transplant.

Case: A 40 years old gentleman with past history of HTN and liver cirrhosis secondary to hepatitis c, s/p liver transplant 2 years back. He remained fine after liver transplant. He was taking tab.tacrolimus, everolimus and prednisolone as maintenance immunosuppression. Here admitted with uncontrolled blood pressure. Labs investigations shows serum cr of 1.9mg/dl, in urine DR protein of 4+, 15 rbc and 4 w.b.c, kidneys were normal in size and shape with mild increased echogenicity tacrolimus trough levels were within normal range, spot urinary protein to cr ratio was 5.5 grams. His previous renal functions were normal with cr of 0.9 to 1.1mg/dl. He has heavy nephrotic range proteinuria with deranged renal functions; we stabilized the blood pressure of patient and plan for renal biopsy. Renal biopsy shows total of

38 gloms 13 of them were sclerosed, 2 shows fibro cellular crescents. Immunoflorescne positive for IgA immunoglobulin. So he has IgA nephropathy on renal biopsy. We started him on tab.prednisolon 20 mg bid.

Conclusion: The relationship between the gastrointestinal system and IgA nephropathy is noteworthy, especially since the secondary IgA nephropathy is associated with chronic liver disease. The main concern is that IgA nephropathy has been found to have the cause of renal impairment in post liver transplant patient, interestingly, these patients are already taking one or more immunosuppressing agents like tacrolimus, cyclosporine and steroids which are thought to be possible treatment of IgA nephropathy.so to treat the renal disease in such patients is challenging.

13.11

BLEEDING COMPLICATIONS POST ULTRASOUND GUIDED RENAL BIOPSY- A SINGLE CENTER EXPERIENCE FROM PAKISTAN

Rabeea Azmat, Waqar Kashif
Department of Medicine, Aga Khan University, Karachi

Background: Renal biopsy is the diagnostic modality of choice for the diagnosis of renal parenchymal diseases. The advent of improved imaging techniques and biopsy needles over the years has increased the safety of the procedure and the ability to obtain adequate renal tissue for diagnosis. The aim of this study was to determine the frequency of bleeding complications in percutaneous ultrasound guided renal biopsy in order to establish a local perspective.

Method: A prospective Cross sectional study was conducted in hospitalized patients from January till December 2015 at Nephrology Department, Aga Khan University Hospital, Karachi, Pakistan.

Results: A total of 220 patients were included. Mean age was 41.65 ± 8.627 years, 82 (37.2%) were male and 138 (62.8%) were female. pre and post biopsy haemoglobin, pre and post biopsy haematocrit was, 10.92 ± 1.25 and 10.60 ± 1.22 , and 30.82 ± 4.73 and 30.49 ± 4.68 respectively. Out of 220 patients, 16 (7.27%) developed major complications and 26 (11.8%) developed minor complications.

Conclusions: Percutaneous kidney biopsy is a relatively safe procedure. Complication rates following the procedure are minimal. It is important that all nephrology programs train the trainees in performing biopsies, so that there is a wider clinical use of this important investigation.

Keywords: Percutaneous, ultrasound guided, renal biopsy, complications

Respiratory Diseases

14.1 DIAGNOSTIC ACCURACY OF TWO NUCLEIC ACID AMPLIFICATION TESTS FOR RAPID DIAGNOSIS OF TUBERCULOUS PLEURAL EFFUSION

*Muhammad Irfan, Kauser Jabeen, Ali Bin Sarwar
Zubairi, Sehrish Butt, Safia Awan, Rumina Hasan
Department of Medicine, Aga Khan University*

Background: Tuberculous pleural effusion (TPE) occurs in up to 25% of TB patients. Owing to the pauci-bacillary nature of the pleural fluid, the diagnosis of TPE is a challenge. Newer diagnostic tools are required for the rapid diagnosis of TPE. **Objectives:** To compare the sensitivity and specificity of two commercially available nucleic acid amplification test Xpert MTB/RIF and Geno type MTBDRplus line probe assay (MTBDRplus) for the rapid diagnosis of TPE.

Methods: A prospective cross-sectional study was performed at Aga Khan University Hospital, Karachi, Pakistan from August 2014 to January 2016. Patients with suspected TPE were recruited on the basis of history, exudative lymphocytic nature of effusion and raised adenosine daminase level. Pleural fluid samples were tested for AFB smear, culture, Xpert MTB/RIF and MTBDRplus.

Results: We enrolled 99 patients with mean age of 50.4±20.3 years. Effusion size was mild in 18 (18.2%), moderate in 77 (77.8%) and massive in 04 (4.0%). Pleural fluid AFB smear was positive in 1 (1.01%), Xpert MTB/RIF was positive in 10 (10.1%) and MTBDRplus was positive in 6 (6.06%) cases. AFB culture was positive in 14 (14.14%) cases. Considering AFB culture as Gold standard, the sensitivity of Xpert MTB/RIF was found to be 57.14% (95% CI: 28.86 – 82.34%) and specificity was 97.65% (95% CI: 91.76 - 99.71%) and the sensitivity of MTBDRplus was 35.71% (95% CI: 12.76 – 64.86%) and specificity was 98.82% (95% CI: 93.62 - 99.90%). The sensitivity of Xpert MTB/RIF in TPE was significantly higher than MTBDRplus while the specificity was comparable among the two tests.

Conclusion: Xpert MTB/RIF has a significantly higher sensitivity for the rapid diagnosis of TPE as compared to MTBDRplus and AFB smear microscopy. Multicentre study with large sample size is needed to further evaluate the effectiveness of this method for the early diagnosis of TPE.

Keywords: Tuberculous pleural effusion, Line probe assay, Xpert MTB/RIF

14.2 RISK FACTORS ASSOCIATED WITH IN- HOSPITAL MORTALITY IN PATIENTS ADMITTED WITH COMMUNITY ACQUIRED PNEUMONIA IN A TERTIARY CARE HOSPITAL, KARACHI PAKISTAN

*Nousheen iqbal, Verda Arshad, Faraz siddiqui, Ali bin
sarwar zubairi, Muhammad.irfan
Department of Medicine and Medical College, Aga
Khan University*

Background: Community Acquired Pneumonia (CAP) is associated with significant mortality and morbidity but limited data is available from this part of world. **Objective:** To determine risk factors associated with in-hospital mortality in patients with CAP in a tertiary care hospital of a developing country.

Methods: An observational study was conducted on adult patients admitted with a diagnosis of CAP from January 2011 till December 2016 at Aga Khan University hospital, Karachi, Pakistan. Clinical records were reviewed for hospital course and factors associated with in-hospital mortality.

Results: A total of 1100 files were reviewed and 579 included for the analysis, mean age was 63.6 + 16 years and 302 (52%) were males. Around 351(61%) had unilateral infiltrates and 187 (32%) used antibiotics prior to hospitalization. Over 79% of patients had one or more co-morbid medical illnesses. Initial site of care was ward in 281 (49%) followed by high dependency unit in 272 (47%). Commonest pathogen was staph aureus. Most common complication was acute renal failure 181 (31%) followed by respiratory failure 172 (29.7%).ICU admission was required in 34(5.8%) while 204 (35%) required non-invasive ventilation (NIMV). The overall mortality rate 62 (10.7%) On multivariable analysis NIMV, bedridden status, and ICU admission as an initial site of care were the key determinants of mortality following CAP.

Conclusions: In patients with CAP, functional status at the time of hospital admission, need for NIMV and ICU admission as an initial site of care are the key determinants of in-hospital mortality.

Keywords: Pneumonia, mortality, tertiary care

14.3 CLINICAL APPROACH TO CAVITARY LUNG LESIONS

Muhammad Soban Arif Maan, Asna Sulaiman, Sahlah Sohail, Javaid Ahmed Khan
Medical College and Department of Surgery, Aga Khan University

Cavitary lung lesions are a common finding on chest imaging and can often present a diagnostic challenge for the physician owing to their nonspecific nature. The various etiologies behind cavitary lesions range from the most commonly encountered infectious (tuberculosis and lung abscesses) and noninfectious causes (Granulomatosis with polyangiitis, lung cancer, pulmonary embolism etc.) to some extremely rare etiologies such as intrapulmonary teratoma or Langerhans cell Histiocytosis that should be kept in mind in complicated cases. With the very high incidence of these cavitary lesions on imaging especially among patients in South Asia, it is imperative that a systematic clinical protocol be delineated for the guidance of clinicians on how to approach these lesions when encountered in a clinical setting. Herein we present 5 different cases of patients presenting to us with cavitary lesions of the lung as shown on various imaging modalities, such as Xray and Chest CT. Following the course of diagnosis and treatment of these patients helps us define a much needed systematic approach to dealing with these lesions. The process of an accurate clinical diagnosis always starts from a good clinical history, after which in light of the history, appropriate imaging and lab tests are ordered. In patients with cavities who do not show the clinical signs and lab results of tuberculosis or pneumonia, a more detailed course needs to be adopted involving diagnosticians from rheumatology and oncology to help rule out the various noninfectious causes.

Keywords: Cavity lesions, Tuberculosis, Intrapulmonary Teratoma

14.4 SENSITIVITY AND SPECIFICITY OF GENOTYPE MTBDRPLUS LINE PROBE ASSAY IN RAPID DIAGNOSIS OF TUBERCULOUS PLEURAL EFFUSION

Muhammad Irfan, Kauser Jabeen, Ali Bin Sarwar Zubairi, Sehrish Butt, Rumina Hasan
Departments of Medicine and Pathology & Laboratory Medicine, Aga Khan University

Background: Tuberculous pleural effusion (TPE) occurs in up to 25% of TB patients. Owing to the pauci-bacillary nature, the diagnosis of TPE is a challenge. Newer diagnostic tools are required for the rapid diagnosis of TPE. *Objectives:* Evaluate the sensitivity and specificity of Geno type MTBDRplus line probe assay (MTBDRplus) for the rapid diagnosis of TPE and frequency of MDR TB in TPE through detection of rifampicin and isoniazid resistance. *Methods:* A prospective cross-sectional study was performed at Aga Khan University Hospital, Pakistan from August 2014 to June 2016. Patients with TPE were recruited on history, exudative lymphocytic nature of effusion and raised adenosine daminase level. Pleural fluid samples were tested for AFB smear, culture and MTBDRplus. *Results:* We enrolled 203 patients with mean age of 48.4±19.8 years. Effusion size was mild in 43(21.2%), moderate in 148(72.9%) and massive in 12(5.9%). Pleural fluid AFB smear was positive in 4 (1.9%) and MTBDRplus was positive in 14 (6.9%) cases. AFB culture was positive in 27 (13.3%) cases. INH resistance was detected in one case via MTBDRplus. Considering AFB culture as Gold standard, the sensitivity of MTBDRplus was found to be 44.4% (95% CI: 25.5 - 64.7%) and specificity was 98.8% (95% CI: 95.9 - 99.8%). The sensitivity of MTBDRplus in TPE was significantly higher in comparison with AFB smear. *Conclusion:* MTBDRplus can be used as an effective tool for the diagnosis of TPE with a modest sensitivity and high specificity. Multicentre study with large sample size is needed to further evaluate the effectiveness of this method for the early diagnosis of TPE.

Keywords: Tuberculous pleural effusion, Line probe assay, diagnosis

14.5 A SOLITARY SQUAMOUS PAPILOMA OF THE BRONCHUS

Muhammad Soban Arif Maan, Javaid Khan
Medical College and Department of Medicine, Aga Khan University

Abstract: This report describes a case of 73 years old male who presented in emergency room with complaints of cough, episodes of haemoptysis for 3 days. The patient is a smoker for past 50 years and a tobacco chewer as well. Chest X ray revealed hyperinflated lungs and a density on right side of

chest. On bronchoscopy, a poly poidal mass of 3 by 5 cms was found at the origin of right upper lobe bronchus. The mass was histologically diagnosed as papillomatous growth composed of squamous epithelial cells. Malignant cells were not seen.

Keywords: Papilloma, Bronchus, Hemoptysis

14.7

INSIGHT INTO MECHANISMS FOR THE EFFECTIVENESS OF MORUS NIGRA AND ITS FLAVONOL IN BRONCHITIS AND ASTHMA

Samrah Razi, Hassan Mehmood, Sara Khan, Shafiq Ali Shah, Anwar-ul-Hasan Gilani
Medical College and Department of Biological & Biomedical Sciences, Aga Khan University

Background and Objective: Asthma is a commonly prevailing respiratory ailment in our community. Despite current available treatment options people tend to use indigenous medical herbs to combat respiratory ailments. Black mulberry (*Morus nigra*), or shehtoot, is popular for the treatment of respiratory ailments in traditional medicine. Morin is a bioactive flavonol, sourced from *Morus nigra*. Despite its utility, there are no detailed studies available in support of the mechanism of action of *Morus nigra* and Morin in respiratory disorders in present literature. We aimed to rationalise the medicinal use of *Morus nigra* and its flavonol (Morin) in airway disorders such as bronchitis and asthma.

Methods and Materials: The in vitro assays were carried out using isolated guinea pig tracheal and atrial preparations. Tissue preparations were isolated, immersed in Kreb's solution and maintained at 37°C with a continuous supply of Carbogen (95% O₂ and 5% CO₂). Tissue responses were assessed using force transducers and the PowerLab data acquisition system.

Results: In isolated guinea pig tracheal tissues, *M.nigra* (0.03-10 mg/ml) and Morin (3-1000 µM) caused inhibition of CCh (1µM) and K⁺ (80µM) induced contractions, being more potent against CCh. When the relaxant effect of *M.nigra* and Morin was reproduced in the presence of propranolol, a non-selective β-antagonist, the inhibitory response was partially inhibited, being more pronounced on the part of Morin as compared to *M.nigra*. Unlikely, verapamil, a Ca⁺⁺ antagonist and supportive control, showed a

different pattern of relaxation and its sensitivity with propranolol. In isolated atrial preparations, *M.nigra* (0.3-10 mg/ml) caused complete suppression of the

rate and force of contractions, while Morin caused slight inhibition of both parameters.

Conclusion: These findings suggest that *Morus nigra* and its flavonol, Morin possess bronchodilatory properties mediated through multiple pathways including predominant inhibition of muscarinic receptors along with acting as Ca⁺⁺ antagonist, β-agonist and potassium channel activator.

Keywords: *Morus Nigra* and Morin, muscarinic antagonist, β-agonist

14.8

THE KNOWLEDGE OF MOTHERS ABOUT PREVENTIVE MEASURES FOR PNEUMONIA IN SLUM COMMUNITY OF KARACHI, PAKISTAN

Adeel Eliyas, Imran Khan, Kamran Khan, Fayyaz Hashmi, Shahid Ahmad Khan
Nursing Services, Ziauddin University

The Knowledge of Mothers about Preventive Measures for Pneumonia In Slum Community of Karachi, Pakistan. Adeel Eliyas, Imran Khan, Kamran Khan, Fayyaz Hashmi, Shahid Ahmad Khan
Introduction Pneumonia is the largest infectious disease that has killed 920,136 children under the age of 5 in 2015, accounting for 16% of all deaths of children under five year's old. A lot of children suffering from pneumonia have difficulty to reach health services in the suitable time because their mothers fail to identify seriousness of their illness.
Objectives The aim of the study was to assess the knowledge level of mothers regarding preventive measures about pneumonia
Methods This cross-sectional study was conducted using a close ended self-developed questionnaire consisting of 15 closed ended items were used. Convenient sample (n=150) was selected. Written consent was taken from each participant before filling of questionnaire. SPSS version 20.00 was used for data analysis
Results All of the participants were between 20 and 35 years of age. Out of 150 respondents 60% respondents were unable to tell the identifying sign and symptoms of pneumonia, and only 18% respondents knew the sign and symptoms of pneumonia while 22% clearly stated that they do not know the sign and symptoms of this disease. only 18% of respondents said vaccination of pneumonia should be made compulsory for children, 44% said No and 38% said don't know.

Conclusion The study we concluded that mother had poor knowledge about pneumonia its preventive measure, and immunization. Government should also

provide awareness through mass media, so that the mortality and morbidity rates can be reduced and many precious lives can be saved

References Abusaad, F. E., & Hashem, S. F. (2014). Mothers' learning needs assessment regarding pneumonia among children less than five years at Saudi Arabia. *International Research Journals*, 85-93.

Keywords: mothers, pneumonia, knowledge

14.9

15 YEAR OLD BOY WITH A LARGE MEDIASTINAL MASS

*Mariyam Gohar Ali, Ali Bin Sarwar Zubairi
Department of Medicine, Aga Khan University,
Karachi*

Introduction: Hyperimmunoglobulin E (Job's) Syndrome is a rare multisystem inherited disorder affecting skin, skeletal system, recurrent staphylococcal infections and pulmonary infections. We describe a rare presentation of this disease with a mediastinal mass.

Case presentation: A 15 year-old boy was referred to our hospital with non resolving pneumonia. He had complaints of shortness of breath, cough, hemoptysis and fever. He developed asthma like symptoms and started having recurrent URTI and skin problems at the age of 9yrs. He was treated initially as asthma/ABPA with inhaled and systemic steroids.

On physical examination, he had dysmorphic facial features of pinched nose, broad nasal bridge, large ears, new erupting teeth and delayed shedding of primary teeth. Chest examination revealed bilateral wheezes and decreased breath sounds in left lower chest. His laboratory workup showed, Ig E levels >7000 IU/ml and beta-D glucan >523 pg/ml. A CT scan chest was done which showed huge anterior mediastinal mass and enlarged necrotic lymph nodes encasing left main pulmonary artery and left main stem causing left lower lobe collapse. Bronchoscopy showed normal bronchial mucosa and BAL sent for microbiology grew MSSA. The sputum AFB smear was negative but he was started empirically on ATT. A repeat CT chest after 2 months showed progression of disease. CT guided biopsy was done which showed dense fibrocollagenous tissue with scattered giant cells and branching hyphae. He was diagnosed to have invasive aspergillosis. He is currently under treatment with voriconazole and is improving.

Conclusion: Invasive aspergillosis presenting as a mediastinal mass with extension to mediastinal structures and pulmonary vasculature is a rare

presentation of Job's Syndrome. To the best of our knowledge, no case has been reported in the literature so far with this unique presentation. Lymphoma is a known entity associated with this disease which needs to be ruled out by tissue biopsy.

14.10

PONCET'S DISEASE: TUBERCULOSIS RELATED POLYARTHRITIS-TWO CASES AND REVIEW OF LITERATURE

*Fatima Adhi, Rabia Hasan, Mehreen Adhi, Syed Ali Hamid Nousheen Iqbal, Javaid Khan
Department of Medicine, Aga Khan University,
Karachi*

One of the rare presentations of active pulmonary or extra-pulmonary tuberculosis is polyarthropathy involving multiple large and small joints of the body; a reactive constellation known as Poncet's disease. This may sometimes be the sole manifestation of the disease before more obvious features develop. The pain of the polyarthritis can be crippling, limiting the mobility and activities of patients, and can be easily misinterpreted for more common causes of polyarthritis like rheumatological diseases that present similarly.

We present two such cases of active tuberculosis where polyarthralgia was the first and only symptom for many months. We present two patients with debilitating polyarthropathy who later developed pulmonary and pleural tuberculosis (TB) later in the course of the disease. Based on our observations, we propose that tuberculosis be given due consideration as a diagnosis for patients with unusual presentation of joint pains, especially in endemic regions and/or susceptible populations.

Keywords: Tuberculosis, Tuberculous rheumatism, Poncet's disease, polyarthritis

14.11

LOW MID-EXPIRATORY AIRFLOW ON SPIROMETRY IS AN EARLY INDICATOR OF IMPAIRED LUNG FUNCTION IN ASYMPTOMATIC ADULT SMOKERS: A CASE CONTROL STUDY AT A TERTIARY CARE HOSPITAL, KARACHI

*Mariyam Gohar Ali, Muhammad Irfan
Department of Medicine, Aga Khan University,
Karachi*

Background: Chronic Obstructive pulmonary diseases (COPD) is a well-established entity in smokers. Low mid-expiratory airflow (FEF_{25%-75%}) on spirometry is a simple, sensitive index of early expiratory air-flow obstruction. Screening of smokers by using FEF_{25%-75%} may increase detection of COPD in early stages.

Methods: This was a case control study conducted in Aga Khan University Karachi, Pakistan from January 2016 till December 2016. Smokers (≥ 10 pack-years) were labeled as case and never smokers were labeled as control. Spirometry results of individuals who underwent spirometry as a part of their routine health checkup and no history of any lung disease were reviewed. FEF (25%-75%) $< 65\%$ of predicted was labeled as having low mid expiratory flow.

Results: A total of 200 subjects, 100 cases and 100 controls were enrolled during the period. 148(74%) were male. The average age was 46.61 ± 8.84 years. The frequency of low FEF_{25%-75%} was significantly high in smoker group (77%) versus nonsmoker group (37%) (p value < 0.05). Among smokers, duration of smoking > 20 pack years was found to be an independent risk factor for impaired FEF_{25%-75%} (p value < 0.0001 ; OR 25.7, 95% CI 8.67-76.2).

Conclusion: Impaired mid-expiratory airflow on spirometry can be used for early diagnosis of impaired lung function in asymptomatic adult smokers. Targeted screening needs to be considered in smokers and early smoking cessation can prevent the further decline of lung function.

14.12

SHISHA (WATERPIPE) USE IN MEDICAL STUDENTS OF A DEVELOPING COUNTRY

Maryam Hassan, Nousheen Iqbal, Muhammad Irfan, Javaid khan
Department of Medicine, Aga Khan University, Karachi

Objective: The aim of the study was to determine the prevalence of shisha smoking its associated factors, and awareness about the nationwide shisha ban among medical students of Karachi, Pakistan.

Methods: In a cross sectional study, data was collected from medical students of Sindh Medical College and Aga Khan University.

Results: A total of 274 participants, 125 (45.6%) males and 149 (54.4%) females, were included in the study. The prevalence of shisha smoking among medical students was 21.5% (n= 59). The majority of those who smoked shisha had started during medical school (39%, n = 23). Peer pressure was cited as the main

reason for starting shisha smoking (78%, n = 46). 76.6% (n=210) students believed that shisha contained tobacco, 74.5% (n=204) knew it did not have a filtration system. It was found that 39% (n = 23) of the students who smoked shisha also smoked cigarettes. 65.3% students were not aware of the legislation against shisha smoking. 54.7% of the students reported a more negative opinion about shisha upon finding out about the law. Sex, studying in a private medical college, lack of knowledge about shisha containing tobacco and not having a filtration system were found to be significantly associated with shisha smoking status (p < 0.001 , p < 0.001 , p < 0.001 , p < 0.001).

Conclusions: Shisha smoking was found to be relatively common among medical students. Significant lack of knowledge regarding harmful effects of shisha and legislation against shisha were found among smoking factions. Further research is mandated into the arena of this growing epidemic, and there is a dire need to educate our youth about the harmful effects of shisha smoking.

Source of funding: National Alliance for Tobacco Control

14.13

AWARENESS, USE AND PERCEPTIONS ABOUT E-CIGARETTES AMONG ADULT SMOKERS IN PAKISTAN

Maryam Sarfraz¹, Hamza Abdur Rahim Khan¹, Amna Urooba¹, Zainab Manan¹, Omar Irfan¹, Ramlah Nadeem¹, Huma Baqir¹, Saad Farooq¹, Zarrar Khan¹, Javaid Ahmed Khan², Sarah Saleem³
¹Medical College, ²Department of Medicine and ³Department of Community Health Sciences, Aga Khan University, Karachi

Introduction: Tobacco smoking is a rising trend in Pakistan. Nicotine Replacement Therapy has been the most successful strategy to help in smoking cessation; e-cigarettes cater to smokers' behavioral habits in addition to it. Evidence so far suggests e-cigarettes may be less harmful than tobacco smoking. However, there is a lack of data about public use and awareness of e-cigarettes in Pakistan.

Methods: We conducted a cross-sectional survey using a convenience sampling method. A self-administered questionnaire was used to collect data from 387 adult ever-smokers in public spaces in Karachi.

Results: 92.8% respondents were male, with a mean age of 32.42 ± 12.55 years, mostly (55.5%) belonging

to the middle socioeconomic class. 64.3% respondents were aware of e-cigarettes while 10.1% used them, and 20.9% wanted to use them. Socioeconomic status was the best predictor for awareness about e-cigarettes ($p < 0.001$), while gender (0.001), occupation ($p < 0.001$) and current smoking status ($p = 0.009$) were significantly associated with use of e-cigarettes. E-Cigarettes were mostly perceived as less harmful than tobacco cigarettes (45.3%), helpful in quitting smoking (35.6%), associated with chronic diseases (40.9%), addictive (36.7%), and not safe for pregnancy (50.8%).
Conclusion: The trend of low use of e-cigarettes with relatively higher awareness is consistent with studies in other developing countries. This can be partly attributed to the misconceptions about health effects, and lack of smoking cessation counseling or omitting the mention of e-cigarettes at interactions with health professionals.

14.15

TRICHOSPORON BEIGELII AND FUSARIUM EMPYEMA THORACIS IN DIABETIC PATIENT, A RARE CAUSE OF EMBYEMA

Nousheen Iqbal¹, Muhammad Irfan¹, Kausar Jabeen²
¹Department of Medicine, ²Department of Pathology and Microbiology, Aga Khan University, Karachi

Introduction: Fungal infection incidence is currently rising especially in diabetic patients. Fungal infection is a rare cause of empyema. Here we present a case of diabetic patient being treated as community acquired pneumonia (CAP) turned out fungal empyema. Treated successfully with antifungal therapy.

Case: A 60 years old female known case of DM and HTN admitted with worsening dyspnea for 15 days. She was treated with right sided community acquired pneumonia (CAP) with parapneumoic effusion complicated by right sided pneumothorax outside AKU. She got intubated due to respiratory failure and extubated and shifted to AKU for further management. On examination there was facial swelling and puffiness and she was in respiratory distress, crepitus was palpable all over chest bilaterally suggestive of subcutaneous emphysema. Chest X-ray showed right Pneumothorax with pneumomediastinum and pneumopericardium and alveolar infiltrates with air bronchograms at lower zones. HRCT done showed severe subcutaneous and intramuscular emphysema involving entire chest wall, neck and extending up to the left side of face. Multiple cystic and cavitary

lesions were present in right lower lobe with possible rupture of cyst in the pleural space leading to right pneumothorax. Urgent tube thoracotomy was done. She had significant air leak so another chest tube was inserted. CTS was taken on board but she refused for any intervention. She was started on board spectrum antibiotics but no significant improvement noted. She got discharge on request but after few days readmitted with persistent fever and purulent discharge from the chest tube, pleural culture were sent showed fungus *Trichosporon beigelii* and *fusarium* species, glucose of 7 mg/dl. She was started on antifungal amphotericin and became afebrile. Her antibiotics were stopped and antifungal continued. Later because of side effects with amphotericin it is changed to voriconazole continued for 8 weeks. She showed gradual improvement and her both chest tubes were removed successfully.

Conclusion: Fungal empyema is a rare entity but incidence of fungal infection is raising among diabetic patients. Any pulmonary infection non-responding to antibiotics should also raise the suspicion of fungal infection.

14.16

COUGH, HEMOPTYSIS & HAIR EXPECTORATION-AN INTRAPULMONARY TERATOMA

Shanila Ahmed, Habib Kibzai, Talha Shahzad, Saulat H. Fatimi

Department of Medicine, Aga Khan University, Karachi

Background: Mature cystic teratomas of lung are extremely rare, up to present time around 30 cases have been reported in the literature. These tumors are thought to originate from 3rd pharyngeal pouch. They occur equally in men and women. It usually diagnosed in 2nd and 4th decade. Here we report an additional case of middle aged male admitted with history of hemoptysis and expectoration of hairs on coughing, which is a classic symptom-the telltale sign but is seen in 13% of cases.

Case report: 40 years old gentleman, presented to us with history of hemoptysis on/off for 6 years, expectoration of light brown thread like material in sputum often for 2-3 years. He was investigated multiple times for his complaints and Anti-tuberculosis treatment was also advised. He had no complaint of chest pain, weight loss and shortness of breath. History of tuberculosis and contact with animals was

negative. He was a non-smoker. Physical examination and routine lab investigations were normal. Chest X-Ray showed fibrotic band occupying left upper zone of left lung. Three sputum smears were negative for acid-fast bacillus. CT-scan showed intrapulmonary heterogeneous cystic lesion in left upper end of lung with solid component and peripheral rim of air. A provisional diagnosis of an infected hydatid cyst or an aspergilloma was made. On thoracotomy a firm irregular mass was found in anterior lobe of left lung. In section the tumor showed cavity filled with sebaceous material containing tuft of hairs and a tooth. Histopathology showed cystic lesion with ciliated columnar epithelium including lymphoid aggregates with prominent germinal center. Features were consistent with mature cystic teratoma

Conclusion: Intra-pulmonary teratomas should be considered as differential diagnosis when investigating an intra-pulmonary cavitary lesion in adults so that not to be treated mistakenly as pulmonary tuberculosis.

Keywords: Tuberculosis, hemoptysis, hairs expectoration, cough, intrapulmonary teratoma

14.17

BIRT HOGG DUBE SYNDROME: A RARE DISEASE

*Talha Shahzad, Mariyam Gohar
Department of Medicine, Aga Khan University,
Karachi*

Introduction: Birt Hogg Dube syndrome is a rare autosomal dominant genetic disorder characterized by skin folliculomas, pulmonary cysts, spontaneous pneumothorax, and renal cancer. Here we describe a case of a 42 yrs old male with shortness of breath and renal mass.

Case report: A 42 yrs old male, non smoker, referred to pulmonary clinic with the complaints of dyspnoea on exertion for 1 month and hematuria for 15 days. His past medical history was significant for spontaneous pneumothorax for which Video Assisted Thoracoscopic Surgery (VATS) with Pleurectomy was done 10 years ago. Upon inquiring about family history, we found out that his mother was also treated for spontaneous pneumothorax in the past. On physical examination he had follicular skin lesion on the shin and face. On chest examination there was harsh vesicular breathing only. His workup was done

including CT scan chest, abdomen and pelvis which showed multiple cystic lesions of varying sizes in both lungs with basal and peripheral distribution typical for Birt Hogg Dube syndrome and a mass in right kidney, the biopsy of which turned out to be positive for clear cell type of renal cell carcinoma. He underwent right nephrectomy. He remained stable post operatively, hence got discharged. He was diagnosed as the case of Birt Hogg Dube syndrome on the basis of history, radiological findings and clinical parameters. Patient's genetic testing for mutations in FLCN gene could not be done due to unavailability of the test in Pakistan. *Conclusion:* Birt Hogg Dube syndrome is a rare disease but should be suspected in patients with skin follicles, bizarre pulmonary cysts and renal lesions. Genetic testing and investigations should be carried out to prevent complications in other at-risk individuals of the family.

14.18

WHEEZE IN YOUNG IS NOT ALWAYS ASTHMA. A CASE REPORT

*Imranullah Khan, Ali Zubairi, Muhammad Irfan,
Kashif Aziz
Department of Medicine, Aga Khan University,
Karachi*

Introduction: In general practice, wheezing chest in young patient is mostly equated to asthma, without any due investigation. This is not always the case. We present a case of young male who presented with severe wheezing, his final diagnosis came out to be bronchiolitis obliterans.

Summary: A 13 year-old boy resident of Karachi was hospitalized in December 2016 at AKU for acute onset dyspnea preceded by symptoms of respiratory tract infection. He was noted to have subcutaneous emphysema and pneumomediastinum. He was having recurrent RTI's since October 2016. The prior sputum cultures grew *S aureus*, *S pneumoniae* and *M catarrhais* in past 2 months requiring antibiotics. He had no prior history of asthma or chronic respiratory disease like Cystic fibrosis. His developmental milestones were normal and he was an active soccer/football player until now. Family history was unremarkable. The family moved from Lahore to Karachi in June 2016 due to his father's job. He had a brief exposure to wild pigeons at grandmother's house in July this year until they moved to their own house at

a different locality. On examination, he was in respiratory distress with costochondral recession and had respiratory rate of 36 per minute. He required non-invasive ventilation. He had a very tight chest requiring intravenous steroids and bronchodilators. Chest imaging revealed significant air trapping. We were unable to do inspiratory and expiratory scans and spirometry due to his condition. The serum IgE was 466. Rest of the immunoglobulins, ANA profile and ANCA's are negative. His open lung biopsy was done which revealed distal airway and alveolar wall infiltration with fibromyxoid granulation tissue and plasma cell infiltration. Based on his history and clinical findings diagnosis of 'Post-infectious bronchiolitis obliterans' was made. He developed subcutaneous emphysema and mediastinal emphysema twice before this and this was his third time which was resolving on high flow oxygen.

Conclusion: Wheeze in young is not always asthma. Other possibilities should be in our differential diagnosis.

14.19

RISK FACTORS ASSOCIATED WITH IN-HOSPITAL MORTALITY IN PATIENTS ADMITTED WITH COMMUNITY ACQUIRED PNEUMONIA IN A TERTIARY CARE HOSPITAL, KARACHI PAKISTAN

*Nousheen Iqbal¹, Verda Arshad², Faraz Siddiqui³, Ali bin sarwar zubairi¹, Muhammad Irfan¹,
Department of Medicine, Aga Khan University
Karachi*

Background: Community Acquired Pneumonia (CAP) is associated with significant mortality and morbidity but limited data is available from this part of world.

Objective: To determine risk factors associated with in-hospital mortality in patients with CAP in a tertiary care hospital of a developing country.

Methods: An observational study was conducted on adult patients admitted with a diagnosis of CAP from January 2011 till December 2016 at Aga Khan University hospital, Karachi, Pakistan. Clinical records were reviewed for hospital course and factors associated with in-hospital mortality.

Results: A total of 1100 files were reviewed and 579 included for the analysis, mean age was 63.6 ± 16 years and 302 (52%) were males. Around 351 (61%) had unilateral infiltrates and 187 (32%) used antibiotics prior to hospitalization. Over 79% of

patients had one or more co-morbid medical illnesses. Initial site of care was ward in 281 (49%) followed by high dependency unit in 272 (47%). Commonest pathogen was staph aureus. Most common complication was acute renal failure 181 (31%) followed by respiratory failure 172 (29.7%). ICU admission was required in 34 (5.8%) while 204 (35%) required non-invasive ventilation (NIMV). The overall mortality rate 62 (10.7%) On multivariable analysis NIMV, bedridden status, and ICU admission as an initial site of care were the key determinants of mortality following CAP.

Conclusions: In patients with CAP, functional status at the time of hospital admission, need for NIMV and ICU admission as an initial site of care are the key determinants of in-hospital mortality.

Keywords: Pneumonia, Mortality, tertiary care

14.20

DISSEMINATED HYDATIC CYST, A RARE PRESENTATION

*Nousheen Iqbal¹, Muhammad Hussain¹, Muhammad Irfan¹, Saulat Fatimi²
Department of Medicine, ²Cardiothoracic surgery Aga
Khan University Karachi*

Introduction: Hydatid disease cause by infection with larval form of *Echinococcus granulosus*. The primary management includes surgical resection and antihelminthic chemotherapy. It can present with varied manifestations depending on the organ involvement. While disseminated hydatid disease is a very rare presentation. Here we presented a case of a women who had bilateral lung and liver hydatid cysts and showed significant improvement on antihelminthic chemotherapy.

Case: 50 years old female presented with complaint of cough and shortness of breath for 4 month. Cough was productive associated with progressive exertional dyspnea. She took multiple antibiotics but no relieve noted. There was no history of weight loss and appetite was normal. Past history was not significant. There was no history of TB contact. On examination she was of normal height and built with no respiratory distress. Oxygen saturation was 95% on RA. Chest x-ray was done, showed multiple rounded soft tissue density shadowing of varying sizes in both lungs fields. CT scan chest with contrast was done which showed multiple well-defined rounded soft tissue in lung and liver, some of them had cavitation. So CT guided biopsy was done which was inconclusive. Due to high suspicious of malignancy it was decided to go for

VATS biopsy. During surgery multiple scattered bilateral cystic lesions identified, single cyst excised and sent for histopathology. Due to her intraoperative cystic findings Echinococcus antibody IgG titer was checked which came out positive. Patient was started on Albendazole 400 mg BID. Due to multiple cysts in bilateral lung and liver it was decided to continue with medical therapy. Chest x ray was done after one year showed significant improvement.

Conclusion: The disseminated hydatid cyst is a rare presentation, where surgery cannot be offered; long term medical therapy can improve the clinical outcomes.

14.21 NON HYPOXEMIC UNILATERAL PULMONARY ARTERY ATRESIA

*Ammarah Yasmeen, Murtaza Muhammad Kazmi,
Amna Amjad
Department of Medicine, Aga Khan University,
Karachi*

Background: Unilateral pulmonary artery atresia (UPAA) is a rare congenital anomaly, due to a malformation of the sixth aortic arch. It can occur as a single disorder or may be associated with other congenital cardiovascular malformations. Patients with isolated UPAA have a benign clinical course, the diagnosis may not be made until adulthood. The commonest symptoms are of recurrent pulmonary infections, decreased exercise tolerance, mild dyspnoea on exertion, (in up to 40%) of patients and haemoptysis (in up to 20%). Diagnostic modalities include a CXR which often shows a reduction in the size of the affected hemithorax and compensatory hyperinflation of the contralateral hemithorax, a V/Q scan but CTPA is considered to be the diagnostic modality of choice. Treatment options include selective embolization of systemic collaterals or pneumonectomy in those with massive haemoptysis or a conservative approach with surveillance depending on symptomatology.

Case discussion: A 42 year old lady, presented with 2-3 episodes of haemoptysis over a period of 24 hours. She had a similar episode 10 years ago which was self limiting and for which no work up was done. She denied history of dyspnea, cough, fever and weight loss. She had no signs of respiratory distress, SpO₂ of 99% on room air and an unremarkable chest exam. After initial workup including sputum tests for Tuberculosis, she underwent HRCT and later a definitive CTPA was done which revealed dilatation of main and left pulmonary artery, origin of the right pulmonary artery was not identified with numerous

collaterals predominantly arising from the systemic circulation supplying the right lung. The patient was treated symptomatically. Surgical approach was not taken.

Conclusion: Though rare, unilateral pulmonary artery atresia may occur and remain undiagnosed until adult age. CTPA combined with perfusion scintigraphy is very useful in making the diagnosis non-invasively. Early diagnosis and appropriate intervention can avoid serious complications like PAH and life threatening haemoptysis.

14.22 YOUNG FEMALE WITH DIFFUSE ALVEOLAR INFILTRATES WITH ANEMIA

*Ammarah Yasmeen, Saba Afshan, Muhammad Irfan
Department of Medicine, Aga Khan University,
Karachi*

Case: A 21 years old female, working in a textile mill, presented to pulmonology clinic with complaints of dry cough for 3 months, 1 week history of fever and scanty haemoptysis a few weeks back which settled on its own. She lost about 3 kgs of weight in a month and had worsening dyspnea for 3-4 days. Her past history was significant for an ear infection a year back and oral ulcers. She had been worked up with a CT chest showing bilateral consolidations and a bronchoscopy and BAL was done which was normal except for BAL cultures showing growth of pan sensitive pseudomonas aeruginosa. She had a falling hemoglobin level over last few days and her Hb on arrival was 6.5gm/dl. UDR showed proteinuria and hemoglobinuria. Her autoimmune workup was sent including ANA, ADNA and ANCA levels. She underwent Bronchoscopy which revealed blood smeared trachea and blood oozing out via vocal cords. The procedure had to be abandoned as she started to dehydrate. The clinical scenario in her case was highly suspicious of Diffuse alveolar hemorrhage, so she was started immediately on pulse steroid therapy with 1g of IV Methylprednisolone per day for 3 days. 3 sessions of plasmapheresis were done. The dense bilateral infiltrates on her CXR at presentation resolved completely after treatment and her clinical condition also improved. She was switched to PO steroids (1mg/kg/day) on discharge. Her ANA and ADNA were negative but her ANCA levels are still awaited after which further treatment will be optimized.

Discussion: Diffuse alveolar hemorrhage (DAH) is a medical emergency that can be caused by numerous disorders and presents with haemoptysis, anemia, and diffuse alveolar infiltrates. Early bronchoscopy with

BAL is usually required to confirm the diagnosis and rule out infection. Most cases of DAH are caused by capillaritis associated with systemic autoimmune diseases such as anti-neutrophil cytoplasmic antibody-associated vasculitis, anti-glomerular basement membrane disease, and systemic lupus erythematosus, but DAH may also result from coagulation disorders, drugs, inhaled toxins, or transplantation. The diagnosis of DAH relies on clinical suspicion combined with laboratory, radiologic, and pathologic findings. Early recognition is crucial, because prompt diagnosis and treatment is necessary for survival. Corticosteroids and immunosuppressive agents remain the gold standard.

14.23 UNUSUAL PRESENTATION OF INVASIVE THYMOMA IN A 28 YEARS OLD FEMALE

*Ammarah Yasmeen, Muhammad Irfan
Department of Medicine, Aga Khan University,
Karachi*

Case: 28 years old lady, with no prior co-morbidities came to pulmonology clinic with complaints of progressively worsening shortness of breath for 1 year and cough for 8 months. She had history of on and off left sided chest discomfort. There was no history of prior TB contact. Before presentation she had already been taking ATT for 2 months but there was no improvement in her symptoms. On Examination, trachea was displaced to right side with a dull percussion note and decreased air entry on the left side of chest. Ultrasound guided core biopsy of left lung mass was done. CXR and later CT Scan of the chest revealed a huge mass probably arising from mediastinum and invading into the left lung resulting in shift of mediastinum to right side. She then underwent Left thoracotomy. A huge mediastinal tumor, extending to the left lung and pleura, was found. It was unresectable. Histopathological evaluation revealed it to be a B2 type, Thymoma. She was further referred to medical oncology.

Discussion: Invasive thymomas are rare tumours in the anterior mediastinum, representing 50% of anterior mediastinal masses and about 20-30% of all mediastinal tumours. They are of unknown etiology; about 50% of patients with thymomas are diagnosed incidentally with chest radiography. Thymoma is classified into different stages, which determine the prognosis and type of management, the standard primary treatment for these tumours is Thymectomy. Radiation therapy (RT) and/or chemotherapy may be

indicated for symptom control and may potentially prolong survival in patients who are not operative candidates.

14.24 CLINICAL CHARACTERISTICS AND OUTCOME OF PATIENTS WITH ALLERGIC BRONCHOPULMONARY ASPERGILLOSIS

*Imranullah Khan, Kashif Aziz, Nousheen Iqbal, Safia Awan, Muhammad Irfan
Department of Medicine, Aga Khan University,
Karachi*

Background: Allergic bronchopulmonary aspergillosis (ABPA) is hypersensitive reaction to Aspergillus antigen. In certain individuals, immune system show hypersensitivity to this fungus and lead to lung damage.

Objective: To evaluate the clinical characteristics and outcome of ABPA patient in a tertiary care center of Pakistan.

Method: It was an observational study from January to December 2016 at Aga Khan University, Pakistan. Patient's files with a principle diagnosis of ABPA were reviewed and those who fulfill the ISHAM criteria were included. History, stage of disease, radiological findings, spirometry, treatment and outcome were recorded.

Results: Out of 120 patients, 64 fulfilled the criteria for ABPA. 49% were male. Mean duration of ABPA diagnosis was 4 years. 77% had underlying asthma and 25% patient were misdiagnosed and treated as pulmonary TB. Most common symptoms were wheezes, cough and fever. 30% had sputum with pallet formation. Fleeting infiltrates (61%) and cystic changes (45%) were the most common finding on chest radiography while mucus plugging (65%) and central bronchiectasis (78%) were most common HRCT finding. Mean Eosinophil count was 1111/mm². Serum IgE level was more than 2000 IU in 88% of patients. 26% of patients grew aspergillus fumigatus in sputum culture. All patients were received systemic corticosteroids and Itraconazole. 33% were in remission, 20 % steroid dependent and 2% had developed end stage fibrotic lung disease. 2% needed Long term Oxygen Therapy (LTOT).

Conclusion: ABPA is commonly misdiagnosed as pulmonary TB in high burden TB country. Early diagnosis and appropriate treatment can prevent the structural damage to the lungs.

14.25
CONGENITAL ADENOMATOID
MALFORMATION IN 11 YEAR CHILD. A CASE
REPORT

Imranullah Khan, Muhammad Irfan, Kashif Aziz
Department of Medicine, Aga Khan University,

Introduction: Congenital adenomatoid malformation (CAM) is defined as a mass of abnormal solid or cystic pulmonary tissue in which there is a proliferation of bronchial structures at the expense of alveolar development. It is a rare condition. We represent an 11 year old child who was diagnosed with this disease and was managed.

Summary: 11 year old female came to ER department with complaint of one episode of hemoptysis one day back. Along with that she had history of dry cough for last 6 months. She never had hemoptysis before that. There was no history of bleeding from any other side, no rash, no bruises. There was no history of fever. She had dry cough without any sputum. There was no weight loss. There was no history of contact with Tuberculosis patient. Her other systemic inquiry was unremarkable. On examination, she was alert, oriented with no obvious respiratory distress. There was no significant finding on general physical examination. On chest examination, vocal resonance was decreased on right lower chest and there was bronchial breathing on auscultation in same area. Chest xray was done which revealed a thick walled cystic area in right lower chest. She had been treated symptomatically by GP but did not improve. Pulmonary Tuberculosis workup was also done. Sputum for AFB and gene xpert has been done by her GP that was negative. Here CT scan guided Biopsy of the lesion was planned. Histopathology of the biopsy revealed linear core of lung tissue exhibiting variable sized airways filled up with histiocytes. The stroma between these airspaces exhibits fibrosis, thick walled blood vessels and lymphoid follicles. Based on the history, examination and histopathological finding diagnosis of Congenital Cystic Adenomatoid Malformation was made. It was unusual that patient did not develop any symptom since childhood although this condition was congenital.

Conclusion: Congenital adenomatoid malformation of lung can present in late age with hemoptysis. It should be included in differentials of adolescents having cavitary lung lesions.

14.26
SPINDLE CELL CARCINOMA OF LUNG, A RARE
ENTITY

Nousheen Iqbal, Muhammad Irfan
Department of Medicine, Aga Khan University

Spindle cell carcinoma (also known as sarcomatoid carcinoma) of the lung is a rare lung tumor and count of 0.4% of all lung malignancies. Mostly presents as peripheral tumors. Here we present a case of male presented for immigration clearance and diagnosed with Spindle cell carcinoma.

Case: A 68 years old businessman, ex-smoker came to pulmonology clinic for immigration clearance. His routine chest X-ray examination showed well defined pleural based nodule at right upper zone. He had no cough, fever and weight loss. There was no significant past medical history. A CT scan chest was done for further evaluation which showed a well-defined pleural based soft tissue density measuring approximately 17 x 15 mm in the right lung upper zone. It showed no spiculations or calcification. CT guidance, core biopsy of pleural-based right lung mass lesion was performed and sent for histopathology. Histopathology showed skeletal muscle fibers together with separate fragments of tissue exhibiting spindle cell lesion characterized by elongated spindle shaped cells having serpentine nuclei. These cells exhibit positivity with S-100 and Vimentin immunostains without necrosis or nuclear atypia and suggestive of peripheral nerve sheath origin. Patient was referred to CTS for surgical resection.

Conclusion: Spindle cell carcinoma is a rare tumor and mostly detected on routine chest x-ray examination.

14.27
SENSITIVITY AND SPECIFICITY OF XPRT
MTB/RIF IN RAPID DIAGNOSIS OF
TUBERCULOUS PLEURAL EFFUSION

Muhammad Irfan¹, Kauser Jabeen², Sehrish Butt¹, Ali Bin Sarwar Zubairi¹, Safia Awan¹, Rumina Hasan²
¹Department of Medicine, ²Department of Pathology and Microbiology, Aga Khan University

Background: Tuberculous pleural effusion (TPE) occurs in up to 25% of TB patients. Owing to the pauci-bacillary nature, the diagnosis of TPE is a challenge. Newer diagnostic tools are required for the rapid diagnosis of TPE.

Objectives: Evaluate the sensitivity and specificity of Xpert MTB/RIF for the rapid diagnosis of TPE.

Methods: A prospective cross-sectional study was performed at Aga Khan University Hospital, Pakistan from August 2014 to June 2016. Patients with TPE were recruited on history, exudative lymphocytic nature of effusion and raised adenosine deaminase level. Pleural fluid samples were tested for AFB smear, culture and Xpert MTB/RIF.

Results: We enrolled 99 patients with mean age of 50.4±20.3 years. Effusion size was mild in 18 (18.2%), moderate in 77 (77.8%) and massive in 04 (4.0%). Pleural fluid AFB smear was positive in 1 (1.01%) and Xpert MTB/RIF was positive in 10 (10.1%) cases. AFB culture was positive in 14 (14.14%) cases. Considering AFB culture as Gold standard, the sensitivity of Xpert MTB/RIF was found to be 57.14% (95% CI: 28.86 – 82.34%) and specificity was 97.65% (95% CI: 91.76 - 99.71%). The sensitivity of Xpert MTB/RIF in TPE was significantly higher in comparison with AFB smear.

Conclusion: Xpert MTB/RIF can be used as an effective tool for the rapid diagnosis of TPE with a modest sensitivity and high specificity. Multicentre study with large sample size is needed to further evaluate the effectiveness of this method for the early diagnosis of TPE.

Keywords: Tuberculous pleural effusion, Xpert MTB Rif, diagnosis

14.28

PREVALENCE AND KNOWLEDGE OF ELECTRONIC CIGARETTES AMONGST MEDICAL STUDENTS, A CROSS SECTIONAL SURVEY FROM KARACHI, PAKISTAN

Nousheen Iqbal¹, Zain A Khan², Syed Muhammad Hamza Anwar², Omar Irfan¹, Babar Irfan³, Ammar Hussain⁴, Maria Bibi⁵, Javaid A Khan¹

¹Section of Pulmonary and Critical Care Medicine, Department of Medicine, Aga Khan University, Karachi, ²Dow university of health science - Karachi (Pakistan),

³Jinnah sindh University - Karachi (Pakistan), ⁴Jinnah medical and dental collage - Karachi, ⁵Liaquat University of Medical and Health Sciences – Karachi (Pakistan)

Background: The manufacturers of e-cigarettes are actively marketing their product by using electronic and social media in developing country like Pakistan. However there is scarcity of data regarding prevalence and knowledge about e-cigarettes among medical students.

Objective: To determine the prevalence and knowledge of e-cigarettes amongst medical students of Karachi, Pakistan

Methods: A Cross sectional survey was conducted from 1st July till 30th September 2016 in five medical universities of Karachi, Pakistan. A self-administered questionnaire was used, a total of 500 medical students consented to participate in the study.

Results: The mean age was 21.5 + 1.7 years and 58% were females. Out of 500, 39% were tobacco user included conventional cigarettes, shisha and smokeless tobacco. Over 65% had knowledge about e-cigarettes and majority were tobacco user (87.6%, p<0.001). The prevalence of e-cigarette was 6.2% and was higher among tobacco user 13.9% and males 74% (p<0.001). E-Cigarettes were mostly perceived as less harmful than tobacco cigarettes (39%), helpful in quitting smoking (27%), associated with respiratory diseases (36%), addictive (36%), and not safe for pregnancy (44%). Among current smoker 5.4% attempted to quit of which 17% were e-cigarette user and 44.9% were nonuser. E-cigarette user were found to be more indulged in other tobacco products including conventional cigarettes 80.6%, shisha 83.9% and smokeless tobacco 38.7%.

Conclusion: Although prevalence of e-cigarettes is low but most of the people who took on e-cigarettes ended up as a dual user rather than quitter.

Keywords: Knowledge, prevalence, e-cigarette, medical students

14.29

PERSISTENT HYPERGLYCEMIA AS A PREDICTOR OF OUTCOME OF NON-INVASIVE VENTILATION IN PATIENTS WITH DECOMPENSATED COPD

Farah Idrees, Muhammad Irfan
Department of Medicine, Aga Khan University

Introduction: Persistent hyperglycemia during ICU admission has been reported as a poor prognostic marker in patients on invasive mechanical ventilation. However, its impact on the outcome on non-invasive ventilation has not been widely investigated.

Objective: To determine whether mean blood glucose levels within 48 hours of admission independently predict outcome of NIMV during COPD exacerbations causing acute decompensated ventilatory failure.

Materials and Methods: A prospective study was done on 54 patients at Aga Khan University Hospital, Karachi between 1st July, 2016 to 31st December, 2016. The patients were divided into two groups on basis of presence or absence of hyperglycemia (defined as mean glucose value greater than 130mg/dl). NIMV failure was defined as non-resolving respiratory acidosis (PH<7.25) despite application of NIMV for 48 hours and unable to wean off.

Results: 54 patients met inclusion criteria. The average age was 65.52±13.3 years, 55.6% (n=30) were female. 50% (n=27) had a pre-existing diagnosis of diabetes. The mean PH on admission was 7.21±0.06, mean APACHE II score was 13.7±3.77. 53.7% (n=29) had hyperglycemia. The frequency of NIMV failure with hyperglycemia was 37.9% (n=11/29) as compared to 8% (n=2/25) in the non-hyperglycemic group, the mean PH in 48 hours being 7.28±0.06 versus 7.34±0.41 and the mean elevation of PCO₂ from baseline PCO₂ being 16.45± 3.45 versus 7±2.34 mmHg respectively. Apache II score greater than 11 (OR 9.09, 95% CI 1.0740 to 76.8817, p=0.04) and admission PH less than 7.30 (OR 107.25, 95% CI 13.51 to 850.84, p<0.0001) were other independent factors associated with NIMV failure while the presence of pre-existing diabetes or pneumonia and the admission serum bicarbonate were not found to be statistically significant.

Conclusion: Persistent hyperglycemia in the first 48 hours of admission, Apache Score greater than 11 and admission PH< 7.30 is associated with high NIMV failure.

14.30 SHISHA; GATEWAY TO OTHER ADDICTIONS

*Sameer Ur Rehman, Mohammed Ali Sadiq, Maria Adnan, Ali B S Zubairi, Javaid Ahmed Khan
Department of Medicine, Aga Khan University*

Objectives: To estimate the frequency of different forms of tobacco intake like smoker's tobacco, chewable tobacco and snuff tobacco among shisha smoker's and to study the patterns and predictors of shisha smoking among youth.

Design: Questionnaire based cross-sectional study conducted around four cities in Pakistan. The participants were interviewed at shisha cafes and other public places like restaurants and shopping malls.

Results: A total of 406 participants, 72.9% males and 27.1% females were included in the study. Among shisha smokers, the rate of cigarette smoking was 40.1%; the use of chewable tobacco, 16%; and tobacco snuff, 8.1%. The median age of initiation of Shisha

smoking is 20 years. Curiosity and social trend were found out to be the most significant factors for initiation. Most of the participants (69.1%) considered Shisha smoking to be less deleterious to health than cigarettes. Respiratory disease was the most commonly cited health effect of water-pipe smoking. The predominant pattern of use was occasional smoking (60.9%).

Conclusion: There is high frequency of tobacco use in form of cigarettes, chewable tobacco and snuff tobacco among shisha smokers. The highest frequency is for cigarette smoking. The rise in Shisha smoking as a trendy social habit appears to be occurring despite emerging scientific evidence of its potential health risks.

Keywords: Shisha smoking, tobacco, cigarette smoking

14.31 SPECTRUM OF RESPIRATORY DISEASES PRESENTING IN OUTPATIENT PULMONOLOGY CLINIC AT AGA KHAN UNIVERSITY: AN AUDIT FROM PULMONOLOGY OUTPATIENT DATABASE

*Afshan Yaseen, Muhammad Irfan, Talha Shahzad, Ali Bin Sarwar Zubairi, Nousheen Iqbal, Hashir Majid, ,
Mutaza Kazmi, Naveed Haroon, Javaid Ahmed Khan
Department of Medicine, Aga Khan University*

Background: Respiratory diseases are one of the leading causes of visiting outpatient clinics worldwide. There is a lack of data on the spectrum of respiratory diseases in adults presented to outpatient clinics of major tertiary care centers of Pakistan.

Objective: To study the spectrum of respiratory diseases presented in outpatient pulmonology clinic at Aga Khan University (AKU), Karachi.

Method: Section of Pulmonary and Critical care Medicine has started to maintain a computerized outpatient database from May 2015. In this audit we have reviewed 20 months data from this data base to evaluate the spectrum of pulmonary diseases presented in our pulmonology outpatient clinics. We have divided the pulmonary diseases into 10 major groups including airway diseases, pulmonary infections, pulmonary neoplasms, interstitial lung disease, pleural diseases, pulmonary vascular diseases, sleep disorders, connective tissue associated lung diseases,

occupational & environmental diseases and chest wall/neuromuscular diseases.

Result: A total of 8802 Patients records were reviewed. There were 51.71 % were males. The mean age of male and female were 51.41 years and 48.28 years respectively and ranged from 15-97 years. Airway diseases (73.06%) are the most common presenting disease followed by pulmonary infections (11.6%) and interstitial lung disease (4.6%).

Conclusion: This is the first large audit of spectrum of respiratory diseases presented in outpatient clinic of a major tertiary care hospital of country. Airway diseases and pulmonary infections are identified as two commonest groups of diseases presented in outpatient clinic. There is a need of maintaining a database in all major hospitals of country to know the actual burden of various forms of pulmonary diseases in our country.

Source of Funding: Department of Medicine, AKU

14.32

A CASE OF TRACHEOBRONCHOPATHIA OSTEOCHONDROPLASTICA IN A 61 YEAR OLD FEMALE: CASE REPORT

Mujahid Hussain, Talha shahzad, Imranullah khan, Rizwan Ali

Department of Medicine, Aga Khan University

Introduction: Tracheobronchopathia osteochondroplastica (TPO) is a rare, benign condition involving the trachea, and possibly major bronchi. TPO was first described in detail by Wilks in 1857. Histologically it is characterized by osseous and cartilaginous submucosal nodules connected to tracheal cartilage and sparing posterior part of trachea. In spite of marked radiographic changes, patients are only rarely symptomatic since severe airway obstruction is unusual.

Case Report: 61 years old female, housewife from Quetta, non smoker with history of Gastroesophageal Reflux Disease (GERD) with no other comorbidities presented in clinic with history of cough for the last one month associated with productive mild whitish sputum. She had 3 episodes of hemoptysis in the last one year. Last episode of hemoptysis which she had was one month back. It was clotted blood and half a cup in quantity. In addition to the above mentioned findings she was also giving 2 to 3 days history of fever 3 months back. There was no associated chest

pain, shortness of breath, weight loss and anorexia. There was no history of tuberculosis or any TB contact. She was having significant history of biomass fuel exposure. Her past medical and surgical history was unremarkable.

On general physical examination there was no positive finding. On respiratory examination there was bilateral mild wheezing otherwise systemic examination was unremarkable. Her chest xray showed alveolar infiltrates in the right lower zone otherwise all blood tests were normal. HRCT chest was done for detailed inquiry which revealed bilateral nodular infiltrates with no evidence of any cavity or consolidation. After that bronchoscopy was planned to look for any apparent source of hemoptysis. Bronchoscopy revealed extensive nodular changes involving whole trachea sparing the posterior part and main bronchi although there was no endobronchial lesion seen. Bronchoalveolar lavage was sent for microbiology and cytology and multiple biopsies were taken from the nodular lesions in trachea and was sent for histopathology. Her BAL culture yielded growths of *Pseudomonas aeruginosa* and *Staph. aureus* and the histology revealed bronchial tissue fragments covered by pseudostratified ciliated columnar epithelium and the underlying subepithelial tissue showed calcified bony spicules. Based on history, radiological and histopathological findings, diagnosis of tracheobronchopathia osteochondroplastica was made.

Conclusion: Rare disease should not be overlooked and bronchoscopy should be done in all patients with chronic symptoms because it may uncover some very rare disease which may present with nonspecific chronic symptoms.

14.33

ASTHMA CONTROL TEST (ACT)- HOW WELL CONTROLLED ARE ASTHMA PATIENTS IN PAKISTAN?

Javaid Khan, Nousheen Iqbal, Muhammad Irfan
Department of Medicine, Aga Khan University

Introduction: Asthma is one of the most common chronic diseases of the world. An estimated 300 million people worldwide suffer from asthma. It is a major cause of school/work absence and it increases the burden on health care systems

Objective: To assess the level of asthma control by ACT in patients attending a university hospital chest clinic.

Methods: A pilot study in Pakistani patients aged above 16 years were included, consecutive patients

attending chest clinic labeled as asthmatic included. Patients filled the questionnaire with the help of research medical officer. Those who could not read English were asked questions in local language.
Results: One hundred and fifty consecutive patients were included. Sixty one (41%) were first time attendees and 89(59%) follow-ups. Forty six (31%) patients were in the step 1 management of asthma as defined by the GINA, and 52(34.5%) in stage 2 and 3 each. Of these patients only 10(7.0%) patients had an ACT score of 25. Forty seven (31.0%) had a score between 20-24 and 93 (62%) patients had a score < 20. Fifty seven (61%) patients with 'poorly controlled' asthma were females.

Conclusion: As assessed by this particular tool, over 60% of patients visiting the chest clinic have poorly controlled asthma. ACT is easy to use and require minimal time and it helps in identifying those with poorly controlled asthma. More studies are needed with translated version of ACT in local languages

14.34

WEGNER GRANULOMATOSIS WITH SQUAMOUS CELL ATYPIA ON BRONCHOALVEOLAR LAVAGE CYTOLOGY. A RARE PRESENTATION

*Rizwan Ali, Imranullah khan, Muhammad Irfan, Kashif Aziz, Mujahid hussain
Department of Medicine, Aga Khan University*

Introduction: Wegner Granulomatosis, that is now termed as granulomatosis with polyangiitis. It is a triad of small vessel vasculitis, granulomatous inflammation and necrosis. C-ANCA is positive in 90% of the cases. We present a case report of patient who presented with fever and consolidation on xray, her cytology revealed squamous cell atypia.

Summary: 38 year old lady with prior history of hypertension and diabetes mellitus came with history of fever for one month and cough. She had weight loss of 15 kilogram over one month and she also had knee joint pains. She was diagnosed to have tuberculosis based on her history by physician outside AKUH and had taken anti tuberculosis therapy for 2 weeks but her symptoms did not resolve. She came to us with fever shortness of breath and weight loss. On examination, she was short of breath, ill looking. There was no joint tenderness on examination. No sore throat, no lymphadenopathy. She had increased vocal resonance with vesicular breathing in left upper chest. Chest xray was done which revealed homogenous alveolar infiltrates in left upper zone with patchy non

homogenous alveolo interstitial infiltrate in bilateral lung fields.. She underwent bronchoscopy and alveolar lavage was sent for cytology, gene xpert and AFB smear. Her complete microbiological workup came out to be negative and she was deteriorating clinically. She also gave history of ear discharge multiple times in past. Keeping in view her history, autimmune work up was sent. Her ANCA came out to be positive and she was given intravenous steroids for treatment of ANCA associated vasculitis. She started improving with steroids. She was then discharged on oral steroids. On follow up her cytology revealed that she had squamous cell atypia arising suspicion of underlying malignancy, but her clinical picture and follow up xray were remarkably improved on steroid therapy. So she is being kept on that treatment and will be followed. To date she is fine. Later, literature review showed that squamous cell atypia can be found in Wegner's granulomatosis in rare cases.

Conclusion: Granulomatosis with polyangiitis can have cellular atypia on bronchoalveolar lavage. Further workup should be tailored upon patient response to therapy for this disease.

14.35

DRUG SUSCEPTIBILITY PATTERN OF MYCOBACTERIUM TUBERCULOSIS IN ADULT PATIENTS WITH TUBERCULOUS PLEURAL EFFUSION

*Muhammad Irfan¹, Kauser Jabeen², Sehrish Butt¹, Ali Bin Sarwar Zubairi¹, Safia Awan¹, Rumina Hasan²
¹Department of Medicine, ²Department of Pathology and Microbiology, Aga Khan University*

Background: Tuberculous pleural effusion (TPE) occurs in up to 25% of TB patients. Although drug resistance in TB patients has increased worldwide, there is limited information on drug resistance in TPE.
Objectives: To evaluate the drug susceptibility pattern of *Mycobacterium tuberculosis* in TPE

Methods: A prospective cross-sectional study was performed at Aga Khan University Hospital, Pakistan from August 2014 to June 2016. Patients with TPE were recruited on history, exudative lymphocytic nature of effusion and raised adenosine daminase level. Pleural fluid samples were tested for AFB smear, culture, and line probe assay MTBDR_{plus}. Culture-positive isolates were evaluated for drug susceptibility. Antituberculous drug susceptibility testing were performed according to CLSI M24-A42 guidelines by agar proportion technique on enriched Middlebrook 7H10 medium (BBL). Pyrazinamide resistance was detected at 100 µg/ml using the BD

BACTEC™ MGIT 960 PZA test medium and kit (Becton Dickinson USA).

Results: We enrolled 203 patients of TPE with mean age of 48.4±19.8 years. Pleural fluid AFB smear was positive in 4 (1.9%) and AFB culture was positive in 27 (13.3%) cases.

Resistance to at least one first-line drug was observed in 4 (14%) of the cases. Isoniazid resistance was found in 2/27 (7.4%) isolates. Resistance against ethambutol was found in 1/27 (3.7%) and for streptomycin was 2/27 (7.4%). All the isolates were sensitive to rifampicin and pyrazinamide.

Conclusion: The observed 14% prevalence of resistance to at least one first-line antituberculosis drug among pleural *M. tuberculosis* isolates highlights the importance of *M. tuberculosis* isolation for DST in patients with TPE prior to treatment selection.

Keywords: Tuberculous pleural effusion, drug resistance, diagnosis

14.36

SPECTRUM AND RESISTANCE PATTERN OF BACTERIA ISOLATED FROM RESPIRATORY SPECIMENS IN ADULT PATIENTS WITH ACUTE EXACERBATION OF BRONCHIECTASIS

Muhammad Irfan¹, Kauser Jabeen², Nousheen Iqbal¹, Joveria Farooqi², Rumina Hasan²

¹Department of Medicine, ²Department of Pathology and Microbiology, Aga Khan University

Background: Bronchiectasis unrelated to cystic fibrosis (CF) is increasingly being recognized as a chronic respiratory illness in developing countries. These patients present with frequent exacerbation of their illness. Respiratory infections and frequent bronchiectasis exacerbations has been linked and presence of certain bacteria has been associated with severe disease and frequent exacerbations. No data exists from Pakistan regarding the bacterial agents isolated from the above patient population during an episode of exacerbation.

Objective: To study the bacterial agents as well as their antimicrobial resistance yielded from respiratory specimens of adult patients with acute exacerbation of non CF bronchiectasis presented to a tertiary care hospital.

Results: Positive respiratory specimens (total 100 from 67 patients) with acute exacerbation of bronchiectasis were evaluated. These specimens were sputum (n=90), tracheal aspirate (n=5) and bronchoalveolar lavage (n=5). The most frequent organism was *Pseudomonas aeruginosa* (n=57) followed by *Hemophilus influenzae*

and *Hemophilus parainfluenzae* (n=22), *Streptococcus pneumoniae* (n=11) and *Klebsiella pneumoniae* (n=10). Proportion of *Pseudomonas aeruginosa* strains resistant or intermediately resistant to antipseudomonal antibiotics was high ranging from 24% against ciprofloxacin, 18% against cefipime, 14% against ceftazidime and gentamicin, 11% against amikacin, 10% against imipenem and 3.5% against piperacillin tazobactam. In *Hemophilus influenzae* around 73% isolates were resistant to cotrimoxazole, 55% to ciprofloxacin and 22% to ampicillin.

Conclusion: *Pseudomonas aeruginosa* is the commonest organism isolated from our patients with non CF bronchiectasis during exacerbation. A higher resistance against antipseudomonal 3rd generation cephalosporin and ciprofloxacin is a concern. Multicenter country wide study with large sample size is needed to further evaluate the bacterial etiology and resistance pattern in this population of patients.

Keywords: Bronchiectasis, etiology, drug resistance

14.37

ATYPICAL CARCINOID PRESENTING AS EMPYEMA THORACIS

Saba Afshan

Department of Medicine, Aga Khan University

Case: A 36 years old gentleman, with history of pulmonary TB in past, presented to ER with complaints of fever, cough, left sided pleuritic type chest pain and progressively worsening dyspnea for the last 10 days. He was hemodynamically stable. Upon workup, his CXR revealed a loculated left sided pleural effusion. He also had a CT Chest done from outside recently which also showed a loculated left pleural effusion. Diagnostic pleurocentesis was done and 5ml of thick pus was aspirated. Cardiothoracic team was consulted and the patient underwent left sided Video assisted Thoracoscopy. Tissue specimens from left lower lung lobe and pus was sent for microbiology and histopathology which came out as having features consistent with Atypical carcinoid. The patient was then referred for further management to medical oncology.

Discussion: Bronchial carcinoids belong to a broad spectrum of neuroendocrine tumors. Typical and Atypical Carcinoids are low- and intermediate-grade, respectively and have similar gross pathologic and radiologic features. Atypical Carcinoids are more aggressive than Typical Carcinoids. Recurrent obstructive pneumonitis/atelectasis and chest pain, are the most common symptoms of carcinoid tumors,

followed by cough and hemoptysis with evidence of a bronchial obstructing lesion in the majority of patients. This case represents a rare occurrence of atypical carcinoid as empyema thoracis. A peripherally located AC has the potential to present as empyema, as in our case. The mechanism of AC-related empyema was not determined in the present case. Patients with bronchial carcinoid tumors have a high life expectancy. Lobectomy is the most common procedure for the treatment of bronchial carcinoid tumors due to their metastatic potential, regardless of their size or location.

Our case also highlights the possibility of delayed diagnosis of pulmonary neoplasm, especially when it is small in size and/or is found in a peripheral location, due to the possible obscuration by pus and/or atelectatic lung, as well as the tendency to overlook this rare condition.

14.38 PREVALENCE OF PRE-XDR-TB, XDR-TB AMONG MDR-TB PATIENTS REGISTERED AT OJHA INSTITUTE OF CHEST DISEASES, KARACHI

Mariyam Gohar Ali, Nisar Rao
Department of Medicine, Aga Khan University

Aim and Object: To evaluate the prevalence of pre-extensively drug resistant tuberculosis (Pre-XDR), extensively drug resistant tuberculosis (XDR) among the MDR TB patients.

Material & Method: We reviewed the record of all patients registered in MDR clinic of Ojha Institute of Chest Diseases between January 2010 and December 2014. Data was collected about clinical details and resistance pattern.

Results: A total of 919 patients were enrolled during the period. 465(51%) were male. Most of the patients (718/919) were young i.e. from 15-44 age group. The pre-XDR TB and XDR-TB prevalence rate among MDR TB patients were 363/919 (39.5%) and 18/919 (02%) respectively. Out of 18 XDR-TB patients 05 were resistant to Km(Kanamycin) Am(Amikacin) Cm(Capreomycin) FQ (Fluoroquinolone), 04 were resistant to Km + FQ, 03 against Am+FQ and 06 against Cm+FQ. Out of 363 Pre-XDR TB patients 332 were resistant to FQ, 04 to Km, 07 to Cm, 02 were resistant to Km + Am and 18 were resistant to Km Am Cm.

Conclusion: There is high prevalence of pre-XDR tuberculosis in patients registered at Ojha Institute of Chest Diseases, Karachi, Pakistan. The XDR- TB

cases are also reported and registered. There is a need to closely follow the new TB patients registered in chest clinics for proper treatment and compliance to prevent drug resistant tuberculosis. There is also a need to ban over the counter sale of ATT and specifically quinolones.

14.39 SIMULTANEOUS PRESENTATION OF PULMONARY EMBOLISM AND SPONTANEOUS PNEUMOTHORAX IN A YOUNG MALE

Ammarah Yasmeen, Muhammad Irfan
Department of Medicine, Aga Khan University

Case: A 33 years old male, presented to AKUH ER with complaints of sudden onset breathlessness worsening over last 2 days accompanied by left sided chest pain. His past history was significant for HTN and Diabetes. He had ischemic strokes twice in the right MCA territory leading to functional impairment. He was an occasional smoker. In recent past, he was found to have Factor V Leiden mutation and Protein S deficiency but not on any anticoagulation therapy. Initial workup including CBC showed bicytopenia. ABGs revealed hypoxemia with a paO_2 of 62mmHg. CXR showed left sided pneumothorax. Left sided Chest tube was placed. CT chest revealed pulmonary embolism in the subsegmental branches of right upper and lower lobe pulmonary arteries. Therapeutic anticoagulation was started. Bronchoscopy and BAL was done which showed Pneumocystis carinii. His autoimmune profile and workup for APLA was negative. He had no history of high risk behaviours in past and HIV profile was also negative. His treatment was optimized and he was discharged on warfarin with treatment for PCP pneumonia.

Discussion: This is a case of presentation of spontaneous pneumothorax and pulmonary embolism simultaneously in a patient with underlying Pneumocystis pneumonia and a hypercoagulable state. The incidence of spontaneous pneumothorax from pulmonary emboli is a rare entity and should be considered in the appropriate clinical context. Chronic smokers are at a higher risk of developing deep vein thrombosis, which can lead to PTE and are also known to be at risk of developing spontaneous pneumothorax. However in our patient, the underlying hypercoagulable state and limited functional activity secondary to stroke led to risk of developing P.E.

14.40

AN UNUSUAL RADIOLOGICAL PATTERN OF CRYPTOGENIC ORGANIZING PNEUMONIA: BILATERAL PULMONARY NODULES

Talha Shahzad, Mujahid Hussain

Department of Medicine, Aga Khan University

Introduction: Cryptogenic organizing pneumonia (COP), is a type of diffuse interstitial lung disease that affects the distal bronchioles, respiratory bronchioles, alveolar ducts, and alveolar walls. The typical radiological appearance of COP is the presence of bilateral peripheral patchy air-space opacities. Here we present a case of a 41 years old male with bilateral nodular infiltrates on CT scan diagnosed with cryptogenic organizing pneumonia.

Case: A 41 year old male, history of Thyroid carcinoma 2 years back for which Thyroidectomy was done, now presented with 8 months history of progressive cough and dyspnea, low grade fever and 10 kg weight loss. His initial CT scan showed bilateral patchy nodular infiltrates with tree-in-bud appearance, predominantly involving upper lobes. His bronchoscopy was done which turned out to be negative for infective etiology or metastasis, but patient was started on anti-tuberculosis therapy on clinical grounds. Patient continued to worsen after six months of treatment and came to Aga Khan Hospital where his surgical lung biopsy was performed which showed the interstitium to be expanded by moderate to severe acute and chronic inflammation along with collections of proliferating fibroblasts projecting into the alveolar lumina suggestive of Organizing Pneumonia. Patient was started on corticosteroids at the doses of 0.5 mg/kg/day with subsequent tapering. Patient responded well to treatment with subsequent CT scan after 3 months showed complete resolution of the infiltrates.

Conclusion: Cryptogenic organizing pneumonia is a distinct clinicopathological entity characterized by a sub-acute illness with shortness of breath, fever, cough, malaise and patchy peripheral air-space infiltrates on radiology. Our patient had an unusual radiological pattern of diffuse discrete pulmonary nodules with tree-in-bud appearance associated with COP that mimicked pulmonary metastases or tuberculosis. So this clinical entity is important to consider with such radiological findings.

Keywords: Nodular infiltrates, Cryptogenic Organizing Pneumonia, Lung Biopsy

14.41

DIAGNOSTIC ACCURACY OF TWO NUCLEIC ACID AMPLIFICATION TESTS FOR RAPID DIAGNOSIS OF TUBERCULOUS PLEURAL EFFUSION

Muhammad Irfan¹, Kauser Jabeen², Sehrish Butt¹, Ali Bin Sarwar Zubairi¹, Safia Awan, Rumina Hasan²
¹Department of Medicine, ²Department of Pathology & Laboratory Medicine, Aga Khan University

Background: Tuberculous pleural effusion (TPE) occurs in up to 25% of TB patients. Owing to the pauci-bacillary nature of the pleural fluid, the diagnosis of TPE is a challenge. Newer diagnostic tools are required for the rapid diagnosis of TPE.

Objectives: To compare the sensitivity and specificity of two commercially available nucleic acid amplification test Xpert MTB/RIF and Geno type MTBDR_{plus} line probe assay (MTBDR_{plus}) for the rapid diagnosis of TPE.

Methods: A prospective cross-sectional study was performed at Aga Khan University Hospital, Karachi, Pakistan from August 2014 to January 2016. Patients with suspected TPE were recruited on the basis of history, exudative lymphocytic nature of effusion and raised adenosine deaminase level. Pleural fluid samples were tested for AFB smear, culture, Xpert MTB/RIF and MTBDR_{plus}.

Results: We enrolled 99 patients with mean age of 50.4±20.3 years. Effusion size was mild in 18 (18.2%), moderate in 77 (77.8%) and massive in 04 (4.0%). Pleural fluid AFB smear was positive in 1 (1.01%), Xpert MTB/RIF was positive in 10 (10.1%) and MTBDR_{plus} was positive in 6 (6.06%) cases. AFB culture was positive in 14 (14.14%) cases. Considering AFB culture as Gold standard, the sensitivity of Xpert MTB/RIF was found to be 57.14% (95% CI: 28.86 – 82.34%) and specificity was 97.65% (95% CI: 91.76 – 99.71%) and the sensitivity of MTBDR_{plus} was 35.71% (95% CI: 12.76 – 64.86%) and specificity was 98.82% (95% CI: 93.62 – 99.90%). The sensitivity of Xpert MTB/RIF in TPE was significantly higher than MTBDR_{plus} while the specificity was comparable among the two tests.

Conclusion: Xpert MTB/RIF has a significantly higher sensitivity for the rapid diagnosis of TPE as compared to MTBDR_{plus} and AFB smear microscopy.

Multicentre study with large sample size is needed to further evaluate the effectiveness of this method for the early diagnosis of TPE.

Keywords: Tuberculous pleural effusion, Line probe assay, Xpert MTB/RIF, diagnosis

14.42

A COMPARATIVE STUDY ON COPD ASSESSMENT TEST (CAT) AND ST. GEORGE'S RESPIRATORY QUESTIONNAIRE (SGRQ) AS TOOLS FOR ASSESSING QUALITY OF LIFE OF COPD PATIENTS

*Nida Ashraf, Muhammad Irfan, Nousheen Iqbal, Safia Awan, Javaid Ahmed Khan
Department of Medicine, Aga Khan University*

Background: COPD is one of the most common lung disorders worldwide and contributes to a great deal of morbidity and mortality. One of the main concerns for physicians treating this disease is the quality of life of the patient. Many such tools have been formulated which can help physicians determine the health status of a patient. The COPD Assessment Test (CAT) is one such tool, which is short and simple to administer.

Objective: We aimed to compare the CAT with St. George's Respiratory Questionnaire to determine whether it can reliably evaluate the quality of life of COPD patients presenting in the clinics of two of Karachi's largest tertiary care hospitals.

Methods: 137 consecutive patients presenting to the pulmonary consulting clinics of the Aga Khan University Hospital and Jinnah Postgraduate Medical Centre were included in this study. Questionnaires were either filled by the patients themselves, or by the authors based on direct interviews with pre-diagnosed COPD patients over a two month period. Purposive sampling was used. Data was analyzed using SPSS version 15.0.

Results: The mean age of the patients was 65 ± 10 yrs (Range: 40-96). Patients had a poor quality of life with mean CAT score being 22.7 ± 8.53 (Range: 5-40) and mean SGRQ score being 59.1 ± 22.4 (Range: 6.9-95.9). The mean time taken to complete the CAT was 294s (4.9 min), whereas the mean time taken to complete the SGRQ questionnaire was 912s (15.2 min). The correlation of CAT versus SGRQ was 0.60 ($p < 0.001$).

Conclusion: This study exhibited a good co-relation between CAT and SGRQ in determining the quality of life of COPD patients. The CAT is a short and easy to administer questionnaire that can be deemed reliable in assessing the quality of life of COPD patients.

14.43

ASSOCIATION OF HYPERCAPNIA ON ADMISSION WITH INCREASED LENGTH OF HOSPITAL STAY AND SEVERITY IN PATIENTS ADMITTED WITH COMMUNITY ACQUIRED PNEUMONIA: A PROSPECTIVE OBSERVATIONAL STUDY FROM PAKISTAN

*Nousheen Iqbal, Muhammad Irfan, Ali Bin Sarwar Zubairi, Safia Awan, Javaid A Khan
Department of Medicine, Aga Khan University,*

Objective: For adult patients admitted to a university based hospital in Karachi, Pakistan, diagnosed with Community Acquired Pneumonia: Does the presence of hypercapnia on admission correlate with an increased length of hospital stay and severity compared to no hypercapnia on admission?

Methods: Patients who met the inclusion criteria were enrolled. Severity of pneumonia was assessed by CURB-65 and PSI scores. An arterial blood gas analysis was obtained within 24 hours of admission. Based on arterial paCo_2 levels patients were divided into three groups; hypocapnic ($\text{paCo}_2 < 35$ mm Hg), hypercapnic ($\text{paCo}_2 > 45$ mm Hg) and normocapnic ($\text{paCo}_2 < 35-45$ mm Hg).

Outcomes: The primary outcome was to see the association of hypercapnia on admission with mean length of hospital stay while secondary outcomes were; the need of mechanical ventilation, ICU admission and in-hospital mortality.

Results: Total 295 patients were enrolled over the period of one year, the mean age was 60.20 ± 17.0 years and 157 (53.22%) were males. Hypocapnia was found in 181 (61.35%) and hypercapnia in 57 (19.32%) patients. Hypercapnic patients had a longer hospital stay (9.27 ± 7.57 mean days), increased requirement for noninvasive ventilation (NIMV) on admission 45 (78.94%) and longer time to clinical stability (TCS) (4.39 ± 2.0 mean days) as compared to other groups. Overall mortality was 41 (13.89%), however there was no statistical significant difference of mortality ($p=0.35$) and ICU admission ($p=0.37$) among three groups. On multivariable analysis, increase LOS was associated with NIMV use, ICU admission, hypercapnia and normocapnia.

Conclusion: Hypercapnia on admission is associated with severity of CAP, longer TCS, increased LOS and need of NIMV. It should be considered as an important criteria to label the severity of illness; also a determinant of patients who will require a higher level of hospital care. However further validation is required.

Keywords: Pneumonia, Respiratory failure, Hypercapnia, Hypocapnia.

14.44

ARE OUR PATIENTS WITH AIRFLOW OBSTRUCTION USING INHALERS CORRECTLY?

Muhammad Zain Farooq¹, Muhammad Saad Farooq¹, Wajiha Waqar¹, Marium Mustaqeem¹, Dr Javaid Ahmed Khan², Samiyah Saadullah¹

¹Medical Student at Dow Medical College, Dow University of Health Sciences, Karachi, Pakistan, ²Section of Pulmonary and Critical Care Medicine, Department of Medicine, Aga Khan University, Karachi

Objective: To evaluate the inhaler technique of patients and the awareness acquired during pulmonary teachings given in the beginning of the treatment.

Methods: This cross-sectional study was conducted at Civil Hospital, Karachi and comprised patients diagnosed with obstructive broncho-pulmonary diseases and who were using inhaler therapy. A questionnaire was designed to assess the technique by an inhaler technique checklist, which was pilot-tested and was filled after obtaining verbal consent. SPSS 19 was used for data analysis.

Results: Of the 202 participants, 110(54.45%) were women and 92(45.54%) were men. Moreover, 168(83.2%) used metered-dose inhaler while 34(16.8%) used dry-powder inhaler. Besides, 134(79.8%) patients showed incorrect technique while using metered-dose inhaler while 22(61.1%) used dry-powder inhaler improperly.

Conclusion: In spite of the guidelines given, improper inhalation technique persisted in population leading to uncontrolled asthma and poor treatment compliance.

Keywords: Inhalers; Inhalation technique; Asthma

14.45

SENSITIVITY AND SPECIFICITY OF GENOTYPE MTBDRPLUS LINE PROBE ASSAY IN RAPID DIAGNOSIS OF TUBERCULOUS PLEURAL EFFUSION

Muhammad Irfan¹, Kauser Jabeen², Sehrish Butt¹, Ali Bin Sarwar Zubairi¹, Safia Awan¹, Rumina Hasan²
¹Department of Medicine, ²Department of Pathology and Microbiology, Aga Khan University

Background: Tuberculous pleural effusion (TPE) occurs in up to 25% of TB patients. Owing to the pauci-bacillary nature, the diagnosis of TPE is a challenge. Newer diagnostic tools are required for the rapid diagnosis of TPE.

Objectives: Evaluate the sensitivity and specificity of Geno type MTBDRplus line probe assay (MTBDRplus) for the rapid diagnosis of TPE and frequency of MDR TB in TPE through detection of rifampicin and isoniazid resistance.

Methods: A prospective cross-sectional study was performed at Aga Khan University Hospital, Pakistan from August 2014 to June 2016. Patients with TPE were recruited on history, exudative lymphocytic nature of effusion and raised adenosine daminase level. Pleural fluid samples were tested for AFB smear, culture and MTBDRplus.

Results: We enrolled 203 patients with mean age of 48.4±19.8 years. Effusion size was mild in 43(21.2%), moderate in 148(72.9%) and massive in 12(5.9%). Pleural fluid AFB smear was positive in 4 (1.9%) and MTBDRplus was positive in 14 (6.9%) cases. AFB culture was positive in 27 (13.3%) cases. INH resistance was detected in one case via MTBDRplus. Considering AFB culture as Gold standard, the sensitivity of MTBDRplus was found to be 44.4% (95% CI: 25.5 - 64.7%) and specificity was 98.8% (95% CI: 95.9 - 99.8%). The sensitivity of MTBDRplus in TPE was significantly higher in comparison with AFB smear.

Conclusion: MTBDRplus can be used as an effective tool for the diagnosis of TPE with a modest sensitivity and high specificity. Multicentre study with large sample size is needed to further evaluate the effectiveness of this method for the early diagnosis of TPE.

Keywords: Tuberculous pleural effusion, Line probe assay, diagnosis

14.46

A YOUNG MALE WITH RECURRENT HEMOPTYSIS FOR 2 YEARS – BRONCHIAL CARCINOID TUMOR

*Talha Shahzad, Rizwan Ali, Saulat Fatimi
Department of Medicine, Aga Khan University*

Introduction: Bronchial neuroendocrine (carcinoid) tumors are slow growing tumors arising from Enterochromaffin (EC) cells and accounts for 10% of all carcinoid tumors. Patients usually present with a history of cough, wheezing, hemoptysis, chest pain or recurrent pneumonia. Mentioned here is a case of 25 year old male with recurrent hemoptysis for the last two years.

Case: A 25 year old male, non-smoker, with no known co-morbidities, came to the pulmonology clinic with 2 years history of intermittent hemoptysis. He denied any history of fever, weight loss or chest pain. His chest X-ray showed suspicious mass-like opacity at the left retro cardiac area. His CT scan chest was done which confirmed an enhancing soft tissue lesion in left perihilar location measuring 17 x 14.5 mm which was extending into left lower lobe bronchus resulting in collapse of left lower lobe. Further, his bronchoscopy was performed which showed a highly vascular endobronchial mass in left main stem bronchus. Endobronchial biopsy was done which showed well differentiated Neuroendocrine (Carcinoid) Tumor. Patient underwent surgical resection of the tumor and was later discharged in stable condition.

Conclusion: Bronchial carcinoid tumors are an uncommon group of pulmonary neoplasms that are characterized by neuroendocrine differentiation and relatively indolent clinical behavior, but they can be malignant and also lead to complications like massive hemoptysis or recurrent pneumonia. A high index of suspicion should be maintained, especially in young patients with such clinical presentations and radiological, bronchoscopic and pathological investigations for accurate and early diagnosis must be undertaken.

Keywords: Lung mass, Hemoptysis, Carcinoid tumor, Lung Biopsy

14.47

CHRONIC PULMONARY MUCORMYCOSIS: AN EMERGING FUNGAL INFECTION IN DIABETES MELLITUS

Nousheen Iqbal,¹ Muhammad Irfan,¹ Kauser Jabeen,² Murtaza Mohammed Kazmi,¹ and Muhammad Usman Tariq³

¹Department of Medicine, ²Department of Pathology and Laboratory Medicine, ³Department of Pathology and Microbiology, Aga Khan University

Mucormycosis commonly affects immunocompromised individuals with defects in neutrophil function or count. Diabetes mellitus is an important risk factor due to impaired innate and acquired immunity for mucormycosis, with rhino-orbital-cerebral involvement as a common presentation. Pulmonary mucormycosis (PM) although a rare presentation in diabetic patients but is associated with high mortality and morbidity. An early diagnosis of PM is difficult, due to rarity of the disease and clinical and radiological features resembling tuberculosis (TB) which is common in Pakistan. Here we present three cases of chronic PM in patients with diabetes and with no other apparent risk factors.

Case 1: A 60-year-old diabetic female presented with fever and productive cough with hemoptysis for two months. Crackles were audible at right middle and lower part of chest. Serial chest X-rays showed persistent homogenous consolidation in right lower lung and no improvement with antibiotics. Computed tomographic (CT) scan chest was done which showed a consolidation with cavitary lesion in right middle lobe. Biopsy showed aseptate hyphae and suggestive of PM.

Case 2: A 60-year-old diabetic female presented with history of cough and fever for one month. Crackles were audible in left middle to lower part of chest. Chest X-ray showed left hilar soft tissue mass with perihilar infiltrates. High-resolution CT chest (HRCT) showed consolidation in lingular segment and left upper lobe of lung with few surrounding scattered infiltrates. Biopsy showed aseptate hyphae and suggestive of PM.

Case 3: A 69-year-old diabetic female presented with shortness of breath, productive cough and fever for two months. Bilateral crackles were audible on lower chest. Chest X-ray showed bilateral lower zone alveolar infiltrates and cystic changes in right lower zone in perihilar region. CT scan chest with contrast showed filling defect at bifurcation of right pulmonary artery consistent with pulmonary embolism. This was

associated with patchy airspace shadowing, apical fibrosis, fibrocystic and fibrocavitary changes in lungs more marked on right side. BAL done and fungal culture grew *Rhizopus* species suggestive of PM.

Conclusion: PM is an emerging cause of infectious morbidity and mortality. However, there is no specific sign and symptoms, diagnostic criteria and specific antigen test for the diagnosis and management of PM. As the incidence of DM is rising both in developed and developing countries it is important need to raise awareness regarding PM.

Keywords: Diabetes, pulmonary mucormycosis (PM), immunocompromised

14.48

COMPARISON OF ACID FAST SMEAR AND GENOTYPE MTBDRPLUS LINE PROBE ASSAY FOR RAPID DIAGNOSIS OF TUBERCULOUS PLEURAL EFFUSION

Muhammad Irfan¹, Kauser Jabeen², Sehrish Butt¹, Ali Bin Sarwar Zubairi¹, Safia Awan, Rumina Hasan²
¹Department of Medicine, ²Department of Pathology and Laboratory Medicine, Aga Khan University

Background: Tuberculous pleural effusion (TPE) occurs in up to 25% of TB patients. Owing to the pauci-bacillary nature of the pleural fluid, diagnosis of TPE is a challenge. Newer diagnostic tools are required for the rapid diagnosis of TPE.

Objectives: To compare the sensitivity and specificity of acid fast (AFB) smear and Genotype MTBDRplus line probe assay (MTBDRplus) for the rapid diagnosis of TPE.

Methods: A prospective cross-sectional study was performed at THE Aga Khan University Hospital, Karachi, Pakistan from August 2014 to June 2016. Patients with suspected TPE were recruited on the basis of history, exudative lymphocytic nature of effusion and raised adenosine deaminase level. Pleural fluid samples were tested for AFB smear, culture and MTBDRplus.

Results: We enrolled 203 patients with suspected TPE with mean age of 48.49±19.83 years. 43 (21.2%) had a history of TB contact. Effusion size was mild in 43(21.2%), moderate in 148(72.9%) and massive in 12(5.9%).

Pleural fluid AFB smear was positive in 4 (1.9%) cases and MTBDRplus was positive in 14 (6.9%) cases. AFB culture was positive in 27 (13.3%) cases. Considering AFB culture as gold

standard, sensitivity of MTBDRplus was significantly higher in comparison with AFB smear [44.44% (95% CI: 25.48-64.67%) vs. 14.81% (95% CI: 4.19% - 33.73%) p= 0.004]. There was no significant difference in specificity [98.86% (95% CI: 95.96-99.86%) vs. 99.54 (95% CI: 97.9-99.9%) p= 0.096].
Conclusion: MTBDRplus has a significantly higher sensitivity for the rapid diagnosis of TPE as compared to AFB smear. Multicentre study with large sample size is needed to further evaluate the effectiveness of this method for early diagnosis of TPE.

Keywords: Tuberculous pleural effusion, Line probe assay, diagnosis

Funding source: URC Grant from AKU

Techniques/Innovations

15.1 ENSURE SAFE TRANSITION OF NOVICE NURSE TO REGISTERED NURSE: BY INTRODUCING RN MODULE

Afreen Amir Ali
Nursing Services, Aga Khan University

Introduction: Provision of standard and quality care requires trained and skilled nursing staff. Due to high nurse turnover and hiring of novice nurse, this vision might be under fulfilled. In SL -7, C1 ward the experience of 47% staff are of less than two year. Knowledge, Skills and Experience make every nurse skillful and competent. Lack of these qualities in novice nurse not only make their transition difficult but might result in deteriorate patient quality care.
Objective: • To strengthening clinical competency in novice nurse by implementing RN module (unit based orientation module) • To ensure smooth transition of novice nurses and high quality care to the patient • To implement theoretical knowledge into practice through safe transition

Methodology: Firstly, need assessment was done by analyzing trends. Trends showing increase number in mortality and morbidity, increase nurse turnover and increase novice nurse in first two quarter of 2016. Issue was analyzed by Juran's problem solving methodology to identify the causes and effect. From September of 2016, project were began implemented to train novice nurse by developing RN module, an orientation module. The major theme of this module are consider under of umbrella of 4 "M" i.e. Man, material, measurement and Method of fish bone diagram. Strategies were applied accordingly.
Result: Pre and post tests were taken with the aim to evaluate effectiveness of the orientation module, Results showed significant improving in knowledge of novice nurse that helps them to implement this into practice. This also clear illustrate by different indicator like decrease in mortality and morbidity of patient. In addition positive feedback had also received from participate.
Conclusion: Juran's Problem Solving method was used to improve competency of novice nurses and smoothen their transition. Strategies implemented result in easy adjustment of staff to work place environment.

Keywords: Safe Transition, Novice nurse, effective orientation

15.2 STRENGTHENING HEALTH ASSESSMENT TO IMPROVE PATIENT SAFETY

Afreen Amir Ali, Parveen Amir Ali, Shafqat Shah
Nursing Services, Aga Khan University

Introduction: Health assessment is the most important nursing skills. It not only helps to identify patient's needs but also improves patient's quality care. The higher level of nurses' proficiency in health assessment would increase nurses' competency to monitor the changes in patients' health and contributes to make better clinical judgments and nursing intervention.
Objective: To ensure provision of safe care for patients according to organization's standards by strengthening nurse's competency in health assessment.
Method: There is increase number of trend in mortality and morbidity from first quarter of 2015 to second quarter of 2016. Similarly, internal audit of health assessment of is not up to the mark and showing need of improvement. Literature support that health assessment including risk assessment and identification of alarming sign is critical in enhancing patient care outcome. Issue was analyzed by Juran's problem solving methodology to identify the causes and effect. From third quarter of 2016, project were began implemented. Series of frequent educational in-service session with different teaching strategies were conducted under the umbrella of head to toe, focused and risk assessment. Moreover, Case based approach utilized in discussing patient in clinical round. Otherwise, different implications were intervene according to cause and effect.
Result: These interventions results in enhance staff's competency in health assessment and thus patient's mortality and morbidity improved
Conclusion: Strengthening health assessment is vital in the delivery of standard quality of care and improving patient safety

Keywords: health assessment, nursing, patient quality

15.3 THE OUTCOME OF KETAMINE AND PROPOFOL FOR PROCEDURAL SEDATION AND ANALGESIA (PSA) IN PEDIATRIC PATIENTS IN THE EMERGENCY DEPARTMENT

*Emaduddin Siddiqui, Bushra Qaiser Qureshi
Department of Emergency Medicine, Aga Khan
University*

Introduction Children often require relief of pain and anxiety when undergoing diagnostic or therapeutic procedures in the emergency department. In order to humanely achieve this, sedation with adequate analgesia is required with an agent that not only has rapid induction and a smooth recovery period, but also provides adequate cardiovascular and respiratory function, amnesia, anxiolysis and motor control throughout the procedure. Propofol combined with Ketamine has become standard practice for procedural sedation in a conscious patient in the emergency department. Few studies have looked at the overall success and incidence of complications of Propofol and Ketamine combined sedation as performed by non-anesthesiologists in the pediatric patients.

Objectives To determine the outcome (procedural time, sedation efficacy, recovery, complications) of Ketamine and Propofol for Procedural Sedation and Analgesia (PSA) in pediatric patients in the emergency department.

Methods We conducted a prospective, descriptive cross sectional study on a non probability consecutive sample of all subjects aged below 16 years presenting to the ED of Aga Khan University Hospital, Karachi within a year (2017), who received Ketamine and Propofol for procedural sedation and analgesia. Sample size calculated using Raosoft software with margin of error 5%, confidence interval 95% was 164. Ketamine IV 1 to 2 mg/kg followed by Propofol IV 1 mg/kg then IV 0.25 to 0.5 mg/kg every 3 to 5 minutes was used as required. Patients with known allergy to Ketamine, Propofol, egg and soy; low blood pressure or hemodynamic instability were excluded from the study. Frequency of data variables were analyzed by IBM SPSS software version 22. Results (ongoing) A total of 164 children were consented and enrolled in the study. The median dose of medication administered was 0.8 mg/kg each of Ketamine and Propofol. Sedation was effective in all patients. Median recovery time was 14 minutes. Few patients had minor complications during the procedure.

Conclusion Ketamine with Propofol are effective PSA agents in pediatric ED patients. Recovery times are short and adverse events are few. Patients, caregivers, ED staff were highly satisfied.

Keywords: Ketamine, Propofol, Procedural sedation

15.4 CHALLENGE TO PURCHASE LINEAR ACCELERATOR FOR THE TREATMENT OF CANCER

*Almas Rana, Memoona Kousar, Hasahm Ahmed,
Shaukat Ali
Department of Oncology, Aga Khan University*

Radiotherapy play an important rule for the treatment of cancer almost 60% of cancer patients receives radiotherapy at one point or another during the course of their treatment. Linear accelerator is an essential machine for any radiotherapy department and used to generate highly energetic x-ray beam used to kill cancerous cell. Due to the advancement of technologies this machine became more advance and having multiple options which is essentials for radiotherapy procedure. The various models of different manufacturer are commercially available and huge budget is require to purchase any machine. Complication arises for decision making how to choose any machine? because every vendor claim that their machine is superior then other. So our aim is to describe the necessary workup needed before buying any machine. Many studies recommended that twin's machines are better option to purchase. But it depends on clinical need, budget and available space. Purchasing a used linear acceleration is another option but it's not recommended for every facility. It has many limitations and may be suitable for customer that has limited budget, want to treat few patients per day, used it for backup etc. If capital has no problem then new machines is often more suitable option for customers. Any decision should be done on the behalf of comparison between machines specifications, price of machines, consistency and reliability, services and maintenance and uptime record of already installed machines. Onsite visit play also very important rule for decision.

Keywords: Radiotherapy, linear accelator, cancer

15.8 DOSIMETRIC COMPARISON BETWEEN FIVE, SEVEN AND NINE FIELDS INTENSITY- MODULATED RADIOTHERAPY (IMRT) PLAN FOR LEFT CHEST WALL.

Shahzaib Naeem, Shoukat Ali
Department of Oncology, Aga Khan University

Dosimetric Comparison between five, seven and nine fields Intensity-Modulated Radiotherapy (IMRT) Plan for Left Chest wall. Shahzaib Naeem, Shoukat Ali Department of Oncology, Section of Radiation Oncology, Aga Khan University Hospital Karachi Pakistan. Object: Our aim is to find the Dosimetric comparison between five, seven and nine fields IMRT plan for left chest wall irradiation. Introduction: The aim of radiotherapy is to give maximal dose to the tumor and spare organs at risks. All development is made on the behalf of this concept. IMRT plays an important role to achieve this radiotherapy goal. Several considerations should be required for IMRT plan as any single parameter will change the overall dosimetry of the plan. A considerable numbers of organs at risk are present around the primary radiation site. In our study we try to find optimum number of fields with best PTV coverage and organ at risk sparing. Materials and Methods Ten left chest wall cases were planned with on a Varian DHX 2100 High energy clinical linear accelerator using Eclipse 10 as the treatment planning system. The PTV was covered with 0.3 cm bolus to increase the surface dose. Each case was planned using 5,7 and 9 standard field arrangement with same priorities. Their Dose Volume Histograms were used to compare the dose distribution and tolerance criteria's for the critical organs. Results and Discussions: The mean contralateral breast dose is lesser in five field IMRT plan as compared to seven and nine fields. Similarly ipsilateral lung and spinal cord doses in lesser in fields IMRT plans. The mean heart dose of five field IMRT plan is 3% and 9% lower in comparison with seven and nine fields. There is also a significant difference in the number of monitor units (MUs) between the three different number of fields with nine fields exhibiting the most MUs (49% more than 5 Fields) and 7 field only slightly less (29% more than 5 Field) with directly correlates to the treatment time and scatter radiation absorbed by the patient. Conclusion: Our study shows that no significance difference between five, seven and nine fields IMRT treatment plans. The sparing of OAR's is better with lesser number of monitor units. Dosimetric Comparison between five, seven and nine fields Intensity-Modulated Radiotherapy (IMRT) Plan for

Left Chest wall. Shahzaib Naeem, Shoukat Ali Department of Oncology, Section of Radiation Oncology, Aga Khan University Hospital Karachi Pakistan. Object: Our aim is to find the Dosimetric comparison between five, seven and nine fields IMRT plan for left chest wall irradiation. Introduction: The aim of radiotherapy is to give maximal dose to the tumor and spare organs at risks. All development is made on the behalf of this concept. IMRT plays an important role to achieve this radiotherapy goal. Several considerations should be required for IMRT plan as any single parameter will change the overall dosimetry of the plan. A considerable numbers of organs at risk are present around the primary radiation site. In our study we try to find optimum number of fields with best PTV coverage and organ at risk sparing. Materials and Methods Ten left chest wall cases were planned with on a Varian DHX 2100 High energy clinical linear accelerator using Eclipse 10 as the treatment planning system. The PTV was covered with 0.3 cm bolus to increase the surface dose. Each case was planned using 5,7 and 9 standard field arrangement with same priorities. Their Dose Volume Histograms were used to compare the dose distribution and tolerance criteria's for the critical organs. Results and Discussions: The mean contralateral breast dose is lesser in five field IMRT plan as compared to seven and nine fields. Similarly ipsilateral lung and spinal cord doses in lesser in fields IMRT plans. The mean heart dose of five field IMRT plan is 3% and 9% lower in comparison with seven and nine fields. There is also a significant difference in the number of monitor units (MUs) between the three different number of fields with nine fields exhibiting the most MUs (49% more than 5 Fields) and 7 field only slightly less (29% more than 5 Field) with directly correlates to the treatment time and scatter radiation absorbed by the patient. Conclusion: Our study shows that no significance difference between five, seven and nine fields IMRT treatment plans. The sparing of OAR's is better with lesser number of monitor units.

Keywords: IMRT, Multiple fields, Comparison

15.9 MEASUREMENT OF ENTRANCE SURFACE DOSES (ESD) FOR THE COMMON DIAGNOSTIC X-RAY PROCEDURES.

Maryam Siddiqui, Syed Mansoor Naqvi
Department of Clinical Imaging, Aga Khan University

Diagnostics radiological procedures are considered as the largest contributors for radiation exposure to

human beings. Radiation protection is an essential component of radiation based facilities. Personnel radiation monitoring is a common and well established practice not only at Aga Khan University but in every radiology service. Radiation dose assessment for patients is under development, in this study we estimated the radiation doses which may be received by patients during common radiographic procedures at the department of Radiology, Aga Khan University, Karachi, Pakistan. Objective: The aim of this study is measurement of Entrance Surface Doses (ESD) for the common diagnostic x-ray procedures.

Material and Method: Entrance Surface dose (ESD) were estimated for adults patients undergoing common x-ray examinations. The study was performed at five x-ray machines. Patient equivalent acrylic phantom was used. Effective dose (ED) was measured using the dosimeter Cobia Flex (RTI) and Optically Stimulated Luminescence (OSL) at the exposure factors (kV, mAs) used for the respective diagnostic procedures. These measurements were compared with the dose guidance level set by Pakistan Nuclear Regulatory Authority (PNRA) in the regulation PAK-904 Annex V. Results: ESD were found well below the regulatory guidance levels.

Conclusion: On the basis of the results obtained in this study, we conclude that diagnostic radiological procedures performed at Aga Khan University results in safer radiation doses without compromise on image quality, this also shows that the radiation injury risk associated with the diagnostic exposures is very low.

Keywords: Entrance Surface Dose, Radiation exposure, Radiation dose

15.10 UTILITY OF LUMINEX BASED PANEL REACTIVE ANTIBODY ASSAYS (PRA) IN RENAL TRANSPLANT

*Maheen Hassan, Mohammad Atif, Najia Ghanchi, Asghar Nasir, Zahra Hasan
Department of Pathology and Laboratory Medicine,
Aga Khan University*

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. Panel Reactive Antibody (PRA) is an immunological laboratory test routinely performed on the blood of people awaiting organ

transplantation. The PRA score is expressed as a percentage between 0% and 99%. The presence of panel reactive antibodies in recipients has been correlated with allograft reactions. To determine the presence of PRA, the specificity of HLA antibodies in the recipient are determined and these are then correlated with the HLA type of the donor.

Objective: To detect HLA Class I and Class II panel reactive antibodies (PRA) in renal transplant recipient using Luminex platform. Methods: Luminex platform are the most sensitive diagnostic method for HLA antibody detection. It is a specialized flow cytometric assay platform that utilizes up to 100 unique beads that are distinguishable by a unique fluorescent dyes.

Results: Through testing recipient sera using the Luminex based assay, presence of antibodies reactive against both HLA Class I and Class II molecules are determined. HLA epitope specificity of the antibodies is compared with the HLA typing information of the donor to determine PRA in the recipient.

Conclusions: Monitoring of PRA through Luminex based assays are a sensitive method for monitoring changes in recipient PRA pre- and post-transplantation. This can allow appropriate patient management such as, plasmapheresis and intravenous immunoglobulin treatment to reduce the chances of graft rejection.

Keywords: HLA, PRA, Luminex

15.11 EVALUATION OF HIGH RISK HPV DNA BY DNA HYBRID CAPTURE 2 METHOD

*Nazneen Islam, Zoya Rani, Kiran Iqbal, Najia Ghanchi, Maheen Hassan, Aliya Aziz, Zahra Hasan
Department of Pathology and Laboratory Medicine,
Aga Khan University*

Introduction: Persistent infection with high-risk human papillomaviruses (HPV) is determined as a risk factor for developing high-grade cervical cancer. HPV are composed of an icosahedral viral particle (virion) containing an 8000 base pair circular DNA molecule. Following infection of epithelial cells, the viral DNA becomes established throughout the entire thickness of the epithelium. Thus, viral DNA can be found either in virions or as episomal or integrated HPV sequences, depending upon the type and grade of lesion.

Objective: Evaluation of High Risk HPV DNA by DNA Hybrid Capture 2 method on cervical specimens. *Methods:* Cervical swab received in the laboratory, AKUH, HPV Genotype 16 reference control Acro Metrix ; HPV Negative reference control Acro Metrix

and HPV CAP survey material were tested to check assay accuracy /diagnostic sensitivity and reproducibility using Digene HPV KIT. Digene HPV method using Hybrid Capture II technology is a nucleic acid hybridization micro plate assay with signal amplification that utilizes chemiluminescent detection. The intensity of the light emitted by subtract denotes the presence or absence of target DNA in the specimen.

Results: Assay accuracy/diagnostic sensitivity was performed using 20 clinically co-related specimens, 2 CAP survey materials, 01 HPV AcroMetrix Positive Genotype 16 reference control and 01 HPV AcroMetrix Negative reference control. Assay was found 99.9% accurate. Reproducibility evaluations were conducted to characterize the ability of assay to obtain a similar diagnostic result on 5 different days set of 5 specimens of known positive/negative HPV status in triplicates. The reproducibility of assay was verified 100%

Conclusions: HPV DNA by DNA Hybrid Capture 2 method was found reliable assay for High Risk HPV DNA detection.

Keywords: HPV, DNA, Hybrid

15.12

CONFIRMATION OF SAFE NASOGASTRIC TUBE PLACEMENT – THE RADIOLOGY DEPARTMENT'S DUTIES.

Rozina Abbas, Dr.Raza Sayani

Department of Clinical Imaging, Aga Khan University

Abstract: The ability to safely assess nasogastric (NG) tube placement is a key skill that medical staff and as well as Para-medical staff are required to learn. It is essential to apply a systematic approach for assessment. Incorrect NG tube placement can result in life threatening complications and therefore you should take great care when carrying out assessment. This guide aims to provide a systematic approach to confirming safe NG tube placement in different exams, however it should NOT be used as a guide to confirming NG tube placement on actual patients, instead it should follow according to hospital guidelines. The radiology department's adherence to the radiological specific requirements of the NPSA/2011/PSA002 patient safety alert regarding safe nasogastric feeding tube placement. The NPSA issued a patient safety alert (NPSA/2011/PSA002) and new guidelines regarding the confirmation of safe nasogastric feeding tube placement. In October 2017 we observed 91 cases of nasogastric tubes on chest

radiograph and saw their positioning. We will present results as observed.

Keywords: Nasogastric tube, Insertion, Positioning

15.13

EFFECT OF NIFEDIPINE ON 99MTC-DTPA RENOGAM CURVE IN HYPERTENSIVE AND NORMOTENSIVE SUBJECTS

Jamila Baig, Raza Sayani

Department of Clinical Imaging, Aga Khan University

Objective: To determine the effect of calcium channel blocker on Tc99m DTPA (Renal Scan) Renogram curve in hypertensive patients.

Study Design: Observational Study Place and Duration : Aga Khan University Hospital, Stadium Road Karachi, October 2017

Methodology: This study included both males (n=24) and females (n=19) undergoing diagnostic at Aga Khan hospital, stadium road, October 2017. The patients with history of HTN and normotensive. Normal health volunteer and HTN patient with normal renal function, as assessed on the basis of clinical history.

Result : It improves all the quantitative renal uptake and excretory functional parameters in hypertensive subjects.

Conclusion : Small amount of nifedipine improves quantitative renal uptake functional parameters in HTN patients.

Keywords: NIFEDIPINE, Tc99m DTPA, Renal Scan

15.14

ARE THE PLAIN ABDOMINAL RADIOGRAPHS FROM ER WITH CORRECT INDICATIONS?

Uzma Anis A. Siddiqui, Raza sayani, imran khalid, Hiba Hashmi

Department of Clinical Imaging, Aga Khan University

Objective To ensure that requests for plain abdominal radiographs from the Emergency department are performed appropriately as advised by Royal College of Radiologists (RCR) iRefer guidelines.

Methodology: This study was done in the department of radiology Aga Khan University Hospital, Karachi. Study was done on 89 individuals depending on our study requirement. Abdominal plain radiograph requests were analyzed by using PACS application for assessment of clinical indications which were documented by clinician. Referred clinical indications were then reassessed by RCR iRefer guidelines.

Analyses were made by using excel. Percentages were calculated and conclusions were made depending on RCR guidelines. Results: Out of 89 patients 63 had correct indications. In 5 no indications were provided. In 21 patients abdominal pain was mentioned as complain which is vague and needs more definite description.

Conclusion: Almost 70 percent had correct indications mentioned however rest need more clear explanation and justification.

Keywords: abdominal, Radiograph, clinical indications

15.15 NEW INITIATIVE IN USAGE OF PREFILLED HEPARIN SYRINGES

*Afsheen Amin, Sumaira Sachwani, Muniza Noordin,
Nadia Ayoub, Dr Arifa Aziz
Department of Oncology, Aga Khan University*

Background and objective: Majority of oncology patients including pediatric and adult have central lines for their treatment and to sustain the efficacy of central lines it is imperative to lock it with heparin with minimal doses, for which heparin vial was issued by pharmacy and dilution were made by nursing staff according to the population of patient and central line devices. To identify the practices of making heparin in both adult and pediatric, a clinical audit was performed in both adult and pediatric units.

Results: After completion of audit, it was recognized that in an inpatient pediatric area, nursing staff get prefilled heparin syringes from pharmacy whereas daycare staffs made self-dilution of heparin by getting vials. Beside, during an audit it was also identified that dilution which were made was also different in both the units for central line devices in terms of age and devices.

Conclusion: Different articles were reviewed by the team and it was found that there are no difference in the dosing in terms of age and central line devices. Hence, an initiative was taken by oncology team and pharmacy to start consuming prefilled syringes of heparin which will be issued by pharmacy so that equality of dose and practices can be made in heparin lock. Besides, it is also very helpful for the patients because pre filled syringes are very cost effective for them in comparison to the vial.

Keywords: Pre filled, Heparin, Syringes

15.17 GENOTYPING FOR KILLER-CELL IMMUNOGLOBULIN-LIKE RECEPTORS

*Fareena Bilwani, Zaid Muslim, Maya Zahid Khan,
Tahira Ghulam Mohammad
Department: Biological and Biomedical Sciences and
Medical College, Aga Khan University*

Killer-cell immunoglobulin-like receptors (KIRs) are present on natural killer (NK) cells. This group of receptors plays an important role in tailoring the cytotoxic response of NK cells. Objective of our study was to optimize genotyping for inhibitory- and non-inhibitory- KIRs on genomic DNA obtained from peripheral blood mononuclear cells (PB MNCs) of healthy adults. PB MNCs were collected using Ficoll density gradient centrifugation. Genomic DNA was extracted from PB MNCs using salting-out method. Polymerase chain reaction with sequence-specific primers (PCR-SSP) was performed on genomic DNA for detection of inhibitory KIRs (KIR2DL1, KIR2DL2, KIR2DL3, KIR2DL4, KIR2DL5, KIR3DL1, KIR3DL2) and non-inhibitory KIRs (KIR2DS1, KIR2DS2, KIR2DS3, KIR2DS4, KIR2DS5 and KIR3DS1). In addition, PCR-SSP was performed for KIR gene of unknown function (KIR3DL3) and two KIR pseudo genes (KIR2DP1 and KIR3DP1). We were able to optimize a system that can detect the presence of all the above mentioned KIR genes using PCR-SSP. In conclusion, this system will allow us to identify the KIR genotype profile of our population.

Keywords: Killer-cell immunoglobulin-like receptors, Polymerase chain reaction, Sequence-specific primers

15.18 DETECTION OF SPINAL MUSCULAR ATROPHY (SMA) USING MULTIPLEX LIGATION- DEPENDENT PROBE AMPLIFICATION (MLPA)

*Anif Ather, Kahkashan Imam, Azra Samreen, Asghar
Nasir, Zeeshan Ansar, Tairq Moatter, Zahra Hasan
Department of Pathology and Laboratory Medicine,
Aga Khan University*

Introduction: Spinal Muscular Atrophy (SMA) is a neuromuscular autosomal recessive disorder. More than 95% patients with this muscular dysfunction have a homozygous deletion of survival motor neuron 1 (SMN1) gene. (SMA) is regarded as degeneration of alpha motor neurons in the spinal cord, which results in progressive proximal muscle weakness and

paralysis. Two survival motor neuron (SMN) genes are present on 5q13: the SMN1 gene, which is the SMA-determining gene, and the SMN2 gene, which is the modifying gene. The homozygous absence of the (SMN1) gene exon 7 and (SMN2) gene exon 8 is regarded as a diagnostic test for SMA. SMA patients display delayed milestones, respiratory distress, shortness of breath and muscle weakness. Objective: To evaluate the efficacy of Multiplex Ligation-dependent Probe Amplification (MLPA) in detection of exon deletions and duplications of the SMN1 and SMN2 gene.

Methods: 20 cases of clinically diagnosed SMA cases and previously confirmed by PCR method were identified and run by MLPA method on ABI3500 Genetic Analyzer. MLPA SMA reaction uses 37 probes to targets exon 7 and exon 8 of both SMN1 and SMN2 gene. Raw data from AB13500 analyzer was collated on Coffalyser software for determination of deletion or duplication of SMN1 and SMN2 gene.

Results: 7 cases out of 20 were correctly identified as negative on MLPA method. 13 positive cases with homozygous deletion of exon 7 and 8 of SMN1 gene were accurately identified similar to the PCR method.

Conclusion: SMA diagnostic test by MLPA technique is an efficient and reliable method for accurately identifying mutations in exon 7 and exon 8 of SMN1 and SMN2 genes and providing clinically relevant copy number of both SMN1 and SMN2 genes. All cases reported by PCR method were accurately identified by the MLPA method.

Keywords: MLPA, SMA, SMN1

Trauma and Violence

16.1

CERVICAL SPINE IMMOBILIZATION AND CLEARANCE FOLLOWING BLUNT TRAUMA: PRACTICES AT A TERTIARY CARE TRAUMA CENTER IN A DEVELOPING COUNTRY

Karim Rizwan Nathani, Muhammad Waqas, Hasnain Zafar, Muhammad Baqir, Nadeemullah Khan, Rashid Jooma

Departments of Surgery & Emergency Medicine and Medical College, Aga Khan University

Practice of cervical spine immobilization following blunt trauma is based on the belief that an occult unstable cervical spine can deteriorate the pre-existing spinal injury. Recently, literature has been reporting an overzealous use of cervical collar and evaluation in post traumatic patients, and therefore recommends specific clinical guidelines for suspicion of cervical spine injury. It is a prospective cross-sectional study conducted at The Aga Khan University Hospital to assess the practice at our emergency department during the study period 2nd December 2015 to 18th February 2016. A proforma was designed to record factors behind selection of patients for cervical spine immobilization and their further evaluations. A total of 92 patients were prescribed cervical collar during the study period. Neck Pain was present in 23 out of 67 applicable patients. Normal Neck movement was observed in 60 out of 76 applicable patients. Cervical tenderness and focal neurological deficits were absent in 51 and 70 patients respectively. According to the standard Canadian C Spine Rule, only 63 patients, out of 92 patients were at risk for cervical instability and should have received cervical immobilization and evaluation. It was observed that 58 removed their collars within 3 days, including 42 who removed it in a day. Such practice does not only harm the patient in terms of discomfort and collar complications, but also adds to his overall cost. Pakistan, being a developing country, has limited resources which need to utilize effectively. If the Canadian C Spine rule was followed appropriately, up to \$3,500 could have been saved annually. Universal cervical spine radiography or immobilization is not encouraged and specific guidelines, like Canadian C Spine Rule, should be followed to avoid over prescription.

Keywords: Cervical Spine, Cervical Collar, Trauma

16.2

HEAD INJURY PEDIATRIC EMERGENCY CARE APPLIED RESEARCH NETWORK (PECARN) RULE CORRELATES WITH PATTERN/PRACTISES OF CT SCAN HEAD DONE IN PEDIATRIC PATIENTS COMING WITH HEAD TRAUMA IN ED- A RETROSPECTIVE ANALYSIS

Dr Naureen Naseer, Dr Nazir Najeeb Kapadia
Department of Emergency Medicine, Aga Khan University

Title: Head Injury Pediatric Emergency Care Applied Research Network (PECARN) Rule Correlates with Pattern/Practices of CT Scan head done In Pediatric Patients Coming With Head Trauma in ED- A Retrospective Analysis

Background: Children with minor head trauma are frequent presentations to emergency departments (EDs).1 Identifying those with traumatic brain injuries (TBIs) can be difficult.1 ED clinicians must decide who requires computed tomography (CT) scanning to evaluate for traumatic brain injury (TBI).2,3 The use of Cthead in children has doubled over the last two decades, from 10.6 CTs per 1000 children in 1996 to 21.5 CTs per 1000 children in 2010.4 Ionizing radiation is particularly worrisome in children; it is estimated that 1 in 1000 to 1 in 5000 cranial CT scans result in a later lethal cancer, with highest risks for younger children. The Pediatric Emergency Care Applied Research Network (PECARN) derived and validated two age-based prediction rules to identify children at very low risk of clinically-important traumatic brain injuries (ciTBIs) who do not typically require CT scans. It is estimated that pediatric CT use for minor head trauma would decrease by 20–25% while rarely missing a child with ciTBI.5 *Objectives:* To analyze whether CT head is being appropriately utilized by health care professionals while identifying traumatic brain injury in pediatric patients presenting with trauma

Methods Study Design: Retrospective Cross-sectional Procedure: File and chart review Setting: AgaKhan Hospital Emergency Department Sample size: 197 (WHO sample size calculator; at confidence level of 95% & confidence interval of 5%) Inclusion: All pediatric head trauma cases on whom CT scan was done RESULTS (ongoing) The anticipated result is that we burdened one out of four pediatric patients with extra radiation. CONCLUSION PECARN rule will guide us to limit ordering unnecessary CT scans without missing traumatic brain injury.

Keywords: Traumatic Brain Injury, Pediatric trauma, PECARN rule.

16.3 THE OUTCOME AND PATTERNS OF TRAUMATIC BRAIN INJURY IN THE PAEDIATRIC POPULATION OF A DEVELOPING COUNTRY SECONDARY TO TV TROLLEY TIP- OVER.

*Muhammad Waqas, Gohar Javed, Karim Rizwan
Nathani, Badar Ujjan, Muhammad Zubair Tahir, Syed
A Quadri
Medical College and Department of Surgery, Aga
Khan University*

Background: Television (TV) trolley tip-over incidences are common and can cause significant morbidity and mortality in children. This study was aimed at analyzing the pattern and outcomes of head injuries resulting from TV trolley tip-over.
Method: We conducted a medical chart review of children with TV trolley tip-over head injuries from January 2009 to April 2016. We collected data on demographics, the mechanism of injury, clinical and radiological features of the injury, and outcomes. Outcomes were measured by means of the Glasgow Outcome Scale (GOS) at 6 months (except in 1 case). A descriptive analysis was carried out using SPSS v19.
Result: Twenty-two children were included in the study (median age 23.5 months). Sixteen children were male. Most of the children (n = 16) were aged 12-35 months. The median Glasgow Coma Scale score on admission was 15. The median Rotterdam Score for the patients was 2.0. Common symptoms upon admission were vomiting, irritability, scalp laceration, and bruises. Median length of hospital stay was 3 days. Skull bone fractures were present in 12 children. Other CT findings included contusions, extradural and subdural haematomas, intraventricular haemorrhage, and pneumocranium. Surgical intervention was required in 4 cases. Although most of the patients made a good recovery (GOS = 5), 1 patient developed a mild disability and another died in hospital.
Conclusion: TV trolley tip-over is most common in toddlers and can lead to significant head injury and mortality. This can be avoided by parental supervision and adjustments in the household.

Keywords: Paediatric Trauma, Television, Home Injury

16.4 IDENTIFICATION OF HOSPITAL BASED FACTORS ASSOCIATED WITH 30-DAYS CLINICAL OUTCOMES IN PEDIATRIC PATIENTS WITH HEAD INJURY

*Dr Fareed Ahmed, Dr.Asad Mian, Dr. Uzma Rahim
Khan, Shafaqat Rozi, Dr Junaid Razzak, Dr.Muslima
Ejaz, , , ,
Departments of Emergency Medicine and Community
of Health Sciences, Aga Khan University*

Background: Children with traumatic brain injury (TBI) are at risk of death and permanent neurological disability. Early decisions for the need of brain imaging, immediate resuscitation, and prompt treatment are pivotal for good outcomes in patient with head injury.

Objective: To compare 30-day clinical outcome in pediatric patient with head injury among those having CT scan done early as compare to those who have delay in CT scan.

Methodology: It was a prospective cohort study in which pediatric patients with head injury presented to emergency department were included. Total of three major hospitals of Karachi were included (AKU/JPMC/ASH). Patients were divided into exposed and unexposed groups on the basis of CT scan timings. Follow up was done till 30 days to assess their outcome. Cox proportional hazard model of survival analysis was used to assess the significance of variables with the outcome.

Results: A total of 157 patients were included, out of which 94 (59.87%) were exposed having CT scan done after 2-hours while 63 (40.1%) were unexposed having CT scan done within 2-hours. The mean age of child having event in both groups was 7.3years (CI, 2.43 12.22). The mean Glasgow coma scale (GCS) in both groups having event was 6.8 (CI 5.8, 7.7). After applying Cox Proportional Hazard model of survival analysis, final model shows two significant variables ,time from ER to CT scan (HR,11.43, CI, 1.51 86.26), and GCS (HR,0.59, CI, 0.51 0.69) with one interaction between main exposure and maintaining of circulation (HR, 0.04, CI, 0.003, 0.554).

Conclusion: Though the sample was small, our study highlights the possible importance of early brain imaging. Apart from patient's arrival GCS that can predict the outcome, multiple other in-hospital factors were also identified through this study which plays important role in the outcome of patient that can be improved.

Keywords: Pediatric population, head injury, Hospital based factors

Keywords: Mode of transfer, 30 day mortality, Direct transfer , Interfacility transfer , Road Traffic Crash., 30 day mortality, Road traffic crash

16.5

THE DIFFERENCE IN IMPACT OF DIRECT VERSUS INTERFACILITY TRANSFERS IN PREDICTING 30 DAY MORTALITY OF ADULTY ROAD TRAFFIC CRASH VICTIMS PRESENTING TO THE ED SETTINGS OF 3 TERTIARY CARE HOSPITALS IN KARACHI

Maleeha Naseem, Masood Kadir, Junaid Razzak, Rashid Jooma
Departments of Emergency Medicine, Community Health Sciences and Surgery Aga Khan University

Background: About 1.25 million people die globally every year as a result of Road Traffic Crashes(RTC's), and it is found to be the 9th leading cause of mortality amongst all age groups which is further predicted to become at the 7th leading cause of mortality by 2030. Around 90% of the world's fatalities due to RTC's occur in LMIC's and there exists gross disparity amongst LMIC versus HMIC's to the level of care received immediately post-crash. Pakistan is the 5th leading contributor Of Road traffic Crash Related deaths ,worldwide and the rate of RTC's in Pakistan is about 14.2 per100,000 population(2013).Transfer of RTC victims to the right hospital at right time in golden hour of trauma is vital in preventing Mortality and lifelong disability.

Objective: To Determine the difference in Impact of Direct Versus Interfacility Transfers on 30 day Mortality of Adult Road Traffic Crash Victims (>18 years of age), Presenting to ED settings of three Tertiary Care Hospitals In Karachi.

Methods: We performed a Prospective Cohort study at three tertiary care hospitals in Karachi, from April-August, 2016. All adult patients presenting with Serious Injuries (AIS \geq 3), were included in the study Data was collected through structured questionnaire 24/7 in the Emergencies of study sites. The primary exposure was Interfacility transfer and primary outcome of the study was 30 day Mortality on Follow up. **Results:** Out of 201 participants 14.2% had mortality in Exposed group and 15.4% had mortality in Unexposed group.(a HR:1.01,CI:0.41-2.89). The Mean survival time amongst two groups turned out to be insignificant as well.

Conclusion: There existed no difference in 30 day mortality of Road traffic Crash victims with respect to Mode of transfer and the results can be implied in planning post-crash intervention during our trauma care system development.

Women and Child Health

17.3 UTILIZING PLAY THERAPY IN HOSPITALS FOR BETTER HEALTH OUTCOME IN CHILDREN

Sarmad Muhammad Soomar
Nursing Education Services, Aga Khan University

Introduction: Admission to the hospital can become a toxic stress for children, and this can hinder their treatment and recovery. Children are fearful of bright lights, noises and influx of strangers at hospitals. Their age and innocence creates the thought process that people in the hospital are not good and are out to harm them. That then weakens the medical staff-paediatric patient therapeutic alliance and interrupts treatment.

Objective: To identify better tools to reduce stress amongst children in the hospital and gain cooperation of children for better health outcomes.

Methods: A literature search was done with the key word "Play therapy" to identify current literature supporting the view of using Toys to meet the mentioned objective. Author's own clinical experiences has been reviewed and mentioned to strengthen the basis of idea.

Results: Current articles present in various authentic data bases provided identification of various play therapy techniques in improving pain scores of children, gaining cooperation in procedures, better understandings of interventions, diversion, growth and development. Also, provided sample play activities and case studies that highlighted the aspects of play like age related, culturally appropriate, related to children's preferences and intellectually sound play. The review provided with various forms of play and their social character exhibited by children.

Conclusion: Play therapy is a significant and outcome generating technique. That can be easily implemented in resource-limited settings such as ours. There is a need for play therapy kits in pediatric wards, emergency rooms and clinics. There should be discussions on simple methodologies for effective utilization of play therapy, including training sessions for pediatric staff and ways of preparing relevant toys for children that they care for. So that children could experience a better hospital stay with less toxic stress and better health and this child-centric care in the hospital can be epitomized also by play therapy.

Keywords: playtherapy, hospitals, children

17.5 PERCEPTIONS OF CHILDBEARING WOMEN REGARDING FACILITY-BASED DELIVERIES IN LOW AND MIDDLE-INCOME COUNTRIES, A SYSTEMIC REVIEW

Sanam Zulfiqar Mcnojia
Department of Community Health Sciences, Aga Khan University

Background: Among the four pillars of safe motherhood, clean and safe deliveries are the most important component in preventing the risk of maternal and fetal complications and deaths during childbirth. Hence, it is important that childbirth take place under the supervision of skilled health professionals. Despite the provision of numerous health care facilities in rural areas for childbirth in Pakistan, the urban-rural difference in deliveries at health facility is highest in Sindh with 78% and 47% deliveries occurring in facilities, respectively. Around 53% of deliveries in rural areas take place at home, resulting in high number of stillbirths and maternal complications (PDHS, 2012-13). A systemic review was conducted to assess the perceptions of childbearing woman's regarding facility-based deliveries and how these perception influencing maternal decision making to seek facility-based care during perinatal period. *Methods:* We conducted systemic review of published literature from two electronic databases with the search term pertinent to research question. Key words used were, "Childbearing women, Facility-based deliveries, low and middle-income countries". On identification, total 857 were identified from Pub-med and science direct. On screening title were reviewed and 673 were excluded. Only those articles were included which are of last 10 years, available in English with full text, and fulfilling the eligibility criteria. On reviewing abstract 37 were removed and while applying eligibility criteria 82 excluded and only 15 were included in the systemic review.

Results: 15 articles were eligible for inclusion in the system and were analyzed. Majority of the studies were from the rural areas of LMICs were the maternal services are underutilized due to which high prevalence of home-based deliveries. Our analyses have shown that long distance, financial constraints and socio-cultural influence has found to be barriers in seeking facility-based deliveries. Whereas high educated mothers, perceived quality of care at facilities and perceived complications are proven to be facilitating factors to opt for facility-based deliveries.

Conclusion: Our review suggests that there are numerous socio-economic factors molds the perceptions of childbearing woman to facility-based delivery. These perceptions are taken into an account while intervene strategies to increase the utilization of facility-based deliveries. Furthermore, while formulation programmatic policies maternal accessibility, affordability and culturally acceptable MNCH services must be considered.

Keywords: Childbearing women, Facility-based deliveries, low and middle-income countries

17.6 SEXUAL ABUSE IN CHILDREN WITH INTELLECTUAL DISABILITY; A SYSTEMATIC LITERATURE REVIEW

Mashal Hirani
Nursing Services, Aga Khan University

Children with intellectual disabilities are approximately four times at greater risk for sexual abuse than non-disabled children. Studies suggest the most reported forms of abuse in these children include physical, emotional and sexual abuses. This paper aims to highlight Prevalence, major factors and propose recommendations for reducing sexual abuse in children with intellectual disability (ID). A systemic review of recent 17 articles (2009-2017) from scientific databases such as PUBMED, Science direct, CINAHL, Medline and Sage was conducted. Out of 25 articles, 17 articles were selected that met the inclusion criteria. The selected articles proposed factors including; Child related factors (nature and extent of disability, dependence on caregivers, lack of sexual health education), Caregiver related factors (fear and embarrassment regarding sexual health education, negligence of sexual health of an ID child, insufficient communication techniques for discussing sexual health with an intellectually disabled child), Societal related factors (stigma regarding intellectually disabled children), Judiciary related factors (weak policies, lack of child protection institutes). However, based on these factors, prevention and interventions were proposed at three levels; Primary, secondary and tertiary. The interventions at each level were further elaborated targeting the crucial role played by caregivers (formal/informal), institutions and government in reducing the incidence of child sexual abuse in ID population. In conclusion, Child sexual abuse in ID population is a distressing and hidden issue. Therefore, a prompt action is required to safeguard this vulnerable population.

Keywords: Sexual abuse, Intellectually disabled, Prevention

17.9 ESTABLISHMENT OF REFERENCE INTERVALS OF THYROID STIMULATING HORMONE (TSH) IN NEONATES- EXPERIENCE FROM A TERTIARY CARE CENTER IN PAKISTAN

Sibtain Ahmed, Lena Jafri, Hafsa Majid, Khadijah Humayun, Salman Kirmani, Imran Siddiqui, Farooq Ghani, Aysha Habib Khan
Departments of Pathology & Laboratory Medicine and Paediatrics & Child Health, Aga Khan University

Background: Reference intervals (RI) of TSH are method and population dependent as well as age specific. The aim of this study was to determine the RI of TSH in neonates based on laboratory data.

Material and Methods: A cross-sectional analysis of results of serum TSH of neonates (≤ 1 month of age) acquired from October 2015 to March 2016. An analysis of TSH serum samples was performed on an automated immunoassay system (ADVIA® Centaur™, Siemens Diagnostics, NY, US). The IFCC/CLSI recommended method was used for the determination of upper and lower end points covering 95% of the reference values of each analyte with respective 90% Confidence intervals (CI). Subjects were sub-grouped according to age, ≤ 5 days of life and 6 days to 1 month. Standard statistical methods were used for data analysis using the MedCalc 16.2.1 software package (MedCalc, Mariakerke, Belgium). Furthermore, upper cutoff of nTSH was verified on subsequent nTSH samples received from October to December 2016. Results: Total 6400 nTSH tests were performed, amongst them 88% (n=5610) were aged ≤ 5 days of life. The RI for ≤ 5 day's age group was calculated to be 0.62 uIU/mL (CI: 0.58 – 0.67) to 14.97 uIU/mL (CI: 14.5-15.63). And for the 6 days to 1 month age group was 0.462 uIU/mL (CI: 0.35– 0.62) to 9.102 uIU/mL (CI: 8.5-10.6) Furthermore, upper cutoff of nTSH was verified on subsequent nTSH samples received from October to December 2016 (n=4082). In the age group 0-5 days 51 samples and in the 6 days to 1 month age group 12 samples had results higher than the upper cutoff. Additionally, FT4 analysis revealed normal levels for the samples having nTSH values within normal range.

Conclusion: We recommend reporting neonatal TSH values in neonates using age and population specific RI.

Keywords: Thyroid stimulating hormone, neonates, Reference interval

17.11

COMPLICATIONS OF EPISIOTOMY

Neelofur Babar, Naureen Anjum, Zahra Hoodbhoy, Rabia Khoso
Department of Obstetrics and Gynaecology, Aga Khan University

Background: Episiotomy is the most common obstetrical procedure done to facilitate the delivery. It is done to reduce the incidence of vaginal tears and has better healing power. It is rarely associated with life threatening complications but vaginal hematoma, pain and wound infection are known complications.

Objective: To evaluate the incidence of complications of episiotomy and its associated risk factors. Study Design: Prospective observational study.

Methodology: This study was conducted at Aga Khan Hospital for women, Karimabad. Approval was taken from Ethical Review Committee of Aga Khan University. Study time period was six months. A sample size of 235 patients was taken. Patients delivered by complete SVD and with first and second degree tears were excluded. Data was collected on pre structured performa. The complications of episiotomy were recorded. These were divided in three groups depending on the time of occurrence after delivery. Immediate complications included Perineal tears, PPH, Extended Episiotomy. Early complications included vaginal hematoma, Perineal pain, urinary retention, dyschezia, repair of tear and episiotomy under GA while late complications included wound Infection, wound gapping, resuturing and urinary tract infections. Data collected was analyzed in SPSS version 19. Result: Immediate complications were reported in 3% of the participants. These complications included perineal tears, postpartum hemorrhage and extended episiotomy. Early complications such as perineal pain, inability to pass urine or stool and vaginal hematoma were reported in 1% of the participants. Late complications including wound infection, gaping wound and resuturing of wound were reported in less than 10% of the participants. On multivariate analysis, it was seen that age was significantly associated with complications.

Conclusion: Episiotomy is not associated with increased incidence of complications and is a safe obstetrical surgical procedure.

Abstract Background: Episiotomy is the most common obstetrical procedure done to facilitate the delivery. It is done to reduce the incidence of vaginal tears and has

better healing power. It is rarely associated with life threatening complications but vaginal hematoma, pain and wound infection are known complications.

Objective: To evaluate the incidence of complications of episiotomy and its associated risk factors. Study Design: Prospective observational study.

Methodology: This study was conducted at Aga Khan Hospital for women, Karimabad. Approval was taken from Ethical Review Committee of Aga Khan University. Study time period was six months. A sample size of 235 patients was taken. Patients delivered by complete SVD and with first and second degree tears were excluded. Data was collected on pre structured performa. The complications of episiotomy were recorded. These were divided in three groups depending on the time of occurrence after delivery. Immediate complications included Perineal tears, PPH, Extended Episiotomy. Early complications included vaginal hematoma, Perineal pain, urinary retention, dyschezia, repair of tear and episiotomy under GA while late complications included wound Infection, wound gapping, resuturing and urinary tract infections. Data collected was analyzed in SPSS version 19.

Result: Immediate complications were reported in 3% of the participants. These complications included perineal tears, postpartum hemorrhage and extended episiotomy. Early complications such as perineal pain, inability to pass urine or stool and vaginal hematoma were reported in 1% of the participants. Late complications including wound infection, gaping wound and resuturing of wound were reported in less than 10% of the participants. On multivariate analysis, it was seen that age was significantly associated with complications.

Conclusion: Episiotomy is not associated with increased incidence of complications and is a safe obstetrical surgical procedure.

Keywords: Episiotomy, Vaginal hematoma, perineal tears

17.12

THE RELATIONSHIP BETWEEN CERVICAL DILATATION AT WHICH WOMEN PRESENT IN LABOR AND SUBSEQUENT RATE OF CAESARIAN SECTION

Naureen Anjum, Zaib Memon, Sana Sheikh, Urooj Naz
Department Obstetrics and Gynaecology, Aga Khan University

Background Caesarean delivery is one of the most common surgical procedures for women in the child-bearing years. Within the past three decades, the

caesarean section rate has risen in most countries. This increase can be explained by advancement in obstetrical technology such as fetal monitoring, changes in the characteristics of the pregnant population. These may be legitimate indications, but a large number of caesarean deliveries are performed for less sound reasons. In many places a previous caesarean scar is the chief reason for a subsequent abdominal delivery. The management of the first time mother with a singleton cephalic pregnancy at term seems to account for much of the increase in rates of caesarean section. The major complications of caesarean delivery contribute to the higher maternal morbidity and mortality are hemorrhage, anesthetic complications, postoperative infection, thromboembolism, sub fertility, placenta previa., scar rupture and repeat caesarean section. It is also associated with increased incidence of postpartum hemorrhage, febrile morbidity, anemia, wound infection and disruption. It has been shown in the literature that the rate of caesarean section is high in early presenters, that is if they attend at less than 4cm cervical dilatation and it is less in late presenters that is if they present at more than 4cm cervical dilatation.

Objective To compare the rate of cesarean section between women presenting with cervical dilatation less than 4 cm to women presenting with cervical dilatation at 4 and more than 4 cm

Method and Methodology It is a retrospective analytical study. Patient presenting in spontaneous labour with singleton pregnancy and cephalic presentation from 37-42 weeks of pregnancy are included in the study while Patients with multiple pregnancies, PROM Previous caesarean section, Medical Comorbids (Diabetes, Hypertension, IHD, and Chronic Obstructive Pulmonary Disease) Intra-Uterine Growth Retardation are excluded. Primary outcome measured is rate of caesarean section while secondary outcome is neonatal outcomes and maternal complications Sample size required is 221 women with early phase and 221 with late phase. Data is collected on predesigned performas. Descriptive analysis will be done by estimating means and standard deviations for continuous variables and proportions for categorical variables. Univariate analysis will be done by using chi-square for categorical and student t-test for continuous variables. Multivariable analysis will be done by logistic regression and p-value of < 0.05 will be considered significant. All data will be analyzed using SPSS version 19.

Keywords: caesarean section, bishop score, endometritis

17.16 RISK FACTORS FOR SEPSIS AMONG POSTPARTUM WOMEN ADMITTED TO PUBLIC TERTIARY CARE HOSPITAL KARACHI, PAKISTAN

*Samina Bakhtawar, Dr Sana Sheikh, Dr Rahat Qureshi, Dr Zahra hoodbhoy, Dr Beth Payne
Departments of Community Health Sciences and
Obstetrics & Gynaecology, Aga Khan University*

Objective: To determine risk factors and clinical sign and symptoms for identification of sepsis among postpartum women admitted to public tertiary care hospital, Karachi Pakistan.

Background: The high maternal mortality ratio in low and middle income countries accounts for 99% of global estimated maternal deaths. Sepsis is second highest cause of maternal mortality in Pakistan which contributes to 13.7% of all maternal deaths. Sepsis among postpartum women represents spectrum of severity so, early recognition can reduce burden on maternal deaths. Systematic inflammatory response syndrome (SIRS) is one of the common methods used to identify sepsis. However, it requires laboratory investigation which may not be feasible in resource constrain setting. Therefore, the aim of this study was to develop a model based on risk factors and clinical signs and symptoms that can help in early identification of sepsis among postpartum women.

Methods: A case control study was nested in large existing cohort of 4000 postpartum women. We conducted this study at Jinnah postgraduate medical Centre (JPMC) from January to July 2017 among reproductive age women who delivered or were admitted in hospital during their postpartum period. We recruited 100 cases and 498 controls. Cases were those who have sepsis and controls were without sepsis according to standard criteria of SIRS. Patient were interviewed for obtaining information on socio-demographic status, antenatal care and maternal life styles while information related to pregnancy and labor, comorbid and clinical sign and symptoms were retrieved from large existing cohort. Multivariable logistic regression method was performed and discriminative performance of the model was assessed using area under the curve (AUC) of the receiver operating characteristic (ROC). Data analysis was performed on Stata software version 12. Results: An analysis revealed that SpO2 (aOR 13.0 95% CI 4.80-37.10), blood glucose (aOR 1.01 95% CI 1.00-1.02),), lower abdominal pain (aOR 1.99 95% CI 1.15-3.42), vaginal discharge (aOR 7.77 95% CI 2.97-20.21), diabetes in pregnancy (aOR 6.62 95% CI 1.93-20.23),

1-4 antenatal visits (aOR 0.25 95% CI 0.01-0.62), >4 antenatal visits (aOR 0.82 95% CI 0.38-1.78), place of delivery (aOR 9.29 95% CI 1.72-50.02), number of vaginal examinations (aOR 2.10 95% CI 1.21-3.65) and preterm delivery (aOR 3.15 95% CI 1.58-6.25) were significantly associated with sepsis. AUC was 0.84 (95% C.I 0.80- 0.89) which indicates that risk factors and clinical sign and symptoms based model have adequate ability to discriminate women with and without sepsis.

Conclusion: We developed a model based on risk factors and clinical sign and symptoms for postpartum women. This model demonstrated adequate performance in terms of discrimination among women with and without sepsis and has a potential to be scaled up for community use by frontline health care workers after validation.

Keywords: sepsis, Postpartum, septic shock

17.17

EFFECT OF PHARMACOLOGICAL INTERVENTIONS FOR ATTENUATION OF THE CIRCULATORY RESPONSE TO TRACHEAL INTUBATION IN PREGNANT PATIENTS NEONATAL OUTCOME. A SYSTEMATIC REVIEW

Asiyah Aman, Bushra Saleem, Kashif Munshi, Fauzia Khan

Department of Anaesthesiology, Aga Khan University

Background: The primary aim of this systematic review was to assess the effect of pharmacological interventions used for attenuation of the circulatory response to tracheal intubation in pregnant patients undergoing Caesarian section under general anesthesia on neonatal outcome.

Methods: A systematic search of randomized controlled trials from 1990 to 2015 was conducted on the MEDLINE, CINAHL and CENTRAL databases. The primary outcome measure was Apgar score at one and five minutes and secondary outcomes were umbilical cord blood gases and neurological adaptive capacity scores.

Results: Twenty seven RCTs (1689 patients) were included in qualitative synthesis. Only six studies with narcotics (425 patients) and six studies using non-narcotic analgesics (388 patients) were subjected to meta-analysis. Apgar score at five minute was significantly lower in neonates of opioid treated mothers {mean difference -0.30[95% CI -0.55,-0.04], P value =0.02, a lower umbilical arterial pH and a higher requirement for tactile stimulation in neonates.

No difference was seen in Apgar scores of neonates of mothers administered non-opioid analgesics. No difference was observed in other parameters in narcotic or non-narcotic treated mothers

Conclusion: This review suggests that opioid interventions for attenuation of the circulatory response to tracheal intubation in pregnant patients under general anesthesia affect neonatal Apgar scores at five minutes in neonates. This should be kept in mind when using these drugs in the parturient

Keywords: General anesthesia, tracheal intubation, Caesarian section

17.18

CLINICO-HISTOLOGICAL CORRELATION AND COST EFFECTIVENESS OF ROUTINELY PERFORMED HISTOLOGICAL EXAMINATION OF PREGNANCY TISSUES OBTAINED AT UTERINE EVACUATION PROCEDURE ; 5 YEAR EXPERIENCE AT SECONDARY CARE HOSPITAL OF KARACHI, PAKISTAN

Zaibunnisa Memon, Naureen Anjum, Sana Sheikh
Department Obstetrics and Gynaecology, Aga Khan University

Aim To assess Clinico- histological correlation and cost effectiveness of routinely performed histological examination of pregnancy tissue samples collected at surgical uterine evacuation

Methods: In this retrospective study medical record of patients admitted for incomplete miscarriage, missed miscarriage and anembryonic miscarriage in the first trimester from January 2010 to August 2014 were reviewed. Histopathologic diagnosis of the tissue samples obtained via surgical uterine evacuation in these patients was compared with the pre-evacuation diagnosis.

Results: Specimen of 711 patients was sent after uterine evacuation. Histopathologic examination revealed normal product of conception in 681 patients (95.7%), while partial hydatidiform mole was diagnosed in 14 patients (1.9%). Complete hydatidiform mole was detected in only three cases (0.42%). Decidual tissue without chorionic villi was reported in 13 patients (1.8%). The diagnosis of complete mole was suspected in all 3 cases and in 6 cases of partial mole before procedure.

Conclusions: Findings of study did not show any diagnostic and financial benefit from routine histological examination of tissue removed at termination of pregnancy or emergency uterine

evacuation. We recommend that histopathological examination be performed in cases where the diagnosis is uncertain, fewer tissues obtained during evacuation, when molar pregnancy is suspected or when patients are considered at high risk for trophoblastic disease.

Keywords: Molar pregnancy, Gestational trophoblastic disease, missed miscarriage

17.19 PEER VIOLENCE PERPETRATION AND VICTIMIZATION: PREVALENCE, ASSOCIATED FACTORS AND PATHWAYS AMONG 1752 SIXTH GRADE BOYS AND GIRLS IN SCHOOLS IN PAKISTAN

Rozina Karmaliani, Judith McFarlane, Rozina Somani, Hussain Maqbool Ahmed Khuwaja, Shireen Shehzad Bhamani, Tazeen Saeed Ali, Saleema Gulzar, Yasmeen Somani, Esnat D. Chirwa, Rachel Jewkes
School of Nursing & Midwifery, Aga Khan University, Texas Woman's University and South African Medical Research Council

Background: Child peer violence is a global problem and seriously impacts health and education. There are few research studies available in Pakistan, or South Asia. We describe the prevalence of peer violence, associations, and pathways between socio-economic status, school performance, gender attitudes and violence at home. *Methods:* 1752 children were recruited into a cluster randomized controlled trial conducted on 40 fairly homogeneous public schools (20 for girls and 20 for boys), in Hyderabad, Pakistan. This was ranging from 20-65 children per school. All children were interviewed with questionnaires at baseline.

Results: Few children had no experience of peer violence in the previous 4 weeks (21.7% of girls vs. 7% of boys). Some were victims (28.6%, of girls vs. 17.9% of boys), some only perpetrated (3.3% of girls vs. 2.5%) but mostly they perpetrated and were victims (46.4% of girls vs 72.6% of boys). The girls' multivariable models showed that missing the last school day due to work, witnessing her father fight a man in the last month and having more patriarchal gender attitudes were associated with both experiencing violence and perpetration, while, hunger was associated with perpetration only. For boys, missing two or more days of school in the last month, poorer school performance and more patriarchal attitudes were associated with both victimization and perpetration. Witnessing father fight, was associated with peer violence perpetration for boys. These

findings are additionally confirmed with structural models.

Discussion: Peer violence in Pakistan is rooted in poverty and socialization of children, especially at home. A critical question is whether a school-based intervention can empower children to reduce their violence engagement in the context of poverty and social norms supportive of violence. In the political context of Pakistan, reducing all violence is essential and understanding the potential of schools as a platform for intervention is key.

Keywords: Peer Victimization, Peer Perpetration, School youth violence

17.20 EXPLORING THE ANSWER TO PRE-TERM LABOR WITHIN MICROBIOME

Zehra Jamil, Kumail Ahmed, Fyezah Jehan, Najeeha Iqbal
Departments of Biological & Biomedical Sciences and Paediatrics and Child Health, Aga Khan University

Our current understanding of pre-term birth is limited in terms of factors responsible for the onset of early labour. Human microbiome comprises of trillions of commensal microorganism, residing on and within our bodies that are associated with the vital functions of organ systems. Few studies have highlighted the role of maternal gut microbiome dysbiosis as a major contributing factor of metabolic syndrome that leads to pre-term labour. Furthermore, there is substantial evidence that dysbiosis of microbiome residing in placenta and vagina, thus plays a significant role in early ripening of placenta which leads to pre-term labour. The rationale of dysbiosis is linked with untoward immune responses associated with the changes in normal flora or commensal organism. In this review, we summarized the published studies in the field of microbiome and their association with pre-term birth. In our understanding, placental microbiome has shown a higher association with pre-term birth in comparison to gut and vaginal microbial community. Furthermore, fetal intestinal microbiome present in the meconium is important to evoke an inflammatory response that leads to pre-term birth. Therefore, both maternal and fetal microbiome should be studied in parallel to determine causality of pre-term birth with microbiome.

Keywords: Microbiome, Dysbiosis, Preterm labor

17.21
PREVENTING PEER VIOLENCE AGAINST
CHILDREN: METHODS AND BASELINE DATA
OF A CLUSTER RANDOMIZED CONTROLLED
TRIAL IN PAKISTAN

*Judith McFarlane, Rozina Karmaliani, Hussain
Maqbool Ahmed Khuwaja, Saleema Gulzar, Rozina
Somani, Tazeen Saeed Ali, Yasmeen Somani, Shireen
Shehzad Bhamani, Rene Paulson, Rachel Jewkes
School of Nursing and Midwifery, Aga Khan
University, Texas Woman's University and South
African Medical Research Council*

Background: Violence against and among children is a global public health problem that annually affects 50% of youth worldwide with major impacts on child development, education, and health including increased probability of major causes of morbidity and mortality in adulthood. It is also associated with the experience of and perpetration of later violence against women. The aim of this article is to describe the intervention, study design, methods, and baseline findings of a cluster randomized controlled trial underway in Pakistan to evaluate a school-based play intervention aiming to reduce peer violence and enhance mental health.

Methods: A cluster randomized controlled design is being conducted with boys and girls in grade 6 in 40 schools in Hyderabad, Pakistan, over a period of 2 years. The Multidimensional Peer-Victimization and Peer Perpetration Scales and the Children's Depression Inventory 2 (CDI 2) are being used to measure the primary outcomes while investigator-derived scales are being used to assess domestic violence within the family. Specifics of the intervention, field logistics, ethical, and fidelity management issues employed to test the program's impact on school age youth in a volatile and politically unstable country form this report. Baseline

Results: A total of 1,752 school-age youth were enrolled and interviewed at baseline. Over the preceding 4 weeks, 94% of the boys and 85% of the girls reported 1 or more occurrences of victimization, and 85% of the boys and 66% of the girls reported 1 or more acts of perpetration. Boys reported more depression compared with girls, as well as higher negative mood and self-esteem scores and more interpersonal and emotional problems. Interpretation: Globally, prevalence of youth violence perpetration and victimization is high and associated with poor physical and emotional health. Applying a randomized controlled design to evaluate a peer violence prevention program built on a firm infrastructure and

that is ready for scale-up and sustainability will make an important contribution to identifying evidence-informed interventions that can reduce youth victimization and perpetration.

Keywords: Method, Peer Violence, School Violence

17.22
A DOUBLE BLIND RANDOMIZED CONTROL
TRIAL TO COMPARE THE VARYING DOSES OF
INTRATHECAL FENTANYL ON CLINICAL
EFFICACY AND SIDE EFFECTS IN PARTURIENT
UNDERGOING CAESAREAN SECTION

*Samina Ismail, Muhammad Asghar Ali, Muhammad
Sohaib, Asiyah Aman
Department of Anaesthesiology, Aga Khan University*

Background and Aims: To improve the quality of subarachnoid block, it has become a common practice to add intrathecal lipophilic opioids. This study was designed to find a dose of intrathecal fentanyl which can improve the quality of surgical anaesthesia with minimal side effects in parturient undergoing caesarean sections under spinal anaesthesia with intrathecal bupivacaine 10 milligram.

Methods: In a prospective randomized double blind study, 243 parturient undergoing caesarean sections under spinal anaesthesia were randomly allocated to receive 10µg, 15µg or 25µg of intrathecal fentanyl with 0.5% hyperbaric bupivacaine 10 milligram. Patients were assessed for clinical efficacy by measuring pain score, need for rescue analgesia, conversion to general anaesthesia and complaints of inadequacy of surgical anaesthesia by the surgeon. Side effects assessed were pruritus, nausea, vomiting, dizziness, drop in saturation and respiratory rate. In addition neonatal Apgar score, patients hemodynamic, need for vasopressors, onset and duration of sensory and motor block were also measured.

Results: Patients receiving 25 µg of fentanyl had a significantly higher incidence of pruritus, nausea, and dizziness in addition to a significantly prolonged sensory and motor block ($P < 0.001$). All patients in three groups had adequate surgical anesthesia with no statistically significant difference in the onset of block, quality of surgical anesthesia, pain scores, neonatal Apgar score, hemodynamic variables and need for vasopressor.

Conclusion: Intrathecal fentanyl in a dose of 25 microgram, did not improve anesthesia or analgesia compared to the two lower doses (10 and 15 microgram), but increased the incidence of pruritus and nausea, while 10 microgram was associated with

earlier occurrence of pain in the recovery room. Therefore, we recommend 15 microgram of fentanyl as the optimal dose of intrathecal fentanyl to supplement intrathecal hyperbaric bupivacaine (10mg) for cesarean section under spinal anesthesia.

Keywords: Cesarean sections, pruritus, fentanyl dose

17.23

CHANGE IN MALLAMPATI CLASS DURING LABOR: HYPERTENSIVE VERSUS NORMOTENSIVE PARTURIENT

Samina Ismail, Durriya Raza

Department of Anaesthesiology, Aga Khan University

Background: Mallampati class has been shown to increase during labor. There are no prospective studies that evaluated airway changes in hypertensive parturient during labor. The aim of our study was to observe the frequency of change in Mallampati class during labor in hypertensive compared to normotensive parturient.

Methods: In this prospective observational cohort study, 60 parturients were enrolled and divided into two groups of 30 each: hypertensive parturients and normotensive parturients. The Mallampati class was evaluated in each parturient at two points; during early labor (cervical dilation 1-3 cm and regular contractions) taken as T1 and at 20 minutes after delivery taken as T2. The change in Mallampati class from T1 to T2 was compared between the two groups. Post stratification chi-square test was applied and P value <0.05 was considered as significant.

Results: The demographic characteristics of the subjects according to groups are shown in Table 1. Details of labor management are shown in Table 2. The most common change observed in Mallampati classification in 15 out of 60 (25%) patients was from class II to class III at two different times of observation (from T1 to T2). There were 8 (13.3%) patients in whom Mallampati class changed from I to III and another 8(13.3%) parturients, where change occurred from Mallampati class II to IV and 5(8.3%) parturients showed change from Mallampati I to II. (Figure 1 and 2)

Overall, a tendency towards an increase in Mallampati class during labor was identified with statistically significant difference between the hypertensive and normotensive group (80% versus 40%; p=0.002). The change in Mallampati class was observed to be significantly higher in group H as compared to group N (80% versus 46.7%; p=0.007). Risk of increase in Mallampati class was 2 times more likely in hypertensive women as compared to normotensive

[Relative risk =2; 95% Confidence interval: 1.25 to 3.21].

Conclusions: Mallampati class showed 2 fold increase in hypertensive compared to normotensive parturients during labor; requiring additional caution during airway management.

Keywords: Mallampati class, airway changes during labor, hypertensive disorders

17.24

EFFECT OF INTRAOPERATIVE ANAESTHETIC MANAGEMENT ON PATIENTS' PAIN SCORES IN POST ANESTHESIA CARE UNIT AFTER CESAREAN SECTION

Samina Ismail, Asiyah Aman

Department of Anaesthesiology, Aga Khan University

Objective: To determine the effect of intraoperative factors like technique of anesthesia and use of specific opioids on patients' pain score and need for first rescue analgesia in the post anesthesia care unit after cesarean section.

Methods: This cross sectional study of six months collected data on cesarean section patients which included patients' demographics, technique of anesthesia, intraoperative use of specific opioids, co-analgesia, numerical rating score at 0,30,45 and 60 minutes and time of first rescue analgesia in the post anesthesia care unit.

Results: During the six months of study period, a total 389 patients were operated for CS from 8-17 hours during the week days. There were 352 patients who fulfilled our inclusion criteria and were approached for consent, out of which 334 consented and were enrolled in the study and assessed in the PACU. The demographic characteristics including the American society of anaesthesiologists (ASA) status, mode of admission, type anesthesia is shown in table 1. All patients having NRS of >4 received rescue analgesia (I/V tramadol bolus (1 mg/kg) which took from 3-15 minutes for NRS to become <4. (Table2). Comparison between technique of anesthesia and time for the need of first rescue analgesia is shown in table 3. Among 334 patients enrolled in the study, patients having moderate to severe pain ranged from 7.2-13.3%, none of the patient had severe pain at 90 and 120 minutes in PACU. All patients having NRS of >4 received rescue analgesia with an average 3-15 minutes for NRS to become <4. There was a statistically significant (p value <0.0005) low pain scores at all times in the PACU in patients receiving intraoperative co-analgesia as compared to those not receiving it, patients having surgery under regional anaesthesia (RA) compared to

general anaesthesia or receiving intravenous(IV) intraoperative morphine compared to nalbuphine or tramadol when done under general anaesthesia (GA). *Conclusions:* Intraoperative factors like RA, use of intraoperative co-anaesthesia and use of IV morphine under GA is associated with low NRS in post CS patients in PACU. Use of RA with intraoperative co-anaesthesia can be effective in improving pain scores in PACU especially when faced with the shortage of good quality opioids like morphine.

Keywords: Post anesthesia care unit, Pain scores, Cesarean section

17.26

RARE PHENOTYPIC VARIATION OF FREEMAN SHELDON SYNDROME IN A CHILD PRESENTING AT A TERTIARY CARE HOSPITAL IN KARACHI

Hafiza Mehreen Durrani
Department of Paediatrics and Child Health, Aga Khan University

Introduction: Distal arthrogryposis (DA) syndromes are often hereditary, and predominantly involve joints of hands and feet. Freeman Sheldon is a type of distal arthrogryposis with characteristic facial features. This also includes spinal deformities, metabolic and gastroenterological problems, other dysmorphic craniofacial characteristics and visual and auditory impairments. However various case reports have shown a marked variation in the phenotypes of children diagnosed with this syndrome which emphasizes the need to further explore the hidden entities consistent with this syndrome. We herein present a case of congenital distal contractures with some facial features suggestive of this syndrome .

Case Description: A seven year old female child presented to NICH, with multiple joint contractures since birth predominantly involving distal ends of both upper limbs with ulnar deviation of fingers and flexion of both elbows. There was symmetrical flexion of knees and talipes equinovarus presented also. Facial dysmorphism features included prominent nasolabial folds and full cheeks which favored the diagnosis of Freeman Sheldon syndrome. These deformities are non-progressive and improve with physiotherapy. Rest of the physical examination was unremarkable. Child history revealed that the birth was through elective caesarian section with breech presentation at term, birth weight was 3kg and APGAR score 8 and 9 at 1 and 5 min respectively. Antenatal history did not reveal anything remarkable. Skeletal survey showed craniofacial disproportion with dolicocephaly and

steep anterior cranial fossa. Mandible and malar bones were small, with ulnar deviation and equinovarus deformity in feet. Spine was unremarkable.

Conclusion: Freeman-Sheldon Syndrome is a disease associated with missense mutations in the motor domain of embryonic myosin isoform. Recombinant expression system can shed some light to explore its wild type and mutants which can enable modern science to understand the various manifestation of this syndrome .

Keywords: distal arthrogryposis, Freeman sheldon syndrome, phenotypic variation

17.27

ATTITUDE TOWARDS GENDER ROLES AND VIOLENCE AGAINST WOMEN AND GIRLS (VAWG): BASELINE FINDINGS FROM AN RCT OF 1752 YOUTHS IN PAKISTAN

Tazeen Saeed Ali, Rozina Karmaliani, Judith McFarlane, Hussain Maqbool Ahmed Khuwaja, Yasmeen Somani, Esnat D. Chirwa, Rachel Jewkes
School of Nursing & Midwifery, Aga Khan University, Texas Woman's University and South African Medical Research Council

Background: Violence against women is driven by gender norms that normalize and justify gender inequality and violence. Gender norms are substantially shaped during adolescence. Programs offered through schools offer an opportunity to influence gender attitudes toward gender equity if we understand these to be partly shaped by peers and the school environment. Objective: We present an analysis of the baseline research conducted for a randomized controlled trial with 1752 grade 6 boys and girls and their attitudes toward gender roles, VAWG, and associated factors.

Methods: We used baseline data from a cluster randomised control study. Interviews were conducted in 40 public schools in Hyderabad, with 25–65 children per school. Questions were asked about attitudes toward gender roles, peer-to-peer perpetration, and victimization experiences, and family life, including father- or in-law-to- mother violence and food security. Multiple regression models were built of factors associated with gender attitudes for boys and girls.

Results: Our result have shown youth attitudes endorsing patriarchal gender beliefs were higher for boys, compared to girls. The multiple regression model showed that for boys, patriarchal gender attitudes were positively associated with hunger, depression, being promised already in marriage, and being a victim

and/or perpetrator of peer violence. For girls gender attitudes were associated with hunger, experiencing corporal punishment at home, and being a perpetrator (for some, and victim) of peer violence.

Conclusion: Youth patriarchal attitudes are closely related to their experience of violence at school and for girl's physical punishment, at home and for boys being promised in early marriage. We suggest that these variables are indicators of gender norms among peers and in the family. The significance of peer norms is that it provides the possibility that school-based interventions which work with school peers have the potential to positively impact youth patriarchal gender attitudes and foster attitudes of gender equality and respect, and potentially to decrease youth victimization and perpetration.

Keywords: Gender Attitudes, Gender Norms, Violence Against Women and Girls (VAWG)

17.28

THE INTERSECTION OF SCHOOL CORPORAL PUNISHMENT AND YOUTH PEER VIOLENCE: BASELINE RESULTS FROM A RANDOMIZED CONTROLLED TRIAL IN PAKISTAN

Hussain Maqbool Ahmed Khuwaja, Rozina Karmaliani, Judith McFarlane, Rozina Somani, Saleema Gulzar, Tazeen Saeed Ali, Zahra Shaheen, Esnat D. Chirwa, Rachel Jewkes, School of Nursing and Midwifery, Aga Khan University and South African Medical Research Council

Violence against youth is a global issue; one form of youth victimization is school corporal punishment. We use baseline assessments from a cluster randomized controlled trial to examine the prevalence of school corporal punishment, by gender, and the relationship to levels of peer violence at school, parent corporal punishment, youth food security and youth academic performance and school attendance in Pakistan. Forty homogenous public schools in the urban city of Hyderabad, Pakistan were chosen for randomization into the trial evaluating a youth violence prevention intervention. 1752 6th graders, age 11-14 years, were selected as the target population. Since schools are segregated by gender in Pakistan, data are from interviews in 20 boys' schools and 20 girls' schools. Overall, 91.4% of boys and 60.9% of girls reported corporal punishment at school in the previous 4 weeks and 60.3% of boys had been physically punished at home in the past 4 weeks compared to 37.1% of girls.

Structural equation modeling revealed one direct pathway for both boys and girls from food insecurity to corporal punishment at school while indirect pathways were mediated by depression, the number of days missed from school and school performance and for boys also by engagement in peer violence. Exposure to corporal punishment in school and from parents differs by gender, but in both boys and girls poverty in the form of food insecurity was an important risk factor, with the result that poorer children are victimized more by adults.

Keywords: School Violence, School Corporal Punishment, Home Corporal Punishment

17.29

CHILD ABUSE: IMPROVE PRACTICES FOR EARLY IDENTIFICATION, PREVENTION AND MANAGEMENT

Arisha Qayyum

Department of Human Development Programme, Aga Khan University

Introduction In Pakistan approximately 15-25% children endure some form of sexual violence before the age of 18 years (SPARC). However, many cases go unreported due to taboos, guilt, and the shame associated with sex and sexuality. Data from 40 low and middle income countries shows that up to 10% of adolescent girls aged 15-19 reported incidences of forced sexual intercourse or other sexual acts in the previous year (UNICEF, 2014).

Objectives Main objectives were to assess the impact of awareness raising sessions on students and teachers. To build their capacity for early identification and relevant intervention in form of building referral mechanism and case management. Also to aware students about their rights and preventive measures to avoid sexual violence, harassment and abuse.

Methods This pilot study was conducted in 23 schools of Karachi (20: private and 03 government schools). Ten training sessions with teachers and 23 awareness raising sessions with students were conducted in 18 schools. Consent was explored prior to conducting the sessions through school administration. In total 672 students and 128 teachers have participated in awareness raising sessions.

Conclusion and Recommendations It was observed that students were able to identify the sexual violence and developed their own defense mechanism to escape the situation. It was found that there is a dire need to build the capacity of teachers and students to eliminate sexual violence in academic institutes especially in

slum areas. A multi-sectoral approach requires for the collaboration at the district level across education, health, youth and social welfare sectors, as well as cooperation at the national level between ministries. Sexual Violence cannot be addressed unless it is better understood. The inability to recognize and respond to Sexual Violence prevents the transformation of schools into empowering spaces for girls, boys and teachers.

Keywords: child abuse, awareness sessions, prevention and management

17.30

ASSESSING THE ADHERENCE OF OBSTETRICIANS TOWARDS POSTPARTUM DIABETES SCREENING GUIDELINES: A PRE AND POST INTERVENTION STUDY AT SECONDARY CARE HOSPITAL IN KARACHI, PAKISTAN

Sadiqa Munir Razzaqui, Neelofur Babar, Zaibunnisa Memon

Department of Obstetrics and Gynaecology, Aga Khan University

Gestational diabetes mellitus (GDM) a significant risk factor for diabetes mellitus (DM) not only poses increased risk of adverse pregnancy outcomes and complications later in life to the woman but also to her children in adult life. In spite of recommendations for intensive postpartum monitoring, screening rates are low. The objective of this study is to assess adherence of obstetricians to recommended postpartum DM screening guidelines.

Methods: Design: Pre and post intervention study. Population Setting: Aga Khan Hospital for Women-Karimabad (AKHW-K).

Eligibility Criteria: All Obstetricians practicing at AKHW-K assessed for adherence to postpartum DM screening guidelines. All booked women with GDM delivered 6 months before and after intervention included. Intervention: Refresher lecture/presentation on postpartum DM screening guidelines conducted to create awareness and refresh knowledge. *Outcome:* Main exposure variable is adherence of obstetrician to postpartum DM screening guidelines and primary outcome variable is documented plan of postpartum OGTT in Medical record (MR) of patient +/- OGTT report in MR . Data Collection: Data collected on a predesigned performa by reviewing the MR of women with GDM affected pregnancy who delivered in the 6 months before intervention and those who delivered after intervention. Results: Overall 550 medical

records reviewed, 275 before intervention labeled as group A and 275 after labeled as B. There was no statistical difference between the groups in terms of age, parity, gestational age at delivery and history of GDM. Cesarean section, women managed on insulin with / without metformin, employee status of the obstetrician all increased the chances of getting advice for OGTT.

Conclusion: Results from this study strongly suggest that it is time for more strategic planning and not only monitoring of obstetrician adherence but also steps for patient education regarding consequences of DM and benefits of detection of abnormal glucose tolerance in early postpartum period.

Keywords: Gestational diabetes, postpartum, diabetes mellitus

17.31

A PILOT STUDY: TRADITIONAL PLAY IN BALUCHISTAN

Arisha Qayyum

Department of Human Development Programme, Aga Khan University

Introduction Psychological researches have established that there are five fundamental types of play; physical play, play with objects, symbolic play, socio-dramatic play, and games with rules. Each supports a range of cognitive and emotional developments. Some types of play are more fully researched than others, and much remains to be understood concerning the underlying psychological processes involved. Researches reflected that there is variation in children in the degree to which they are playful. It was found that playful children are securely attached emotionally to caregivers. Poverty and urban living, resulting in stressed parenting and lack of access to natural and outdoor environments, can lead to relative play deprivation. It was observed through this pilot study that such children can be benefited through the involvement in local no cost traditional games and thus can enhance their overall development. *Objective* Role of traditional games in child's development in resource poor communities of Balochistan. *Methodology* Naturalistic observation was applied for data collection. Further information was recorded through semi-structured checklist developed based on the data collected. Play patterns of children aged 3-8 years were observed for a period of 3 months at Qila Saifullah, Quetta, Balochistan. Data was maintained in Separate lists of gender specific local games for analysis purpose.

Conclusion and Recommendations It was found that children involved in traditional games are more stable in their social and emotional development and shown good coping skills in problem solving. Therefore, in order to safeguard traditional games and Sports we need to add value in terms of cultural comprehension. Local games need to be encouraged at local level so to preserve the traditional games and to enhance child's development through games.

Keywords: Play, Remote Communities, Child Development

17.32

VALIDATING THE PEDIATRIC APPENDICITIS SCORE AS A TOOL FOR DETERMINING THE CLINICAL OUTCOMES OF PEDIATRIC PATIENTS WITH SUSPECTED ACUTE APPENDICITIS IN PEDIATRIC EMERGENCY DEPARTMENT

Syed Maaz Salahuddin, Asad Mian, Mehtab Jaffer, Omair Ayaz

Department of Emergency Medicine, Nursing Education Services and Medical College, Aga Khan University

Introduction: Appendicitis is a prevalent cause for abdominal pain in children brought to the Emergency Department **Objectives:** To validate the correlation between the Pediatric Appendicitis Score (PAS) and the provisional diagnosis of acute appendicitis by estimating its effectiveness in predicting clinical outcomes in children presenting with abdominal pain to the Emergency Department.

Methods: Retrospective chart review study was conducted of 103 children with clinical suspicion of acute appendicitis, aged 0 to 18 years, brought to the Emergency Department of the Aga Khan University, Karachi from year 2010 to 2012. Questionnaire was designed, which included Demographics, clinical features, laboratory and histopathology results. Data was collected, (PAS) score was calculated using the information provided at initial presentation and association with clinical outcomes was developed. The outcome variable was the histological presence or absence of appendicitis.

Results: Data was evaluated, by using SPSS version 22. The mean age was 11.04 years, male sex was predominant (77.7%). 71.8 % patients presented to Emergency within 24 hours. Migratory pain, nausea or vomiting, and right lower quadrant tenderness were common predictors. 76.7 % patients presented with right lower abdominal pain. The mean Pediatric

Appendicitis score was 6.44. 44.7 % had equivocal PAS (score 4-6) and 49.5 % had high risk PAS (score >6). Majority of patients underwent imaging (88.3%) and Ultrasound abdomen was the preferred imaging modality (64.1 %) in children. In 74.8 % children, imaging was suggestive of appendicitis. From our data it was noticed that in all 103 (100 %) patients surgical intervention was done, out of which 98.1 % biopsy results were positive for appendicitis.

Conclusion: From this study we concluded that, Pediatric Appendicitis Score is a good tool, and should be used in Emergency to predict the clinical outcomes (appendicitis) in pediatric patients, as it allows early evaluation, prompt diagnosis and early intervention, minimizing complications, ensuring patients' safety.

Keywords: Pediatric Appendicitis Score, Acute Appendicitis, Abdominal pain

17.33

METABOLIC ACIDOSIS AMONG PEDIATRIC INTENSIVE CARE UNIT PATIENT'S

Noor Ul Ain, Anwar ul Haque, Arshalooz Rehman
Department of Paediatrics and Child Health, Aga Khan University

Metabolic Acidosis Among Pediatric Intensive Care Unit Patient's Noor ul ain, Anwar ul Haque , Arshalooz Rehman **Introduction:** Metabolic acidosis is the most frequent acid-base disorder in the intensive care unit. The optimal analysis of the underlying mechanisms is unknown. It may contribute to the morbidity and mortality in critically ill patients. The relationship between initial AG at the time of admission to the pediatric intensive care unit (PICU) and mortality or length of stay (LOS) is unclear. The MA is also measured through various different methods. Besides pH, the serum bicarbonate and standard base (base deficit in MA) this study was undertaken to evaluate the frequency of metabolic acidosis in patients admitted in the pediatric Intensive Care Unit of a tertiary care hospital, Karachi on the basis of Base deficit ≥ 5 .

Objective: To determine the frequency of metabolic acidosis in patients admitted in the pediatric Intensive Care Unit of a tertiary care hospital, Karachi.

Study Design: Cross sectional study.

Duration Of The Study: August 2015-March 2016

Material & Methods: The present study included 200 consecutive patients admitted to Pediatric ICU or CICU at Aga Khan University & hospital during the period of Aug 2015 – March 2016. Metabolic acidosis was diagnosed following analysis of arterial blood gas

(ABG) parameters in clinical suspected cases with acid base imbalance. Metabolic acidosis was measured by drawing 1cc blood and sent for BG if BE >-5meq/l then it was considered as MA. The basic demographic variables (age, gender, primary diagnosis, co-morbidity) were collected on structured proforma. The following clinical variables pH, base deficit, serum bicarbonate, PCO₂ was also be assessed in the proforma. All data were entered into password protected computer to keep the confidentiality.

Results: In total 200 children were enrolled in the study during the study period of eight months from August 2015 to March 2016, 82 of them had metabolic acidosis. On analysis of gender it was found that our study population was slightly predominated by male 112 (56%) as compared to this there were 88 (44%) females. They all belonged to the age group of 1 month to 16 years (i-e:1 month to 192 months). Average mean age of presentation was 51±49 (1 to 192 in months) with the median age of 32 months in metabolic acidosis group compared to median age of 48 months in the no metabolic acidosis group. Mean duration of hospital stay was 4.65±4.98 (1 to 28 days) patients with metabolic acidosis duration was 5.56±5.93 (1 to 28 days) than those patients without metabolic acidosis 3.95±3.975 (1 to 28 days). Among 200 cases diagnosed metabolic acidosis was found in 82 cases i.e. 41%. Out of which mechanical ventilation found 57(69.5%), Inotropes 42(51.2%) and renal support 46(56.0%) children. Compared to Mechanical ventilation 63(53.3%), inotropic support 57(48.3%) and renal support 50(42.3%) in patients with no metabolic acidosis. Among all cases, 163 (83%) patients survived and rest 37 patients died. Severe metabolic acidosis on admission is associated with significant mortality in critically ill patients (P = 0.014*).

Conclusion: Metabolic acidosis seems to be associated with high mortality and increased length of stay in hospital and in the pediatric ICU. This study highlights the magnitude of metabolic acidosis in critically ill children admitted in PICU. It is also concluded in our study that significant mortality is associated with metabolic acidosis than those without metabolic acidosis. **KEYWORDS:** ABG (arterial blood gas); MA (Metabolic acidosis); Base deficit (BD), corrected anion gap; ICU(Intensive care unit); pCO₂ (partial pressure of carbon dioxide); pO₂ (partial pressure of oxygen); SBE (standard base excess); SID (strong ion difference).

Keywords: BASE EXCESS, METABOLIC ACIDOSIS, PEADIATRIC ICU

17.35

TONGUE ENTRAPMENT IN A PLASTIC BOTTLE IN A YOUNG BOY: A CASE REPORT

Syed Maaz Salahuddin, Emaduddin Siddiqui, Basit Memon, Mohsin

Department: Emergency Medicine, Aga Khan University

We report a case of 8 years old boy, who was received in Emergency Department with history of entrapment of tongue in a plastic bottle. On arrival, child was anxious, in discomfort. Child's mouth was open with tongue protruding outside and bottle opening was encasing the middle third of the tongue which was not visible and anterior part of the tongue was edematous & pale with drooling of saliva and no active bleeding. Systemic examination was unremarkable. An emergency response was generated, although airway was secure, preparations were made for possible emergency tracheostomy and ENT team was taken on board. Supportive oxygen via nasal prong on 2 liters was applied. As plastic bottle was already cut from the center, when we received the boy, it was easy for us to visualize the tongue. Xylocaine gel was applied to the anterior third of the tongue and then, by twisting method after 15 minutes the plastic bottle was removed. After removal of the bottle, it was noticed that tongue had swelling and little bleeding from the anterolateral side. Normal saline was used to irrigate the edematous tongue. Bleeding was stopped by application of pressure with sterilized gauze. Child was kept under observation as there was tongue edema, but intubation was not required and during the stay he remained stable, icing was done and tongue edema started settling. **Discussion:** Tongue entrapment is a rare cause of injury to the tongue. Anterior third part of the tongue is the most affected part of the tongue that is commonly injured. Timely management is of the essence in such cases, as delay in the management could worsen the symptoms and may lead to severe distress of the patient. Hence we conclude that, the Emergency Department should have the appropriate resources and equipment available to deal with such situations. Consult should be given to Otolaryngologist and close observation should be done if any compromise to airway is suspected.

Keywords: tongue entrapment, plastic bottle, Xylocaine

17.36

FOLLICULAR FLUIDS: VITAMIN E LEVELS AND REPRODUCTIVE OUTCOMES

Mussarat Ashraf, Fatima Mustansir, Syed Ali Mujtaba, Faiza Alam, Rehana Rehman

Department: Biological and Biomedical Sciences and Medical College, Aga Khan University

Objective: To study the impact of Vitamin E (VE) levels of follicular fluid (FF) on reliable markers of oocyte competence to fertilization, embryo development and pregnancy outcome in patients of intra cytoplasmic sperm injection (ICSI). **Methods:** In a cross sectional study of one hundred and thirty seven females booked for ICSI, follicular fluid was obtained during oocyte retrieval, centrifuged and stored for analysis. VE levels in FF were analyzed by enzyme linked immune sorbent assay. Final outcome of ICSI was categorized into non-pregnant/ pregnant; latter with beta hCG > 25 mIU /ml and evidence of heart beat. Generalized linear model using log binomial regression was applied to see the effect of VE on pregnancy, the effect of VE on oocyte and embryo parameters was assessed by linear regression; all p-values less than 0.05 were considered statistically significant.

Results: Clinical pregnancy was observed in 39 (28.5%) females whereas 98 (71.5%) were non pregnant. Follicular fluid VE levels were significantly high in pregnancy group. Chances of becoming pregnant increased to 4% with an increase in VE levels (p-value 0.01). VE gave significant positive relationship with all oocyte (retrieved, mature and fertilized) parameters, cleavage of embryo till its differentiation to blastocysts

Conclusions: Adequate amount of VE in follicular fluid enhances the possibility of maturation of oocytes on account of the anti-oxidant potential, which resulted in better reproductive outcome after ICSI. Due to the limited availability of literature regarding mechanistic functionality of VE in human reproduction, and further detailed human studies are required to elucidate its role in pregnancy.

Keywords: Vitamin E, Follicular fluid, Intracytoplasmic sperm injection

17.37

PAKISTANI MIDLIFE WOMEN'S EXPERIENCE OF MENOPAUSE

Amynah, Magdalena Solina Richter
University of Alberta;

Midlife women often experience a number of physiological changes. These are mainly related to the pre-, peri- and post-menopausal symptoms that have an impact on their physical and psychological well-being, as well as general quality of life. Midlife women from diverse cultures differ in behaviors, values and beliefs related to their life experiences, as

well as ways to manage menopausal symptoms. Along with accessing modern healthcare services, Pakistani urban women commonly use natural ingredients such as honey, garlic, and ginger, and practice mind and body therapies such as yoga, aerobics and meditation to manage their menopausal symptoms. A combination of modern medicine and self-care practices tend to be used to promote health and prevent disease. There is limited research in the Pakistani context (Anwar, Green, Norris & Bukhari, 2015) of midlife women and the menopause symptoms and strategies used to manage menopause (Baig & Karim, 2006; Nisar & Sohoo, 2010). My doctoral research study aims to explore Pakistani, urban, Muslim midlife women's experiences of menopause and to acquire a deeper understanding of menopause and associated management strategies. Focused ethnography research methodology will be used for this study. It will guide and inform an understanding of the experiential knowledge of midlife women in a specific cultural context. Recruitment of approximately 20 Pakistani, Muslim women will be facilitated through a professional yoga and aerobic practitioner. Later, recruitment may continue using snowball approach; all participants will be residing in urban Karachi. I will engage in 1-2 in-depth, semi-structured interviews, in order to contribute to an explorative study to develop a deeper understanding of the experiences related to the management of menopausal symptoms, use of biomedical interventions, and self-care practices. Mandatory ethical considerations will be followed in the study. The data will be managed using Quirkos qualitative data management software; and I will analyze the data. Knowledge generated through this study, will inform nurses and allied healthcare providers to better care and advocate for Pakistani Muslim women experiencing menopause.

Keywords: midlife, menopause, experience

17.38 PREVALENCE OF CHILDHOOD OBESITY IN AN URBAN COMMUNITY OF KARACHI; A COMMUNITY BASED PROJECT

Ahmad Yar Baig, Saima Munawar, Ali Yousufi
School of Nursing and Midwifery, Aga Khan
University

Introduction: Childhood obesity is an international problem, and children are at a higher risk of health problems; disease such as hypertension, diabetes type 2, cardiovascular disease and different cancers that include kidney cancer, colorectal cancer, and esophageal cancer etc. Because of these non-communicable disease the rate of mortality and morbidity is increased day by day globally. Similarly due to obesity the quality of life of a child is significantly effected and are more prone to teasing, social isolation, bullying by friends, low confident and low self-esteem.

Objectives: A community based project (part of BScN Year IV CHN III) to investigate the prevalence of childhood obesity in an urban community of Karachi Pakistan.

Methods: This was a quantitative cross sectional study using descriptive and cross-tabulation analysis. Convenient sample of 180 participants were screened for their body size parameters and blood pressures along with secondary focus on BMI. We excluded 7 participants as outliers due to unfavorable findings of the parameters. Descriptive and inferential statistics were conducted with the SPSS. The means and standard deviations (SD) of height, weight, BMI, SBP and DBP were calculated according to age and gender. Z-scores were obtained from Boston Children's Hospital's calculator, while cross tabulations were conducted between the selected categories and BMI*IOTF using the Pearson Chi-squared (χ^2) test. A probability (p) value of less than 0.05 was accepted as statistically significant. We compared the results of BMI according to the International Obesity Taskforce (IOTF) cutoff values for the given age groups. Results: Initially we explored descriptive statistics and their Z-scores along with the frequencies; and categorized based on z-scores. Then these categorical results were correlated with the given values of International Obesity TaskForce. The outcome of our data analysis depicted a significant prevalence of overweight among children and adolescent in the community which is, 42.8% with BMI*IOTF; whereas, 10.4% with BMI category w.r.t. z-scores. Likewise, the analysis also represented an explorative

finding in diastolic blood pressures with a significant value $p=0.01$, where we correlated it with the BMI*IOTF. There was a positive relation between the BMI and DBP while the diastolic pressures were higher among the participants having BMI*IOTF above the normal ranges, i.e. 11.60% (n=20). Unfortunately, we could not find any relationship between the ages and the gender categories correlated to BMI*IOTF, as their significance levels were $p=0.310$ and $p=0.550$ respectively.

Conclusion and Recommendations: Overweight and obesity are evolving health problems hence preventive strategies are necessarily required to overcome these challenges; Below are some of the applicable strategies: • Compliance to healthy living lifestyle • Maintain a positive activity pattern while having exercise and other physical activities. • Health screenings in schools • Healthy foods in the school canteens. • Emphasis on primary health care from awareness to health education and prevention. • Give importance to the role of community health workers and nurses. • Building national health policies for adolescent health

Keywords: Prevalence, Childhood Obesity, Community Survey

Miscellaneous

18.1
ASSESSMENT OF AWARENESS REGARDING
LOOK ALIKE SOUND ALIKE MEDICATIONS
(LASA) AMONG HEALTH CARE
PROFESSIONALS - A REAL THREAT TO
ENSURE SAFE MEDIATION PRACTICES

*Feroza Perveen, Sidra Zaheer, Maryam Siddiqui,
Shazia Ghaffar, Ambreen Mughal
Department Pharmacy, Aga Khan University*

Introduction: The existence of LASA medications are one of the most prevalent cause of medication errors and is of concern worldwide. Medications errors due to LASA medications could be severe enough to cause life threatening harm to patients' health. However, there have been few studies specifically addressing LASA medications in Pakistan, therefore this study survey designed to see the awareness about LASA mediations among health care providers. *Objective:* The aim of the study was to assess the knowledge of health care professionals of different disciplines regarding the Look Alike Sound Alike medications.

Methodology: This was a cross-sectional survey study. Survey was conducted on first National Medication Safety Symposium on 17th December 2016 at Aga Khan University Hospital, Karachi to assess the awareness about LASA drugs and pharmacist role in curtailing medication errors among health care professionals. Questionnaire based survey was designed to cover different important aspects of LASA drugs. Total 175 survey forms were filled up by different health care professionals belonging to different health care sector including hospitals, industries and medical students. *Result:* Based on 175 survey, 149(85.14%) Professionals believed that LASA drugs should be included in high alert medications, 169(96.57%) believed that Auxiliary labels/ pictograms can help to prevent Medication errors in LASA drugs' dispensing. 169(96.57%) agreed that Highlighting the importance of LASA drug names as part of pharmacy staff trainings can enhance safe dispensing practices. 170 (97.14%) suggested that medication safety related events could be beneficial for LASA drugs awareness among health care professionals.

Conclusion: LASA drugs handling is a real challenge of the present era. Medication errors due

to LASA drugs are mostly preventable. Findings from this study can be integrated to suitable programs used in hospitals in order to identify and prevent medication errors in the future.

Keywords: look alike sound alike medications (LASA), medication errors, health care professionals

18.6
INCIDENCE OF DELIRIUM, RISK FACTORS
AND OUTCOME IN INTENSIVE CARE UNIT
OF TERTIARY CARE HOSPITAL OF
PAKISTAN

*Muhammad Asghar Ali, Madiha Hashmi, Waqas Ahmed
Department of Anaesthesiology, Aga Khan University*

Abstract Objectives: Delirium in the critically ill patients is common and distressing. The incidence of delirium in the intensive care unit ICU ranges from 45% to 87%. In Pakistan, we don't have any data regarding incidence of delirium in ICU patients. The purpose of this study to find out the incidence of surgical ICU delirium associated risk factors and outcome in tertiary care hospital of Pakistan

Method: Participants who were admitted to the surgical ICU of Aga Khan University Hospital from January 2016 to December 2016. Baseline characteristics were collected. Delirium was rated by one of investigator by using item Intensive Care Delirium Screening Checklist ICDS-C Demographic data were analyzed using descriptive statistics. Regression analyses were used to analyze the outcomes.

Results: Delirium occurred in 27 of 149 patients with an incidence rate of 19%. The majority of the patients had delirium within five days of ICU admission. The independent predisposing factors were identified age, functional status, disease severity, having pneumonia, cognitive impairment, depression, or previous stroke.

Conclusion: The incidence of delirium our surgical ICU was high. There are several significant risk factors associated with delirium which could be modified. These factors should be considered when

designing effective preventive strategies of delirium.

Keywords: Delirium,, intensive care, risk factors

18.7 CURRENT ATTITUDES OF ANAESTHESIA TRAINEES TO RADIATION EXPOSURE IN TERTIARY CARE HOSPITAL OF PAKISTAN: A SURVEY

Muhammad Asghar Ali, Bushra Salim
Department of Anaesthesiology, Aga Khan
University

Objectives: The cumulative effects of radiation exposure could affect entire body or cause localized

damage to a certain area of the body such as cataract. Therefore it is necessary for clinician especially anaesthetist to know about radiation risks. Therefore the objective of this study was to investigate the attitudes of anaesthesia trainees to radiation exposure and current safety practice
Methods A questionnaire containing 12 questions and it was given to all anaesthesia residents, medical officers and fellows.

Results A total of 54 responses were received. Out of which 59% were exposed to radiation 1-5 times per week. 68.5% believed that they took adequate precautions to get protected from radiation but only 11% used both lead apron and thyroid shield for prevention of radiation exposure. The main reason of noncompliance was non-availability of thyroid shield. Only 1% was used to wear dosimeter.

Conclusions Our results show a variable level of knowledge about radiation dose and risk among radiology residents, fellow and medical officers, but overall knowledge is inadequate in all groups with significant underestimation of radiation dosage

Keywords: Radiation dose, Radiation risk, Questionnaire

18.8 INTEGRATING ROY'S ADAPTION MODEL IN CARE OF PALLIATIVE CLIENTS – A CASE STUDY

Khalid Ahmed, Sarmad Muhammad Soomar
School of Nursing & Midwifery and Nursing
Education Services, Aga Khan University

Background: Palliative setting is always a challenging task for health care providers, especially nurses as direct care givers. It involves emotions and makes nurses emotionally low after assessing client's condition. One must have a mixed feeling to either carry out tasks or not. Palliative is much more patient focused, so nurse has to comply with all their suffering and pain and help them to cope maximally from that. The assessment not only gives the presence of physical pain, but psychosocial and economic stressors as the composite factors for patient's stress.

Objective: The purpose of this study was to identify main domains of stressors in palliative clients and highlighting the integration components of Roy's adaption model with the case study.

Methodology: Authors' witnessed case scenario is discussed in detail in light of literature, supporting the stress promoting factors in palliative care along with a detailed discussion by integrating components of Roy's adaption model.

Results: The major domains highlighted from the case study were physical stressors and psychological stressors. Scenario highlighted patient's health as focal stimuli, contextual stimulus was financial constrain and residual may include other remaining stressors of life like altered family relations. Coping mechanisms are categorized as either individual or group; in this case it goes for an individual coping system through natural means of body like chemicals or hormones. Aspects developed through self-judgment of situations and learning through analysis of stressful events can enhance coping. Further adaption modes were highlighted. According to the concept of Roy model, positive stimuli managed by positive coping and modes of adaption results in effective adaption. In mentioned experience of client the adaption couldn't be categorized as effective due to lack of positive coping skills.

Recommendations and Conclusion: Physical & psychological domains of palliative care are of high importance in terms of addressing patient's chief complaint and associated problem. Thus, the case study revealed lack of positive coping skills in terms of Roy's model. It is strongly recommended to develop quality palliative services for physical care and specialized nursing services for palliative clients to develop psychological coping plans.

Keywords: palliative care, stress, adaption

18.9 VITAMIN B-17 AN ADD-ON SUPPLEMENT FOR CANCER TREATMENT (REVIEW)

Zehra Abdul Muhammad, Tashfeen Ahmad
Department of Surgery, Aga Khan University

Abstract: Introduction: Vitamin B-17 also called Amygdalin or Laetrile is a glycoside isolated from the kernels of certain Rosaceae, which include apricots, plum, bitter almonds, raw nuts etc. It was restricted in 1980s by Food and Drug Administration due to serious cyanide poisoning but still easily available in the market and is prescribed by alternate medical practitioners for cancer treatment. False myth about cancer is raising that cancer is due to deficiency of Vitamin B-17. It is also reported that Amygdalin has antitumor properties especially against bladder, prostate, brain and cervical cancer. While, research studies notably clinical trials has identified its serious adverse events due to cyanide poisoning after treating cancer patients. This review article uncover all false perceptions for vitamin B-17 cancer treatment.

Objectives: To summarize the benefits and harms of vitamin B-17 supplements for the treatment of cancer by means of research evidence from several studies.

Methods: Electronic database search carried out to consolidate available data using PubMed, Ovid, and Google Scholar. The most appropriate research articles were selected and were verified by related articles. Reference citations from relevant publications were also included.

Results: Certain animal and human cell research studies showed beneficial effects of Vitamin B-17

on prostate, bladder, cervical and brain cancer. On the basis of clinical trials conducted on human subjects, there is no justification of use of vitamin B-17 in the treatment of cancer as there is no evident effect in cancer regression or cure. Some oncology clinical trials showed serious cyanide poisoning associated with vitamin B-17 treatment. Evidence-based Drug Information: Cancer Cell Apoptosis: Vitamin B-17 selectively kills mutated cells leading to apoptosis of cancer cells like prostate and cervical cancer. Down-modulating cdk2 and cyclin A: Suppression of cyclin-dependent kinase 2 and cyclin A proteins which regulate cell cycle progression leads to decreased bladder cancer proliferation. Side effects: Severe agitation, encephalopathy, metabolic acidosis, hypotension etc. Detoxification: Detoxifying agent for cyanide poisoning is sodium thiosulfate.

Conclusion: Based on all available facts and evidence based literature, Vitamin B-17 efficacy against cancer treatment is not proven. Instead, highly toxic cyanide poisoning is reported on ingestion by humans. It is recommended that approved methods of cancer treatment should be preferred and unsubstantiated agents should be prohibited to treat cancer.

Keywords: Vitamin B-17, Cancer, Amygdalin

18.10 DEVELOPMENT AND VALIDATION OF INSTRUMENTS TO MEASURE RESIDENTS AND FACULTY PERCEPTIONS OF LEARNING ENVIRONMENT IN THE OPERATING ROOM AT AGA KHAN UNIVERSITY, PAKISTAN

Qamar Riaz, Jacqueline Dias, Sonia Haider
Department for Educational Development and
School of Nursing & Midwifery, Aga Khan
University

Introduction: The operating room learning environment is an essential component of any surgical residency programme and provides a basis for the developing surgeon's competence in surgical skills. Faculty's and residents' perceptions regarding learning environment in the OR serve as quality indicator of the teaching and learning within this important venue. The objective of this study was to develop a valid instrument that could be used

to measure perceptions of both the faculty and the residents regarding OR learning environment.

Methodology: Two instruments were developed for the study. Initial item generation for the instruments was done using Nominal Group Technique. Some items were added from OREEM with modifications to suit local context. The two draft instruments, each with 26 items, reworded according to faculty and residents, were subjected to translational and construct validity, and internal consistency calculated.

Result: The scale content validity indices for clarity and relevance for both the instruments were found to be 0.91 for clarity and 0.92 for relevance for both the instruments. Ninety residents and 78 faculty members completed the questionnaires. Multiple criteria used for the factorability suggested suitability of all the items for factor analysis. The principle factor analysis with varimax rotation resulted in three-factor solution for the instruments explaining 42% and 48% of the total variance for the faculty and resident version of the instruments. The final 22-item instrument had Cronbach's alpha of 0.67 and 0.7 for the faculty & resident versions respectively.

Conclusion: The 'Operating room educational environment scale' (OREES) with faculty (OREES-F) and resident (OREES-R) versions was developed to measure faculty's and residents' perceptions respectively regarding the operating room learning environment. Both the instruments with 22 items have good translational and construct validity and reliability and could be used to identify areas requiring improvement thus ensuring optimal learning experience in OR.

Keywords: Operating room Learning Environment, Factor Analysis, Validity

18.12 TEAM BASED APPROACH: ENSURING THE CONTINUITY OF PATIENT CARE

*Afreen Amir Ali, Amir Amin, Parveen Amir Ali,
Shafqat Shah*
Nursing Services, Aga Khan University

Background In the health care setting, providing the quality of care to patient is more significant. Team-based care is one of the guiding principles of new

learning in health system. Moreover, Team Based working environment focuses interdependence, providing efficient care and a culture that encourages parity among all staff members.

Aim: To build the team based approach which can reduce absenteeism, improve the trend of shift loss and achieve the patient care satisfaction. Method Juran's Problem Solving method was used for quality improvement. Fish-Bone diagram was established to identify the causes in detail for the team based approach and develop PDCA for ensuring the quality improvement.

Results Through, the implementation of team based approach numerous outcomes has been achieved which includes decrease the absenteeism ratio and being controlled, the staff show the sincerity and satisfied with their job, Staff Retention has been sustain after adopting this approach. Furthermore, the patient satisfaction level as raised as the primary nurse has assigned in the area for the entire six which ultimately show the continuity of care from the day of admission till discharge

Conclusion In order to providing the safe quality care to the patient are been ensured by implementing the team based approach.

Keywords: Team approach, patient care, quality outcome

18.13 BRINGING TECHNOLOGY TO THE CLASSROOM- AN EXPERIENCE

Sana Saeed, Abdul Hadi, Muhammad Bashir, Azra Naseem

*Department of Paediatrics & Child Health and
Department for Educational Development, Aga
Khan University*

Abstract Background The term Technology-enhanced learning (TEL) is used to describe the application of Information and communication technologies to teaching and learning. The role of technology in the classroom has steadily increased over the past decade. Teachers must learn how to effectively integrate technology in the classroom and adapt their teaching methods to incorporate new devices. We are hereby describing the experience and perception of participants regarding a workshop conducted based on theme of Technology enhanced

teaching & learning *Methodology*: The workshop was titled as @ kicking out the boredom, bringing in the technology. It was conducted at Institute of Education Development, Aga Khan University, Karachi. The total duration was 3 hours. The participants comprised of schoolteachers, Med and MPhil students. The invitations were sent through emails and WhatsApp. Kahoot, Padlet and Digital photo story telling were utilized during workshop activities. At the end of workshop, feedback was taken from participants on anonymous validated form.

Results: Total numbers of participants in the workshop were twenty. Seventy five percent were school teachers while 25% were Med. & MPhil students. Eighty six percent were females. Ninety eight percent of the participants were found to be highly satisfied with the workshop (mean score 4.5/5). The minimum score was given to the time allocated for this activity (3/5). All participants were found to be motivated enough to incorporate technology in their classrooms.

Conclusion: Professional development of teachers is the vehicle to facilitate smooth and sustainable integration of technology. Enhancing the teacher's knowledge and skills leads to improve classroom teaching which later on translates into student achievement.

Keywords: technology, teaching, learning

18.15

BRIDGING NURSING COMPETENCIES THROUGH PHARMACIST LED TRAINING AND AWARENESS SESSIONS- AN INITIATIVE TO CURTAIL MEDICATION ERROR IN THE EMERGENCY DEPARTMENT OF TERTIARY CARE HOSPITAL

Feroza Perveen, Aisha Akram, Munazza Qureshi, Umme Javeria
Department of Pharmacy, Aga Khan University

Introduction: An emergency department (ED) is highly prone for medication errors globally. Medication registered nurses (RNs) are directly involved in patients care. To limit and mitigate errors, its necessary to develop knowledge of the medication-use process. Educational sessions by

Emergency Pharmacist to all RNs is one of the proactive approaches to reduce medication error. *Objective*: Crafting medication error awareness through sessions in nursing in Emergency department by Emergency department pharmacist. *Methods*: After mutual collaboration between ED pharmacist & ED Quality Improvement Committee, pharmacy has provided medication error prevention sessions on four different pre-selected modules to all ED medications RNs and nursing staff quarterly in 2016 with on average 20 participants per session, delivered detailed understanding of the topic to prevent medications errors; its types, consequences and strategy to reduce it. Beside these, pharmacist has reinforced the careful handling of LASA (look alike and sound alike) medications which is a real thread to ensure safe medication practices and voluntary reporting of near misses /medication error.

Results: In each session, participants were evaluated by pre and posttest, with most scoring 89 % and above in the quizzes from average base line 55 % showing significant understanding of the topic.

Conclusion: We've concluded that these sessions are serving as a good learning opportunity to curtail medication error & this strategy can bring change in attitude of RNs towards careful handling of medications & in improving the voluntary medication error/near misses reporting. Future plan is to continue these sessions after incorporating new strategies.

Keywords: Medication error, Emergency pharmacist, Emergency department

18.16

MAGNITUDE OF RISK FACTORS FOR NON-COMMUNICABLE DISEASES AMONG HEALTH PROFESSIONALS AT A PRIVATE TERTIARY CARE HOSPITAL KARACHI, PAKISTAN

Santosh Kumar, Dr Rubina Barolia, Ms Yasmin Parpio, Dr Aziz A Jiwani
School of Nursing & Midwifery and Department of Medicine, Aga Khan University

Background Globally, Non-Communicable Diseases (NCDs) are considered as a major cause of mortality and morbidity. The people's vulnerability

to NCDs is increasing as a result of a high magnitude of risk factors (RFs) of NCDs among them. Health Professionals (HPs), being mentors of the population, are responsible for managing a plethora of health issues and for reducing the RFs of NCDs through guiding principles and prevention. Despite this, HPs themselves are not sufficiently adopting health promotion practices, and becoming easy victims of the RFs and, eventually, NCDs.

Purpose The purpose of this research was to determine the RFs of NCDs and their magnitude, among HPs at a private tertiary care hospital in Karachi, Pakistan. **Methodology** A quantitative, analytical cross-sectional design, was used to attain the study purpose. In all 264 HPs, of seven different categories, from twelve service lines of AKUH were recruited. The purposive sampling technique was adopted and the modified STEPs questionnaire was used to gather the data. Data were analyzed by using SPSS v.19. The descriptive analysis was calculated by using mean with standard deviation; frequency and proportion; and median with interquartile range. Moreover, the Pearson Chi-square test was used to find out associations between the study variables. **Results** The present study findings revealed a high magnitude of tobacco use (43.2%), alcohol consumption (15.9%), inadequate diet intake (81.8%), and physical inactivity (61.7%) among the HPs. The study results also depicted that 22% of the HPs were hypertensive, 16.3% were overweight, and 51.5% were obese. The RFs for NCDs were more prevalent among the nurses compared to other HPs. Alcohol consumption, unhealthy diet, and physical inactivity were found to be significantly associated with gender ($P < 0.05$). The findings also showed that physical inactivity and BMI were associated with marital status. In addition, a significant association of hypertension and BMI with age groups was observed.

Conclusion The present research reports a high magnitude of RFs of NCDs among HPs. Considering this, there is an urgent need for motivating HPs to adopt healthy behaviors and for initiating HPs focused interventions at different levels, for the prevention, health promotion, and early detection of the RFs of NCDs among them.

Keywords: Risk Factors, Non-Communicable Diseases, Health Professionals

18.19 SEROTONIN SYNDROME AND CONCOMITANT USE OF TRAMADOL AND METOCLOPRAMIDE: A POTENTIAL CAUSE

*Humera Khatoon, Mahreen Muzammil
Department of Pharmacy, Aga Khan University and
Jinnah University for Women*

Background A wide variety of medications have the potential to elevate serotonin levels in the body. When these agents are combined, the risk of serotonin syndrome increases. Tramadol is a commonly prescribed centrally acting analgesic in primary care settings. The incidence of tramadol-induced nausea/vomiting is reduced if metoclopramide is added to tramadol. Seizure and serotonin syndrome associated with tramadol and metoclopramide monotherapy is already reported in literature. Concurrent use of both these drugs may increase the risk of serotonin syndrome. Objective of our study is to create awareness of this serotonergic effect among clinicians to avoid combined use of serotonin-augmenting drugs in future.

Methodology Experimental study conducted on thirty Wistar albino mice, divided into 3 equal groups (I, II, III) treated with distilled water, tramadol+metoclopramide (2mg/kg+0.1mg/kg) and tramadol (2mg/kg) p.o bid respectively for 15 days. Animal behavior, exploratory and locomotor activity was checked on 1st and 15th day of dosing using sticky label, novel object and open field tests. **Results** were analyzed statistically by two-way ANOVA followed by Scheffe test for post hoc analysis. Result Difference in animal behavior was significant with respect to rearing ($p \leq 0.01$, $p \leq 0.001$), freezing ($p \leq 0.001$, $p \leq 0.05$) and grooming ($p \leq 0.01$, $p \leq 0.001$) when group II was compared with I and III respectively. Difference was also significant ($p \leq 0.001$) when group III compared with I. In open field test animals of II and III groups showed hyperlocomotion ($p \leq 0.001$) when compared with group I. Difference between II and III was also significant ($p \leq 0.001$). In novelty-based tests (novel object and sticky label test) animals showed high

level of vigilance ($p \leq 0.001$) in groups II and III as compared to group I.

Conclusion Animal behavior profile of our study suggests further studies to determine interplay between serotonin syndrome and other factors such as hyperthermia, seizures, dyskinesia associated with concomitant use of tramadol and metoclopramide.

Keywords: Serotonin syndrome, tramadol, metoclopramide

18.20 STUDENTS' READINESS FOR AND PERCEPTION OF INTER-PROFESSIONAL LEARNING: A LITERATURE REVIEW

Maira Nizamuddin
*School of Nursing and Midwifery, Aga Khan
University*

Introduction: Today, it's hard to imagine any of the health professions failing to acknowledge that healthcare is a "team sport." Reports of patient deaths from preventable medical errors were blamed on a serious lack of communication and teamwork, which led healthcare professionals to invest heavily in team training. Eventually, it became apparent that this might be a lot easier and more effective if started when health professionals were still "moldable" students who were just beginning to develop professional relationships with their colleagues in other disciplines, rather than when roles and patterns of behavior were so rigidly ingrained that they were difficult to change. Other benefits of the collaborative approach are improved patient outcomes, safer care, and lower costs. *Objectives:* The objective of this literature review was to obtain a deeper understanding of how students experience and perceive inter-professional collaboration.

Method: The literature was reviewed in BMC, IJME, Elsevier, BMJ, Journal of Nursing education and Practice from 2013-2016. 8 articles were included in which healthcare students' experience of inter-professional communication and readiness for inter-professional learning was observed with the help of interviews and surveys. **Results:** Literature revealed that the students recognized that

patient safety was a shared goal. Healthcare students felt that spending more time together in structured activities would increase their confidence about responding to comparable situations in practice. Students felt that an emphasis on inter-professional competence, communication and teamwork must begin in academic setting and be reinforced throughout the curriculum. These studies have stimulated faculties to begin this initiative. Students also emphasized the importance of structure, interaction, and insights into own and other professions' tasks as a base for inter-professional collaboration.

Conclusion: This supports the importance of inter-professional collaboration and communication, with poor communication among nurses and physicians being associated with increased mortality, length of stay, and readmission rates.

Keywords: inter-professional learning, inter-professional collaboration, inter-professional communication

18.21 MANAGEMENT STRATEGIES OF TRIGEMINAL NEURALGIA AND THEIR EFFECTIVENESS IN PAIN CLINIC OF A TERTIARY CARE HOSPITAL

*Ausaf Ahmed Khan, Sarfraz Siddiqui, Gauhar
Afshan*
*Department of Anaesthesiology, Aga Khan
University*

Introduction: The International Association for the Study of Pain (IASP) defines trigeminal neuralgia (TN) as sudden, usually unilateral, severe, brief, stabbing, recurrent episodes of pain in the distribution of one or more branches of the trigeminal nerve. Current management guidelines recommend medical treatment as the first line therapy for trigeminal neuralgia with carbamazepine as drug of choice. When medical treatment fails, interventional treatment options are then considered including radiofrequency and surgery. Although, over the last two decades, a lot of data has been collected to aid in diagnosis and treatment of TN, these studies are mainly based on data from Caucasian/Western populations. There is very limited data of population from Asian subcontinent

region and a number of population based studies would be useful to make local guidelines for appropriate treatment strategies that may result in improved care.

Objective: To determine management practices of Trigeminal Neuralgia and its effectiveness in pain clinic of a tertiary care hospital.

Materials and Methods: After approval from the Departmental Research Committee and ERC, all patients who presented to the pain clinic either already diagnosed with trigeminal neuralgia or with unilateral facial pain and later diagnosed to have trigeminal neuralgia at the clinic between 1st Jan 2012 to 31st Dec 2016 were enrolled in this audit. Data was retrieved from pain management software program, Pain Management Clinic System (PMCS). In PMCS, medical records of all patients visiting to the pain clinic are entered by pain nurse every day. For any missing data the patient's medical records were reviewed.

Statistical Analysis: All statistical analysis will be performed using SPSS version 19 (SPSS Inc., Chicago, IL). Mean and standard deviation will be computed for quantitative variables while frequency and percentage will be estimated for qualitative variables. P-value ≤ 0.05 will be considered significant.

Results: Results will be discussed on the day of presentation.

Keywords: trigeminal neuralgia, pain, pain clinic

18.22 AWAKE CRANIOTOMY IN DEVELOPING COUNTRIES: REVIEW OF HURDLES

Saad Akhtar Khan, Karim Rizwan Nathani, Syed Ather Enam, Faraz Shafiq
Departments of Surgery & Anaesthesiology and Medical College, Aga Khan University

Awake craniotomy is a neurosurgical approach, in which patient is operated under local anesthesia to assess his neurological function intraoperatively. It has multiple advantages over craniotomy under general anesthesia, mainly including improved postoperative neurological status, lower length of hospital, and lower overall cost of hospital stay. Awake craniotomy is

commonly practiced in the developed world; however, its role in developing country is limited. Considering the benefits that awake craniotomy offers, it can contribute significant socioeconomic benefits to a developing country, especially with reduce expenditure on health care as well as maintenance of functional capacity of patients to continue work. Development of awake craniotomy in a developing country is a challenge. Multiple hurdles must be overcome before considering the possibility of the procedure. One of the key hurdles is limitation of resources. Others include neuroanesthesia training, extent of disease, and patient selection. Patient's awareness or literacy rate is also a factor to be considered, especially in developing countries where it can be difficult to explain the procedure to the patient. The authors have successfully implemented awake craniotomy in Pakistan recently and have shared how they managed to overcome the hurdles in their case. The hurdles are considerable, but they can be overcome with efforts. The program will be highly beneficial to a developing country and should be attempted for betterment of health-care facilities available to the population.

Keywords: Awake craniotomy, craniotomy under local anesthesia, developing countries

18.23 ROLE OF STEREOTACTIC RADIOSURGERY IN MANAGEMENT OF BRAIN TUMORS: AN EVIDENCE BASED REVIEW

Karim Rizwan Nathani, Saad Akhtar Khan, Muhammad Adeel Samad, Usama Khalid Choudry, Kamran Saeed, Syed Ather Enam
Department of Surgery & Medical College, Aga Khan University and Jinnah Postgraduate Medical Centre

Stereotactic Radiosurgery (SRS) is an advanced method of focused delivery of radiation or particle beam to an intracranial lesion. Unlike the conventional radiotherapy, this procedure allows delivery of harmful radiations precisely to the lesion, sparing the surrounding normal parenchyma from radiation induced damage. Additional benefits include cost effectivity, reduce risk of neurocognitive deterioration and less number of

sessions, making the procedure more convenient for the patient. Studies show SRS offers no benefit over conventional radiotherapy in case of glial tumors. It may offer improved outcomes following external radiotherapy, but the evidence is not strong enough due to lack of prospective randomized control trials. SRS has shown a beneficial role along with Bevacizumab for recurrent high-grade glioma. For non-glial intracranial tumors, SRS is recommended as a primary modality only for vestibular schwannoma in certain cases of elderly or small tumor size. Whole Brain Radiotherapy (WBRT) remains the main adjuvant modality for the treatment of brain metastasis. However, SRS is recommended for limited brain metastasis following WBRT or surgery as it has shown improved outcomes. SRS can also be offered in case of small deep-seated tumors in surgically challenging site. Literature has advocated SRS for residual or recurrent disease in both glial and non-glial brain tumors. Due to lack of strong evidence, the recommendations for SRS are still limited. SRS in retrospective clinical analyses has shown survival benefit to patients; however, prospective randomized clinical trials are still awaited.

Keywords: Stereotactic Radiosurgery, Brain Tumor, Radiotherapy

18.25

MENTAL ROTATION TRAINING AND THREE DIMENSIONAL SOFTWARE APPLICATION IN ADULT LEARNING

Amna Afzal Saeed, Sarosh Madhani, Safia Baig, Zahra Cheema, Zehra Jamil, Sadia Fatima, , , , Department of Biological & Biomedical Sciences and Medical College, Aga Khan University

The theory of Multiple Intelligence fragments the domain of “Intelligence” into several modalities such as linguistic, logical, kinesthetic, spatial, musical, naturalist, interpersonal and intrapersonal. Among these, spatial intelligence refers to the ability to analyze an object in three dimensions and draw conclusions from limited information. This ability to mentally rotate an object in space is termed Mental Rotation (MR) ability. Sixty-seven students voluntarily participated in this study. Thirty students were randomly assigned to receive MR

training while the remaining thirty-seven students served as non-trained controls. Data on effectiveness of training was collected to measured participants’ speed and accuracy in performing various MR activities. Six weeks later, large class format (LCF) session was conducted for all students using 3D software. The usefulness of technology assisted learning at the LCF was evaluated via pre and posttest. Students’ feedback regarding MR training and use of 3D software was acquired through questionnaires. Regarding training, overall scores of the trainees improved from 25.9 ± 4.6 points to 28.1 ± 4.4 ($p=0.011$) while time taken to complete the tasks reduced from 20.9 ± 3.9 to 12.2 ± 4.4 minutes. Males scored higher than females in all components of MR training ($p=0.016$). To explore the effect of MR training on learning outcomes, we analyzed the data of the LCF by paired t test that revealed higher pre and post test scores in the trained group (9.0 ± 1.9 and 12.3 ± 1.6) versus non-trained group (7.8 ± 1.8 ; 10.8 ± 1.8) respectively. Ninety-seven percent students reported technology assisted learning as an effective means of instruction. Likewise, eighty-nine percent agreed that such techniques could assist their learning even during clinical years and can be incorporated into the curriculum. Spatial thinking abilities improve through training that can be used to augment learning outcomes of our students. Software based on three dimensional technologies could be adopted as an effective teaching pedagogy to augment deeper learning.

Keywords: Spatial Intelligence, Mental Rotation, Technology Enhanced Learning

18.27

ISOLATION OF DENTAL PULP DERIVED MESENCHYMAL STEM CELLS (MSCS)

Shagufta Naz, Farhan Raza Khan, Sahreena Salim Lakhundi, Mehwish Saghir Khan, Tashfeen Ahmad Departments of Surgery and Biological & Biomedical Sciences, Aga Khan University

Introduction: Stem cells are found in virtually every tissue and play role in tissue regeneration and maintenance. Mesenchymal stem cells (MSCs) are multipotent, i.e. capable of differentiating into cells of multiple tissue types of their particular lineage.

MSCs of dental origin have been shown in xenograft models to generate mineralized tissue, extracellular matrix, structure type dentin, dental pulp, and periodontal ligament. MSCs from dental pulp of adult teeth are termed as DPSCs while those from spontaneously shed baby teeth are called SHED. We aimed to isolate stromal cells from teeth as a first step of a long term objective of a regenerative medicine approach to restoration of damaged teeth.

Objective: To isolate dental pulp derived stem cells from non-infected extracted human teeth.

Materials & Methods: Twelve samples were obtained including nine adult and three baby teeth. The teeth were disinfected and dental pulps were extracted using sterile technique. They were placed in transport medium and shifted to the cell culture facility in Juma Research Laboratories. MSCs were cultured via outgrowth / explant method in a stem cell defined growth media. Images were captured using Nikon standalone DSL3 camera attached to an Olympus inverted microscope.

Results: Cells emerged from tissue explant exhibit spindle shaped morphology. A monolayer of stromal cells was obtained in 22 to 32 days. The success rate of monolayer formation was 88.88% (8/9) and 66.66% (2/3) for adult and baby teeth respectively. The samples exhibited low proliferative potential at the start of culture. It was observed that first cell appeared in between 5 to 19 days of culture.

Conclusion: Isolation of stromal cells from dental pulp (DP) tissue is a simple and convenient procedure. Morphological and growth characteristics of cells appear to suggest their mesenchymal origin. However, immunophenotypic characterization and in-vitro tri-lineage differentiation will be required to confirm Mesenchymal stem cell like properties.

Keywords: Dental pulp, Tissue Explant, Mesenchymal stem cells

18.28

DPSCS AND SHED CHARACTERIZATION VIA IMMUNOPHENOTYPING AND TRI-LINEAGE DIFFERENTIATION

Shagufta, Farhan Raza Khan, Irfan Khan, Asmat Salim, Tashfeen Ahmad

Department of Surgery, Aga Khan University and Dr. Panjwani Center for Molecular Medicine & Drug Research, International Center for Chemical & Biological Sciences, University of Karachi

Introduction: Perivascular niche of the dental pulp harbors multipotent mesenchymal stem cells (MSCs). Dental pulp stem cells (DPSCs) are the MSCs derived from adult teeth while stem cells from human exfoliated deciduous teeth are termed as SHED. Since there is no single marker to exclusively identify MSCs a combination of different markers are used to characterize them which includes, CD9, CD10, CD13, CD29, CD44, CD59, CD73, CD90, CD105, CD106, CD146, CD166, CD271. Owing to the heterogeneity existing in the MSC population, cells do not express all markers at a time. Furthermore, multipotent DPSCs and SHED are capable of differentiating into different cell lineages including odontoblasts, periodontal ligament, neurons, adipocytes, chondrocytes and osteocyte-like cells, hence the combination of positive markers can vary.

Objective: To characterize previously isolated dental pulp derived mesenchymal stromal cells as DPSCs and SHED. *Materials & Methods:* Dental pulp derived stromal cells from adult and baby teeth were used. Immunocytochemistry for CD29, CD73, CD117, CD44, vimentin, CD43 and CD45 was performed. Flow cytometry was used to assess CD90, CD73, CD105, and CD43. Tri-lineage differentiation was also performed for osteoblasts, adipocytes and chondrocytes. *Results:* Cells were found to be positive for CD29, CD73 and vimentin. Flow cytometry revealed cells positive for CD90, CD73, and CD105 while negative for CD43. Both adult and baby teeth stromal cells were found to exhibit multilineage differentiation potential and formed bone, fat and cartilage like cells in-vitro. *Conclusion:* Together, data seems to suggest that previously isolated stromal cells from adult and baby teeth exhibit MSCs like properties.

Conversely, functional studies will be required for further confirmation.

Keywords: DPSC, SHED, Tri-lineage differentiation

18.29

SHORT TERM OUTCOME OF CARDIOPULMONARY RESUSCITATION AT A TERTIARY CARE CENTER IN PAKISTAN

Sidra Ishaque, Ali Akhtar Nuhrio, Humaira Jurair, Qalab Abbas, Anwar ul Haq
Department: Paediatrics and Child Health, Aga Khan University

Introduction: Cardiopulmonary resuscitation (CPR) is a series of lifesaving actions that improve the chance of survival following cardiac arrest. There is limited data regarding the frequency and outcome of in-hospital pediatric cardiopulmonary resuscitation from developing countries. Aim: To assess the short term outcome of CPR in children at a Tertiary Care Hospital from Pakistan and to compare with previous outcome before implementation of RRT and PALS training program.

Methods: A Prospective record review conducted at the Aga Khan University Hospital, Karachi from July 2012 to June 2013. Children between 1 month to 14 years of age, who developed in hospital cardiac arrest (IHCA) and require CPR, were included in the study. Data collection was reported according to Utstein style. The outcome were sustained return of spontaneous circulation (initial survival) and hospital discharge (final survival)

Results: The obese children were taking four times less sleep when compared with the control group (87.1% and 18.4% respectively). 85% of our cases aged between 5-10 years and 77% of them between 11-16 years of age were sleeping less than ten hours, with the results being statistically significant ($p < 0.000$).

Obese children were sleeping less than their female counterparts (82% males vs. 70% females with lack of sleep), attributing to a higher obesity amongst the male cases.

80% of the females were physically active when compared to only 40% of the male controls.

Conclusions: Our study demonstrated that several risk factors such as junk food consumption, limited

physical exercise at home and high levels of sedentary activities, skipping breakfast and sleep duration less than ten hours are associated with overweight and obesity.

Over the last 30 years, the prevalence of childhood obesity has increased exponentially. Multifaceted strategies involving the public and private health sectors along with community participation are required to gradually reverse this trend.

Public health programs are warranted to increase awareness on these risk factors among children and adolescents in order to reduce the future burden of obesity-associated chronic diseases

Keywords: CPR, IHCA, ROSC

18.30

MANAGING ACUTE TRAUMATIC PAIN IN HIV-INFECTED PATIENTS: KNOWLEDGE AND PRACTICE TRENDS AMONG EMERGENCY PHYSICIANS OF MAJOR TERTIARY CARE HOSPITALS OF KARACHI

Aliya Ahmed, Gauhar Afshan, Robyna Irshad Khan, Badar Afzal, Seemin Jamali, Sarosh Saleem
Departments of Anaesthesiology & Emergency Medicine, Aga Khan University, Jinnah Postgraduate Medical Centre and Indus Hospital

Aim: Pain management in patients infected with human immunodeficiency virus (HIV) is complex because they suffer with concomitant painful conditions. We conducted a survey to assess knowledge and practice trends in managing traumatic pain in HIV-infected patients among emergency physicians of four hospitals. Methods: In this cross-sectional survey emergency physicians were requested to fill a structured questionnaire after obtaining informed consent.

Outcome / Results: Responses to practice-related questions are provided in Table 1, and to knowledge related questions in Table 2. Table 1 Practice Trends Responses Percentage What drugs do you use to treat acute pain? Opioids 16 19.0% NSAID 9 10.7% Paracetamol 7 8.3% Combination 40 47.6% Is pain assessment done for all patients? Yes 61 72.6% No 23 27.4% Are any guidelines available for managing pain? Yes 48 57.1% No 33 39.3% Is multi-modal therapy used for managing pain? Yes 21 25.0% No 11 13.1%

Table 2: Questions related to knowledge Frequency Percentage
What dose of opioid drugs is required to treat pain in these patients? Usual dose 42 50.0%
More than usual dose 23 27.4% Less than usual dose 9 10.7%
Is management of pain more complex in these patients? Yes 42 50.0% No 35 41.7%
Is pain under-reported and under-treated in these patients? Yes 26 31.0% No 51 60.7%
Conclusions: There are considerable gaps in knowledge regarding management of acute traumatic pain among emergency physicians. Guidelines are required for improving pain management in this group of patients and educational sessions need to be arranged for enhancing knowledge.

Keywords: Trauma, Pain management, Emergency physicians

18.31 PERCEPTIONS AND PRACTICES OF EARLY YEARS TEACHERS ABOUT HOW ASSOCIATIVE PLAY SUPPORTS THE COGNITIVE DEVELOPMENT OF CHILDREN (3-4 YEARS)

Aliza Sadruddin
Department for Educational Development

Background In early years of human development, love, care, attention and education are basic needs (Layzer & Goodson, 2006). This education also includes playing as a vital component of their learning. The curriculum for ECD (2007) also stresses upon the importance of play in daily curriculum and co-curricular activities. It is also observed that this process of learning is more effective when children perform associatively. However in this age, number of plays can be well suited for children to learn different concepts. But, associative play has seemed to be contributing greatly in the cognitive development during 3-4 years.

Method This study has explored early childhood teachers' perceptions and practices about associative play as a supporting key for young children's cognitive development during 3-4 years in a private school of Karachi. To carry out the study, qualitative exploratory method was

applied which included in-depth observations of teachers practicing associative play in their own classrooms. Besides, the semi-structured interviews were conducted in order to further explore about what teachers perceive about associative play and its integration in curricular and co-curricular activities. *Analysis* Moreover, both the participants highlighted upon the role of ECD teachers in integrating associative play in their teaching pedagogies which might lead towards the efficacy in student learning outcomes. However, it is important to plan such activities in which associative play can cater the cognitive benefits of early years children (3-4 years).

Results The findings suggest that playing with peers enabled children learn more effectively and contributed in their different domains of cognitive development including their language skills, their imagination and their problem solving ability. Further, the study also encouraged the early years teachers role on recognising the significance and promoting associative play as a part of teaching learning process.

Conclusion Thus this study suggests novice teachers to be trained well in order to escort the process of play and teaching more efficiently.

Keywords: Cognitive Development, Associative Play, Pre-school Children

18.32 ANESTHESIA MANAGEMENT OF AN ELDERLY PATIENT WITH MITOCHONDRIAL MYOPATHY: A CASE REPORT

Tanveer Baig, Hafiza Mehreen Durrani
Departments of Paediatrics & Child Health and Anaesthesiology, Aga Khan University

Introduction: Mitochondrial disease, once thought to be a rare clinical entity, is now recognized as an important cause of a wide range of neurologic, cardiac, muscle, and endocrine disorders. Kearns Sayre syndrome is a rare mitochondrial disease involving deletion of mitochondrial DNA. The specter of possible delayed complications in patients caused by inhibition of metabolism by anesthetics, by remaining in a biochemically stressed state such as fasting/catabolism, or by prolonged exposure to pain is a constant worry to

physicians caring for these patients. As these patient may underwent any surgical procedures the best anesthesia options is a main consideration for an anesthetist to avoid any complication due to anesthetic drugs. Herein we report a case of anesthesia management in an elderly patient diagnosed with mitochondrial myopathy.

Case Description: A 67 year old female patient admitted in gynecology ward of Aga Khan University Hospital with diagnosis of procedencia was planned for elective vaginal hysterectomy. She had a past history of progressive muscle weakness especially of extra ocular muscles beginning in adulthood and involving proximal muscles of both upper and lower limbs, and she was classified as functional class 3. Her ECG and other workup were unremarkable. Keeping in view that general anesthetics usually act on mitochondria we opt regional anesthesia for this case with Bupivacaine 8mg and 25ug fentanyl and avoided giving neuromuscular blockers. The procedure went uneventfully except for an initial drop in blood pressure to more than 20% for which ephedrine in titrated doses was given. Patient was monitored postoperatively in post anesthetic care unit, she remained vitally stable and no adverse event reported. *Conclusion:* Keeping in mind the literature review of the choice of anesthesia consideration in patient with mitochondrial myopathies we decided to opt for spinal anesthesia and it was found to be safer choice.

Keywords: mitochondrial myopathy, anesthesia, management

18.35 TEACHERS' PERSPECTIVE OF PLAY IN EARLY CHILDHOOD EDUCATION (ECE) SETTING

Salima Al Nassar Surani
Institute for Early Childhood Education

Play is an important experience for children. Developmental theorists Piaget and Vygotsky provide frameworks for considering the cognitive implications of play for development. Although teachers seem to acknowledge the role of play in child development, they seem unsure of how to

utilize play in an instructional manner. The purpose of this research paper was to explore Early Childhood Education (ECE) teachers' understanding of Play evident from their own reflections and practices with young children. Using a qualitative case study approach data were generated from ECE teachers and Students through semi-structured interviews, observations and document analysis. The study indicated that the teachers' personal experiences greatly influence their perceptions regarding play. Despite realizing the importance of play, teachers were unable to integrate play in curriculum. There was also evidence that teachers had different expectations from boys and girls regarding play. Similarly children also brought certain perceptions from home which contributed to the gender discourse in the context of play. Hence teachers were found promoting stereotypes regarding gender roles among young children. The findings emphasize the need to sensitize teachers, schools and policy makers to treat play as a direct component of curriculum and avoid gender stereotyping in play based spaces and practices.

Keywords: gender, Play, Early Years

18.36 EVALUATION OF TWO DIFFERENT IMAGE VERIFICATION SYSTEM IN RADIOTHERAPY AT AKUH

Shakeel, Shoaib Siddique, Asad Yousuf
Department of Oncology, Aga Khan University

Introduction: In Radiation Oncology patient treatment setup verification is an essential component. In our section, Imaging Plates (IP) Cassette and Electronic Portal Imaging Device EPID were used to take Portal Images for setup verification in LINAC 1 and LINAC 2 respectively. The images analyzed online on a computer before the treatment by Radiotherapist RTT if there is a need, setup adjustment they retake the image & treat after verification. Later review by Radiation Oncologist RO. If there is a need for any changes in setup, the doctor left the comment on the image and request RTT to adjust setup retake the image on next day.

Objective: The aim of our study was to analyze inter-observer agreement among Radiation oncologists and RTT in the evaluation of two different Systems i.e. IP and EPID.

Materials and Method: IP and EPID data of 4 weeks for 40 patients were independently reviewed, displacement of each IP & EDIP images with respect to the digitally reconstructed radiographs (DRRs) was quantified using the manual registration based system on bony landmarks with the corresponding DRRs.

Results: The analysis shows RO and Therapist in agreement in 76.9% for IP cassettes and 79% in agreement for EPID i.e no adjustment required. Whereas in 23% and 21 % cases doctor asks for the setup adjustment retake of images.

Conclusion: Our study shows that there is no immense difference b/w the two image verification system. Both the systems are capable of producing quality images and allow the user to verify the setup before treatment delivery.

Keywords: Imaging, Setup Verification, IP & EPID

18.37

AUDIT TO REVIEW THE QUALITY OF CT REPORTING IN SUSPECTED APPENDICITIS

*Abdul Rehman, Dr Raza Sayani, Iqra Sultana, Jamila Baig, Saeeda Urooj
Department of Clinical Imaging, Aga Khan University*

Introduction: Acute appendicitis is the most common surgical emergency and accounts for one-third of adult patients presenting to A&E with an acute abdomen. CT imaging has high positive predictive value for acute appendicitis and its inclusion in the diagnostic workup in difficult cases has reduced the negative appendectomy rate significantly, either by confirming/refuting the diagnosis and/or suggesting alternative diagnoses. The degree of clinicopathological correlation between the pre-appendectomy CT report and the post-appendectomy histopathology reports should be sufficient. The number of removed appendices that are histologically normal should be acceptably low as per RCR guidelines. **Objective :** Objective of this study is to assess local practice by reviewing

our data of CT and histopathology reports **Material and Method:** All CT done for the purpose of right iliac fossa pain from January 2017 to September 2017 were included. The positive cases of acute appendicitis on CT were reviewed for their histopathologies. **Results:** A total of 254 cases were referred with right iliac fossa pain. 105 cases showed acute appendicitis on CT scan and these were confirmed on histopathology. 3 cases didn't have histopathologies as they were discharged on patients wish. Rest of the cases were evaluated for causes other than appendicitis **Conclusion:** Our reporting rate is well within the guidelines of RCR with positive predictive value of 100%. RCR recommend that the negative appendectomy rate should be

Keywords: CT Reporting, Histopathology, Appendicitis

18.38

WHERE RADIOGRAPHERS FEAR TO TREAD: AN EVALUATION OF PREFERENCES TO WORK IN GENERAL RADIOGRAPHY SUBSECTIONS

*Shahneela Mehmood, Dr Raza Sayani, Haiyder Ali
Department of Biological and Biomedical Sciences,
Aga Khan University*

Background General radiography, known to most people as x-ray, is the oldest and most frequently used form of medical imaging. For over a century, x-rays have been the most basic requirement of the physicians in diagnosis and treatment of patients. General radiography covers a wide range of subsections which include x-rays and fluoroscopy. We reviewed the preference of work with respect to radiography area as per their knowledge, skill and willingness to work which varies among radiographers.

Objective: The aim of this audit is to identify which section radiographers is comfortable working in, reasons for hesitation in working in a particular section and explore ways to curb their reluctance. **Method** A questionnaire was designed to evaluate the proficiency of 40 radiographers working in general radiography section. While performing duties in different sections of general radiography,

they were asked to rate their preferences to be rotated in different sections and their opinions were assessed using likert scale. Result 90% of the radiographers were satisfied working in x-ray department, while they were least interested in being rotated in fluoroscopy section. It was also observed that they were more comfortable in going to operating rooms to provide c-arm coverage than to perform portable x-rays in ward and emergency room. 71% of the radiographers did not respond to radiation protection section of the questionnaire satisfactorily while 83% were unsatisfactory in answering the infection control portion of the questionnaire.

Conclusion There is a tendency among radiographers to perform x-rays within the general radiography section rather to work in fluoroscopy section or to go to different wards and emergency rooms to provide portable services. We will share suggestions to curb their reluctance .

Keywords: radiographer, radiology, satisfaction

18.39

WORKSHOP FOR PEER LEADER SELECTION: A STEPPING STONE FOR PEER ASSISTED LEARNING MODEL

Hasan Salman Siddiqi, Rehana Rehman, Faiza Alam

Department: Biological and Biomedical Sciences

Introduction: To develop experiential learning model for teaching of basic sciences with assistance from peers. *Methods:* Description about Peer Assisted learning (PAL); process of recruitment of Peer Leaders (PLs), aims and objectives and phases of model development was presented to the whole Year I MBBS class. For selection of PLs, we considered fourteen consented students, who submitted an online application along with a written paragraph as a prerequisite for their inclusion. We also obtained permission from the curriculum as well as got the desk records of the students in form of percentage in previous teaching module. A training workshop was organized for all the consented students where after pretest and initial orientation, they were divided into two groups; A and B. Facilitators taught concepts of Physiology

practical to PLs of Group A and of Pharmacology practical to PLs of Group B respectively. Then PLs of Group A taught PLs of Group B and vice versa with shuffling of students.

Results: The workshop was attended by all 14 students. The knowledge of students related to Physiology and Pharmacology core concepts was improved at the end of the workshop as was evident by a significant difference (p

Keywords: Assisted Peer Learning, Peer leader selection, training workshop

18.40

EFFECT OF FOCAL SPOT SIZE ON RADIOLOGIC IMAGE QUALITY

Shahneela Mehmood, Dr Raza Sayani, Danial Haider, Zahid Ali, Maryum Siddiqui
Department of Clinical Imaging, Aga Khan University

Introduction: Focal spot is the area of anode surface which receive the beam of electrons from cathode. For medical imaging, two focal spots are commonly used in x ray tube 0.6mm & 1.2mm, small focal spot size allows low mA & small penumbra as compared to broad focal spot. As focal spot sizes increase mA & penumbra also increase. For small area of interest small focal spot is used which gives sharp & detailed image than large focal spot. We observe different types of projections in which both focal spots are used in same view to evaluate if there is a significant difference while assessing the images clinically.

Material & Method: Some technical parameters are observed for differentiate the detail of radiographs.eg: KVP, mAs, collimation and film to focus distance (FFD). For clarification, definitions of some focal spot terms are given below. •

• Effective focal spot: the projected focal spot size as seen from the patient. • Nominal focal spot: the effective focal spot size as stated by the manufacture. • Actual focal spot: the effective focal spot size. Four projections were chosen for this audit, twenty images were produce for each category with fine & broad focus whereas exposure parameters & positioning were constant for each projection.

Result: By observing images on both focal spots seems no difference respectively, using Mann-Whitney U test, no statistically significant difference between fine and broad focus. The maximum possible image score for the ankle, knee, thoracic spine, & lumbosacral spine projection were 25, 50, 30, and 50 respectively. No statistically significant difference between fine & broad focus were noted for total scores. **Discussion:** In an x-ray tube 2 focal spot sizes are available it depends on a radiographer which one is used for study. Generally it is believed that fine focus is used for small body parts, like extremities so that it will give more detailed image, while broad focus spot are used for making larger exposure & covering larger area which requires greater tube loading, so that heat is dispersed over a greater area of the anode. **Conclusion:** This study demonstrates that the impact of focal spot size choice for number of examination types is limited. However, the advantages of fine focus in terms of lower manufacturing cost reducing customer services & replacement expenses & the ability to set shorter times to minimize movement cannot be dismissed.

Keywords: focal spot, image quality, penumbra

18.41 USAGE OF COMPUTED TOMOGRAPHY PULMONARY ANGIOGRAPHY (CTPA) INVESTIGATION OF SUSPECTED PULMONARY EMBOLISM

Ownais farooque, Raza sayani, Iqra sultana
Department of Clinical Imaging, Aga Khan
University

Abstract CT pulmonary angiogram (CTPA) is a medical diagnostic test that employs computed tomography to obtain an image of the pulmonary arteries. CTPA as the primary imaging technique for assessment of suspected pulmonary embolism (PE). It is a preferred choice of imaging in the diagnosis of PE due to its minimally invasive nature for the patient, whose only requirement for the scan is an intravenous line. **Objective:** The aim of study is to assess, when being used as the primary imaging investigation, whether CTPA is being used appropriately and also to look at the diagnostic yield

of CTPA scans in terms of pulmonary emboli and alternative diagnose.

Material and Methods: We reviewed 100 CT scans performed for the suspicion of pulmonary embolism. We review how many had positive reports and in how many of them alternate diagnosis was seen to explain the patient's symptoms. **Result:** Out of 100 CT Scans which were performed with the indication of pulmonary embolism 30% were positive for PE. 70% were negative for PE but alternate diagnosis was seen in significant number. **Conclusion** Our results are well within the guidelines of RCR for pulmonary embolism reporting and indication which should be above 15% of all cases..

Keywords: pulmonary embolism, pulmonary angiogram, invasive nature

18.42 AUDIT TO REVIEW LATERAL (SHOOT THROUGH) VIEW OF CERVICAL SPINE OF TRAUMA PATIENT

Baseerat wasim, Dr Raza sayani, Mahnoor akther,
Gohar Ahmed, Hina Basharat
Department of Clinical Imaging, Aga Khan
University

Abstract Introduction: Cervical spine is the main component of trauma series examination due to its criticality. Proper imaging is important for its correct interpretation and it is the major responsibility of radiographer. Patients in such cases must get identified on urgent basis, and their C-spine radiograph must be interpreted on accurate and quick basis and it must be readable. This approach incorporates precise successive regard for alignment, cartilaginous structures, bony integrity and the encompassing soft tissue spaces.

Objective: This research is conducted in order to find out whether the proper imaging is performed as per international guideline or not. **Material and methods** Lateral Cervical Spine radiographs of 100 trauma patients that came in Emergency during 3 months were reviewed and analyzed for visualization of the C7 – T1 junction and C7 vertebral body **Results:** The trauma patients include the case of fall, gunshot injury and RTA (Road Traffic Accident). Out of 100 patients, 60%

patient's radiographs were in accordance to the International Rules whereas the remaining 40% were against the International Rules.

Conclusion: It is recommended that all the patients at risk for Cervical Spine Injuries must have precise and legible radiographic examination of the cervical spine.

Keywords: Trauma, Cervical spine, trauma patient

18.43

VITAMIN B12, FOLIC ACID AND MMA : SPERM PARAMETERS AND FERTILITY

Rehana Rehman, Mussarat Ashraf, Hemaaila Tariq, Muddassir Ali Aftab, Daniyal Aamir
Department of Biological & Biomedical Sciences and Medical College, Aga Khan University

Objective: To study the impact of Vitamin B12, folic acid (FA) and methyl malonic acid (MMA) on sperm parameters. *Methods:* In a cross sectional study of one hundred and seventy six males blood samples were collected, serum was separated, centrifuged and stored for analysis. Vitamin B12, FA and MMA levels in serum were analyzed by enzyme linked immune sorbent assay by commercially available kits. Samples were categorized according to sperm parameters into normozoospermic, teratozoospermic, azospermic; sever oligo astheno teratozoospermic (S.O.A.T) and asthenoteratozoospermic. Statistical analysis was done by using ANOVA, Mann Whitney, Spearman's rank correlation; all p-values less than 0.05 were considered statistically significant.

Results: The total number of male patients recruited in the study was 176. Out of which 38(22%) were normozoospermic, 46 (26%) were teratozoospermic, 20 (11%) were azospermic, 40 (23%) had S.O.A.T and 32(18%) had azethoteratozoospermia. The differences in VitB12, FA and MMA in infertile males with normal and abnormal sperm parameters, showed no significant difference in Vitamin B12 levels however, folic acid and MMA were low in males with abnormal sperm parameters

Keywords: Vitamin B12, Folic acid, Methyl malonic acid

18.44

AN AUDIT OF PRO FORMA FILLED PRIOR TO MAMMOGRAPHY IN TERTIARY CARE HOSPITAL

Saeeda Urooj, Gulnaz Shafqat, Raza Sayani, Zareen Khan

Department of Clinical Imaging, Aga Khan University

Worldwide breast cancer poses a major health risk for women. Being the most common cancer among female it is estimated that over 1.38 million women suffer from breast cancer according to the 2008 GLOBOCAN of WHO In Asia, Pakistan has the highest rate of breast cancer. Several researches and studies have been done to evaluate the causes risk factors associated with breast cancer. A risk factor is anything that affects your chance of getting a disease, such as cancer. Multiple risk factor have been found to be associated with breast cancer. *Objective:* purpose of the study is to assess the association of breast malignancy with risk factors. *Methodology:* Retrospective data were used to investigate risk factors in patient during the period of January to September 2017. The data was analyzed by reviewing the mammogram screening form, ultrasound and biopsy reports of breast cancer diagnosed patients. Patients included in this research have biopsy proven malignancy. Number of risk factors involved in this study are age, gender, family history, having children or not, heterogeneity dense breast, menstrual history, previous treatment i.e. birth control pills or any kind of hormonal treatment. By analyzing the retrieved data, major and minor risk factors were appraised. *Result:* 100 patients were observed among which 24% were found normal, 46 have some benign findings 30% of the patients had malignant disease. The mean age calculated for malignant lesion is 40 and median age is 50. 96% of the females had children. Use of birth control pills was found negative in all. Two patients had history of hormonal treatment. 93.3% of the females have no family history of breast cancer.

Conclusion: Our local data in this limited series shows younger age group of patient with different risk factors as described

Keywords: breast cancer, mammography, Risk factors

18.45 RAPID DEMOGRAPHIC CHANGE IN A NORTHERN PAKISTANI VILLAGE FROM 1989 TO 2012: A PROSPECTIVE STUDY

Ejaz Hussain, Syed Iqbal Azam, Nahida Bano, Wasiat Hasan Shah, Saba Wasim, Khalil Ahmed, Zeba A. Rasmussen
Department of Community Health Sciences, Aga Khan University, Fogarty International Center, National Institutes of Health, USA and Karakoram International University, Gilgit, Pakistan

Objective: The study aims to describe the demographic changes that occurred between 1989-1996 and 2011-2014 in Oshikhandass village 20 km from the capital of Gilgit.

Introduction: Since the 1980s, Pakistan has seen significant demographic change due to changing birth and death rates and migration. This longitudinal study in north Pakistan, which has seen interventions in health care, water and sanitation, and economic development, describes a microcosm of these changes.

Methods: Study protocols were approved by the AKU Ethical Review Committees (ERC) KIU ERCs, and US NICHD IRB. All participants gave informed consent. The same professional mapped all households in Oshikhandass in 1989 and 2011. Female health workers generated a list of individuals. Births, and deaths of children under 5 years were determined through weekly visits.

Results: The total population of Oshikhandass in 1989 was 3623, with a retrospectively determined infant mortality rate of 160/1000 live births. Prospectively determined population increased to 4998 in 1996 due to ongoing high birth rates (30-46 live births/1000 population) and low death rates (4-9/1000 population), along with in-migration. In 1989, children <5 comprised 18% of the total population. Infant mortality decreased from 46/1000 LB in 1990 to 29 in 1996, and U5MR from 54 to 28 deaths/1000 LB. In late 2011, the population had increased to 7213 households; 922 children were under age 5, only 13% of the population. There had been significant in-migration since 1996, including 1506 people in 186 households.

Conclusion: The population in Oshikhandass village doubled from 1989 to 2011, due to high birth rates and declining infant and child mortality rates, as well as significant in-migration from more remote areas, perhaps due to better job and educational opportunities near the administrative capital of Gilgit. The percentage of children under 5 declined significantly

Keywords: Demographic change, Gilgit-Baltistan, U5MR

18.46 ANALYSIS OF THE REJECTION RATE OF CHEST RADIOGRAPHS

Iqra Sultana, Dr Raza Sayani, zahid Ali, Abdul Rehman, ownais farooque
Department of Clinical Imaging, Aga Khan University

Aims: To evaluate the rejection rate of chest x-rays and determine the factors affecting the x-rays to be repeated or retaken. Reject analysis has been performed to use as a quality index of radiology services. The term 'reject' describe as images or radiographs acquiring by the radiographer are unacceptable or not completing the criteria of preferred exam and are needed to be repeated. Radiographer must have entered a reason for repetition of the exam before retaking the image.
Material and Methods: Data was collected from CR (computed radiography) images and DR (digital radiography) images of chest x-rays from past one month. List of information was compiled relevant to the rejection and repeat. Reason listed below was recorded of repetition. 1. Medical record number 2. Date of exam 3. Number of repeats 4. Reason of repeat 5. Were automatic exposure controllers used? 6. Age of patient 7. Interdepartmental or portable 8. Radiograph obtained was on CR/DR. A radiograph record was comprised of image-centric information including the CR device identifier (ID), part of body, position of view, Technologist mnemonic, exposure information, and If the radiograph was rejected then the reason for rejection of image.
Results: Total 5,000 chest x-rays has charged in a month, total 5,000 cxr were reviewed which includes in-department as well as portable cxr. Out of which 1.52% cxr were rejected and retaken due

to anatomy cut off, 0.78% were due to poor breathing, 0.38% were due to positional fault, 0.1% were due to artifact, 0.3% were due to wrong side marker, 0.14% were due to anatomical rotation, 0.36% were due to exposure issues.

Conclusions: The repeat chest x-ray rate is 3.34% and it is in accordance with the international data.

Keywords: Rejection, Chest Radiographs, Rate

18.48 QUALITY OF SLEEP IN REGULAR USERS OF SMARTPHONE: A SURVEY OF UNDERGRADUATE STUDENTS IN KARACHI

*Zainab Hasan, Mehak Usman Khan, Saba Iqbal,
Kanchan Samtani, Sidra Asif, Haneen Imran,
Bushra Rashid
Jinnah Medical & Dental College*

Objective: Optimum sleep quality and quantity is an emerging risk factor for morbidity, mortality and quality of life. Use of smartphone among young adults is rapidly increasing in Pakistan. This study was conducted to determine the quality of sleep in undergraduate students who own and regularly use a smartphone.

Methods: A cross sectional survey of 500 undergraduate students was conducted in July to September 2017. Sleep quality was assessed using Pittsburgh Sleep Quality Index. A structured questionnaire was used to determine smartphone usage pattern. Data was analyzed using SPSS 21.0. *Results:* A total of 481 questionnaires were included in analysis of which 72.6% (n=349) were females, 26% (n= 125) were males and mean age was 21± 2.5 years. Students admitting they felt addicted to their smartphone were 54.8% (n= 264) with 52.5 % (n= 253) using it > 5 hours in a typical day. Additionally 86.7% (n=417) reported using their device at night time (8 pm to 8 am) and 62.7 % (n=306) agreed they could improve their quality of sleep by decreasing phone use however only 43. 2% (n= 208) were willing to do so. About 53.6% (n=258) used other electronic devices at the same time of which laptop was most frequently used 43.2% (n=208). Sleep quality was found to be poor (index >5) in 70.9% (n =341) students with a median index of 6. Of those who used smartphone at night time, 91.5% (n=312) students had poor

sleep quality. Using chi square test at 95% confidence level, association between night time use and poor sleep quality was highly significant (p

Keywords: Sleep, smartphone, PSQI

18.49 ADIPOKINE PROFILE IN HYPERTROPHIC BREASTS

*Quratulain F. Masood, Sara Habib, MD, Deepak Narayan, MD
Department of Surgery, Yale University of Medicine, West Haven, CT and Thomas Jefferson University, Philadelphia, PA*

Background: The aim of the study was to reveal the pattern of adipokine production in normal versus hypertrophic breast tissue, using protein micro arrays. The hypothesis proposed was a differential expression of adipokines in normal verses hypertrophic breast tissue.

Material and Methods: Twenty one surgical breast tissue samples were taken and frozen immediately after excision. Two samples were taken from normal female breasts and one from a normal male breast. Fifteen samples from macro mastic, and three samples from gynaecomastic breasts, were taken during various breast reduction procedures. The proteins in the surgical tissue samples were extracted and analyzed using protein micro arrays. *RESULTS:* Protein assays from representative samples showed striking similarities. The expression of protein molecules in macromastic and gynaecomastic breasts, when compared to normal female and male representative assays, showed similar results. *Conclusion:* Adipose tissue and capillary endothelial tissues have an active interplay of paracrine and autocrine dynamics. Adipose tissue development requires constant vascular remodeling and multiple angiogenic molecules produced in adipose tissue may contribute to the complex regulation of adipogenesis.

Keywords: adipokines, hypertrophic breast, protein micro arrays

18.50
PRE-OPERATIVE DESIGNING OF
ABDOMINAL FLAPS TO RECONSTRUCT
AESTHETIC BREAST MOUND

*Quratulain F. Masood, Sara Habib, Syed Y Mehdi
FRCPS, M. Allabban, R.J. Morris, Qayyum, H
Department of Surgery, Derriford Hospital,
Plymouth, United Kingdom and Thomas Jefferson
University, Philadelphia, PA*

Background: Most techniques of breast reconstruction require tedious amounts of sculpturing during surgery which adds to an already prolonged intra op anesthetic time. Multiple techniques are often required to gain symmetry, necessitating surgery to a contralateral normal breast. The goals of breast reconstruction technique proposed aims to achieve adequate volume, shape and symmetry compared to the contralateral breast. Our suggested template offers surgically superior and reproducible outcomes as opposed to available procedures.

Material and Methods: The technique entails measuring the dimensions of the contralateral normal breast. Maneuvering these measurements to design a paper template to plan incision, which is then used to mark the desired flap on the abdomen. Thus the planning of the flap is entirely preoperative. The length and orientation of the scar is initially rearranged onto the contralateral breast. Three vertical and horizontal measurements each are further divided into medial and lateral components. Bilateral cases assess available abdomen, the length and orientation of mastectomy scars and employ a similar pattern based on the scar lengths.

Results: Twenty five breasts were reconstructed by the same surgeon using this technique of preoperative marking in the last 4 years. Amongst these twenty were unilateral cases and five bilateral, all with aesthetically appreciable results.

Conclusion: No technique is without limitations. Post-operative breast volume is dependent upon the planned skin area of the abdomen and doesn't take into account the thickness of the subcutaneous fat. No surgically operated breast was under filled. The advantages of using our technique include reduced operating time, symmetrical breasts, superior aesthetic results and no surgical revisions.

Keywords: Abdominal Flaps, Breast surgery, aesthetic breast mound

18.51
REPAIR OF THE CENTRAL SLIP OF
EXTENSOR TENDON AND THE OPEN
MALLET USING MITEK MINI BONE
ANCHORS

*Syed Y Mehdi, Quratulain F. Masood, Hamza
Qayyum, D. Lawlor, P.A. Eadie
Department of Surgery, Aga Khan University and
St. Jame's Hospital, Dublin, Ireland*

Objective: The objective of this study was to describe our technique of using Mitek bone anchors to repair open mallet and open central slip avulsion injuries, hence evaluating their post-operative outcomes.

Methods: Four patients with open mallet injury and ten patients with open central slip avulsions; were treated using the Mitek mini bone anchors. In each case, the extensor tendon was shaved off its point of insertion on the middle or distal phalanx. All patients were operated within two days of the open injury without any conservative measures preoperatively. Post-operatively, the joint was maintained in an extension with a single trans-articular Kirschner wire or splint for two weeks, followed by gradual mobilization, active and passive exercises. Each patient underwent an objective evaluation to assess joint stability, the joint's range of motion and grip strength compared to the uninjured side. Patient also underwent a subjective evaluation at the end of the follow-up period.

Results: The operative procedure was successful in all patients but one. One patient needed a relook procedure. Two patients were lost to follow-up, while the rest were followed up for a mean duration of 11 months (Range = 5-24 months). Subjectively, two patients had excellent results, seven had good results, two had fair and one achieved poor results.

Conclusion: Mitek bone anchor is a useful tool to treat open extensor tendon injuries, especially ones where the tendon has been shaved off at its insertion on the bone.

Keywords: Mitek, avulsion injuries, open mallet injury

18.52

OTOPLASTY USING AN ANATOMICAL LANDMARK

Quratulain F. Masood, Syed Y. Mehdi, Hafiza Mehreen Durrani, Sara Habib, National University of science and technology, Pakistan, Royal victoria infirmary, Department of pediatrics and child health, Aga Khan University, Thomas Jefferson university .USA

Background: Prominent ears is a congenital deformity that has cosmetic implications. Otoplasty is a surgical procedure with several approaches discussed in the researched literature. Surgical correction of prominent ears has been conducted since the 19th century with many worthy techniques. The ceaseless refinement of such techniques has led to the development of several procedures each with its own set of advantages and disadvantages. We propose a technique that involves an incision along an anatomical landmark called Concho-helical groove, producing surgically superior post-operative outcomes.

Materials and Methods: 15 patients at Royal Victoria Infirmary were operated on by the same plastic surgeon. Consent was taken for all patients before and after the procedure for follow up of results. A Retrospective collection of Cases from January 2003 to December 2003 was done in which the conch helical groove was used as an anatomical landmark. Post-surgical progress was followed for 3 months.

Results: Post-operative outcomes were exceptional with no scar hypertrophy or revisions. Patient satisfaction was appreciable. Except for one patient who developed a surgical wound infection there were no post-op complications recorded.

Conclusion: The approach described here offers consistent results with least scarring. The only limitation being that the identification of the Concho-helical groove as described by the author might be challenging for the inexperienced eye.

Keywords: Otoplasty, prominent ears, congenital

18.53

ASSESSMENT OF GENERAL PERCEPTION REGARDING THE ROLE OF PHARMACISTS FROM RESEARCH TO HEALTHCARE. AN IGNORE PARADIGM IN DEVELOPING COUNTRY

Feroza Perveen, Naveera jabeen, Joham Mansoor, Maria Salahuddin, Amna Mujeeb, Ambreen Mughal, Farhat Zaheer, M Robin Riaz, Department of Pharmacy, Aga Khan University

Introduction: The involvement of pharmacists as allied healthcare professionals is not limited to dispensation of medications. It is a broad sector of service, much unrecognized and unacknowledged. This study was conducted to assess the general perception of other health care professionals regarding the actual involvement and role of pharmacist from research to healthcare.

Objective: The aim of the study was to assess the knowledge of health care professionals of different disciplines regarding the actual involvement and role of pharmacists from research to healthcare.

Methodology: This was a cross-sectional survey study. Survey was conducted on World Pharmacists Day 25th September 2017 at Aga Khan University Hospital, Karachi to assess the awareness about the pharmacy profession and the role of pharmacist in a hospital. Questionnaire based survey was designed to cover different important aspects of the pharmacist and his role. Total 120 survey forms were filled up by different health care professionals.

Result: Based on the 120 surveys, 92.5% Professionals believed that pharmacists are experts in matters related to drugs. 100% of the population accepted that the world pharmacist's day events should be conducted to increase the awareness. 85% believed that pharmacists can inform about more cost effective alternatives to the drugs prescribed. 95% agreed that involvement of pharmacists in research can enhance patient safety.

Conclusion: In this fast-paced world, allied healthcare professionals are integral to the better outcomes of patient. Pharmacists can perform better than they are performing now if they are duly acknowledged and accepted in health care decisions.

Keywords: Pharmacists, Research, Health care professionals

18.54

FREQUENCY OF UNCONTROLLED HYPERTENSION WITH NSAIDS USE IN HYPERTENSIVE PATIENTS ADMITTED TO TERTIARY CARE CENTRE

*Tabish Chughtai, Aysha Almas
Department of Medicine, Aga Khan University,
Karachi*

Introduction: Hypertension is the most common cardiovascular disease in Pakistan, affecting one in three individuals over the age of 45 years. Only 3% of the hypertensive population in Pakistan is adequately controlled.

A variety of therapeutic agents or chemical substances can induce either a transient or persistent increase in blood pressure, or interfere with the blood pressure-lowering effects of antihypertensive drugs. Non-steroidal antihypertensive drugs (NSAIDs) are one of them. NSAIDs are widely used drugs valued for their anti-inflammatory, analgesic and antipyretic properties. The aim of this study was to determine the frequency of uncontrolled hypertension in patients taking NSAIDs.

Material and Methods: Approval was taken from the hospital's ethical review committee. All patients admitted to the hospital age 18 – 65 years and known hypertensive for at least 3 years with NSAID use for at least 2 days were included in the study. The patient's blood pressure measurements were recorded every 4 hourly for 2 days and if any of the measurements were above 140/80 mm Hg, that patient was taken as positive for NSAID induced hypertension.

Results: A total of 150 patients with hypertension for at least 3 years were included in this study. There were 53(35.3%) male and 97(64.67%) female. There were 4(2.67%) CKD patients and 67(44.97%) had diabetic mellitus. Frequency of patients with uncontrolled hypertension who were on NSAID was 62.67% (94/150). Stratification was performed and observed that rate of uncontrolled HTN was not statistically significant among groups (p=0.54). Similarly rate of hypertension was not significantly associated between gender, CKD,

diabetic mellitus, duration of hypertension and number of anti-hypertensive drugs.

Conclusion: Patients on NSAIDS are more likely to develop uncontrolled hypertension, however these results require further confirmation.

Keywords: NSAIDS, hypertension, blood pressure

18.55

THE HEAT EPIDEMIC IN KARACHI IN JUNE 2015, REPORT FROM TERTIARY CARE CENTER

*Saima Kanwal, Aysha Almas, Noreen Nasir, Sara Sajid, Syed Ahsan, Fazlur Rehman
Department of Medicine, Aga Khan University*

Background: Heat stroke results from exposure to a high environmental temperature (in which case it is called classic, or nonexertional, heat stroke) or from strenuous exercise (in which case it is called exertional heat stroke). In 2015, Karachi saw its first ever epidemic of heat related illness. We conducted a study to describe the demographic and clinical characteristics, outcome of patients presenting with heat related illness.

Methods: It was a descriptive case series conducted in the department of Medicine, Aga Khan University in June 2015. All patients age of > 18 years (including both genders) admitted with heat related illnesses (Heat stroke, exhaustion, syncope, cramps) were included. Heat stroke and Heat syncope were classified as severe heat related illness and heat exhaustion and heat cramps were classified as not severe heat related illness.

Results: A total of 134 patients with heat related illness were admitted during the study period. Mean age (SD) was 66.3(14.5) and 76(56.7%) were males. In area of residence, 28(20.9) lived in apartment and were distributed in the 6 districts of Karachi. In prominent clinical presentations, 85(63.4) presented with altered mental status, 104(77.6) with fever, 43(32.1) presented with muscle cramps. Haemodynamic parameters indicate mean(SD) SBP 129(28), DBP 72(15), Pulse 98(24) Temperature of 37.6(1.1) and Respiratory rate of 24(6.6) In heat related illness; 86(64.2) had Heat Stroke, 4(3) had heat syncope, 48(35.8) had heat exhaustion and 4(3) had

heat cramps. Overall mortality was 5(3.7%). Complications were as follows ;73(54.5) had Acute kidney injury,96(72%) had electrolyte imbalance and 6(4.5) had acute liver failure

On comparing the severe heat related illness with Not severe heat related illness altered mental status was present in 81(60.4%) v 4(3%) patients (p value <0.001),complications were present in 80(59.7) v 28(20.9) patients (p value < 0.001) and respiratory rate was 25(7) v 22(4.8) (p value 0.02).All deaths (n =5) occurred in severe heat related illness group.

Conclusion: Severe heat related illness including Heat stroke and syncope was prevalent in geriatric patients and most patients presented from densely populated close proximity districts.

18.56

TO DETERMINE THE PREVALENCE OF FACTORS LEADING TO ACUTE KIDNEY INJURY IN PATIENTS PRESENTING AT TERTIARY CARE HOSPITAL

Ainan Arshad

Department of Medicine, Aga Khan University

Background: Acute kidney injury (AKI) is associated with high mortality rates. The primary causes of AKI include ischemia, hypoxia or nephrotoxicity. It is estimated that 15% of adults admitted to hospital in developed countries develop AKI. Previous western reviews of the causes of ARF showed that approximately 60% were related to surgery or extensive trauma, 30% in a medical setting and 10% were secondary to complications of pregnancy.

Objective: The rationale of this study is to determine the prevalence of factors leading to AKI, in order to establish the local perspective as there is paucity of local data. There is a need of a comprehensive study to ascertain the prevalence of factors as it is a significant problem to reduce ARF related morbidity and mortality.

Methods: Data was prospectively collected from patients after taking a verbal consent. 133 patients who met the diagnostic criteria were included. Quantitative data was presented as simple descriptive statistics giving mean and standard deviation and qualitative variables was presented as frequency and percentages. Effect modifiers were

controlled through stratification to see the effect of these on the outcome variable. Post stratification chi square test was applied taking p-value of ≤ 0.05 as significant.

Results: A total of 133 patients admitted in Department of Medicine, Aga Khan Hospital, Karachi were included in this study. Mean age in our study was 42.38 ± 7.89 years. 79 (59.4%) were male and 54 (40.6%) were female. Out of 133 patients who developed acute kidney injury, 47 (35.3%) had septicemia and 40 (30.1%) had diarrhea.

Conclusion: AKI is common in our setup. The identification of risk factors is of paramount importance for the development of care strategies for patients suffering from AKI and the associated high mortality.

Keywords: Acute kidney injury, septicemia and diarrhea.

18.57

AN UPDATED COMPREHENSIVE META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS COMPARING RADIAL VERSUS FEMORAL ACCESS FOR PERCUTANEOUS INTERVENTIONS IN PATIENTS WITH ACUTE CORONARY SYNDROME

Yenal Harper, Teresa Slomka, Leah A. John, Beatrix Ramos Bondy, Rahman Shah, Sajjad A. Khan,
University of Tennessee, Memphis, TN, USA,
Department of Medicine, Aga Khan University

Background: Several randomized controlled trials (RCTs) have demonstrated that radial access reduces bleeding complications compared with a femoral approach without affecting the mortality of patients with acute coronary syndrome (ACS) undergoing percutaneous coronary intervention (PCI). However, a recent larger RCT also showed improved mortality with radial access. Therefore, previous small-to-medium sized trials may have suffered from a lack of statistical power. We accordingly conducted an updated meta-analysis with the largest sample size ever reported to examine the impact of radial access on PCI outcomes.

Methods: Relevant randomized trials were included, and the pooled risk ratio (RR) was calculated using random-effect models.

Results: Eighteen trials involving 21074 patients were included. Radial access reduced major bleeding (RR: 0.54, 95% CI: 0.41-0.72; $p < 0.001$), access site complications (0.37, 0.29-0.47; $p < 0.001$), MACEs (0.84, 0.76-0.94; $p = 0.002$) and all-cause mortality (0.76, 0.63-0.93; $p = 0.008$) compared with femoral access. Radial access by radial experts was associated with an even more pronounced decrease in major bleeding (0.45, 0.27-0.74; $p = 0.002$), MACEs (0.65, 0.56-0.76; $p < 0.001$) and all-cause mortality (0.66, 0.48-0.91; $p = 0.012$).

Conclusions: In ACS patients undergoing PCI, a radial approach decreases bleeding complications, MACEs and mortality. The benefits of radial access are more pronounced if the procedure is conducted by experienced radial operators.

18.58

B12 DEFICIENCY WITH FEVER BECAUSE OF PSEUDOMONAS INFECTION OF BONE MARROW: A CASE REPORT

*Kashif Aziz, Syed Ahsan Ali, Sabeika Raza
Department of Medicine, Aga Khan University*

Introduction: B12 is a water soluble vitamin. It is involved in the metabolism of every cell of the human body, especially affecting DNA synthesis. Humans cannot produce it so have to supplement in diet. Its deficiency cause megaloblastic anemia. Fever is not a feature of B12 deficiency. We present a case of pseudomonas infection alongwith B12 deficiency.

Summary: 38 year old lady resident of Karachi, presented to us with complaint of bleeding from nose for last one week, fever for one month and pallor for 1 month. She was having off and on fever that was recorded up to 102 degree Fahrenheit. She had two episode of bleeding from nose one week back that was about 4 to 5ml. On examination, she was having marked pallor, no lymphadenopathy, no rash. Spleen was palpable. On CBC, she had HB of 5g/dl and Platelets of 47000 per mm^3 . Peripheral blood film showed thrombocytopenia. There were no megaloblasts on peripheral film. Reticulocyte production index was 0.95%. Iron profile was normal. LDH was 3845 IU/l. B12 level was low

145pg/dl. B12 deficiency, did not explain fever. So bone marrow biopsy and culture were sent. Bone marrow trephine showed prominent erythroid hyperplasia. Immature myeloid precursors and megakaryocytes were also noted. No granuloma or infiltration/replacement was identified in the sections examined. Bone marrow culture showed Pseudomonas pansensitive infection. Initially, it was thought to be contaminant. Patient was started onto B12 replacement therapy. Her CBC did not improve despite Replacement. So later, patient was given IV ceftriaxone to cover pseudomonas. After completion of ceftriaxone therapy, her CBC started to recover. After one month, her Hb and platelets were normalized and she is afebrile.

Conclusion: Fever is not a feature of B12 deficiency. It should always be probed to find out source of fever.

18.59

CLINICAL EXPERIENCE WITH PULMONARY NOCARDIOSIS AND ITS COMPARATIVE ANALYSIS IN IMMUNOCOMPROMISED AND IMMUNOCOMPETENT PATIENTS

*Kashif Aziz¹, Muhammad Irfan², Sajjad Sarwar²
Department of Medicine, Aga Khan University*

Background and Aims: Nocardia is genus of branching rod gram posi-tive bacteria that usually affects immuno-compromised patients, but canalso affect immuno competent patients. We wanted to study the clinicaloutcome differences caused by Pulmonary Nocardiosis in these bothgroups

Methods: It was a retrospective study. Patient admitted with pulmonarynocardiosis from January 2004 to December 2015 were reviewed. Total56 patient were identified. Out of these 12 patients' record had missingdata so those were excluded. At end 44 patients' files were reviewed.Those patient who were having malignancy, had undergone transplanta-tion, had immunodeficiency, were us ing immunosuppresants or was onsteroid for past 2 months were considered immunocompromised. Diabe-tes mellitus and chronic renal failure were not considered immunocompro-mised states.

Results: Mean age of patients were 56 \square 16 years. 31 of them were males.22 of them were immunocompromised patients. Overall most common pre-senting symptom was fever (82%),

most common chest xray finding wasPleural effusion(48%). Mean TLC count was 12000 □ 6000/mm³ while53% had normal TLC at presentation. Mean Serum sodium at presentationwas 133 □ 5 meq/dl. 70% of patients had hyponatremia at presentaion.Microbiological data showed that all isolates were susceptible to Amikacinwhile Susceptibility was seen in 86% isolates for Cotrimoxazole. Ciprofloxacin and ampicillin were least susceptible drugs. There was no difference inclinical symptoms between two groups. Radiologically, Pleural effusion wasmost common presentation in immunocomprised(63% vs 33%) while consolidation was more prevalent in immunocompetent patients. There was nosignificant difference in nocardia species(N. asteroides vs N. species) affecting both groups (Odds ratio 0.46, 95% CI 0.12 - 1.4).There was no signifi-cant difference in mortality between two groups(odds ratio 0.77, 95% CI 0.19-2.5). Mean Hospital Stay was 9.18+/-5 days in immunocompromized,while 6.17+/-6 days in immunocompetent individuals.

Conclusions: Hyponatremia, fever and Pleural effusion are most com-mon findings. There was no significant difference among immunocompe-tent and immunocomporomised groups

Keywords: Nocardiosis, Pneumonia, Immunity, Antibiotic susceptibility

18.60

DIAGNOSTIC CHALLENGE IN THE MANAGEMENT OF LYMPHOMA: A CASE REPORT

*Sajjad Ali khan, Mohammad Tariq
Department of Medicine, Aga Khan University*

Pyrexia of unknown origin is a very common scenario which every physician faces in daily practice and diagnosis can be a challenge for the physician when the initial extensive work up is inconclusive. Early right intervention saves a lot of physician time and help the patient both financially and health wise.

Case: We present a 40 year old male farmer with fever and weight loss. There was no history of cough, diarrhea and urinary symptoms. He was non

smoker and had no significant family history. Patient had anemia and hepatosplenomegaly. Initial workup showed pancytopenia .Peripheral film revealed hypochromic microcytic anemia. Serial Blood cultures sent and empirical antibiotics started .ECHO was normal. Patient remained anemic despite multiple transfusions so hemolytic work up was sent. Brucella serology was borderline positive. Patient remained febrile so a bone marrow biopsy was done which was inconclusive. ACE level was high (>150). A trial of steroid was given .Fever settled for a while but then recurred so empirical ATT were started. Patient remained febrile so a liver biopsy was done which revealed T cell lymphoma.

Initial Investigations: HB -5.3 , TLC-4 , PLT-47
COOMBS –NEGATIVE ,LDH-1552, UA-9.9,T.B -0.8, Haptoglobin -0.01, Retic -2.7. Hepatitis profile, HIV, ANA, ANCA, serial blood cultures were negative.

Procalcitonin 0.77, CRP-17, ESR -40. Liver biopsy showed :LCA- Positive , Pan T (CD3) Positive, Pan B (CD20) Negative, CD4 Negative, CD8-Negative,CD5- Negative, CD56- Patchy positive. Few scattered collections of atypical T-cells seen, features favor T-cell lymphoproliferative disorder. Differentials include Hepatosplenic T-cell lymphoma and Peripheral T-cell lymphoma, NOS.
Conclusion: Lymphoma can still be the possibility even the bone arrow biopsy is negative. Consider liver or splenic biopsy if the suspicion is too high.

18.61

META-ANALYSIS OF RANDOMIZED TRIALS COMPARING MULTIVESSEL VERSUS INFARCT ARTERYONLY REVASCULARIZATION FOR PATIENTS WITH ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION AND MULTIVESSEL CORONARY ARTERY DISEASE

Rahman Shah, Sajjad A. Khan, Rohan Goswami, Jonathan Gardner, Mohamed Morsy, Yenal Harper, University of Tennessee, Memphis, TN, USA, VA Hospital, Memphis, TN, USA

Background: Several recent randomized controlled trials (RCTs) demonstrated improved outcomes with multivessel (MV) complete revascularization

(MV-CR) versus infarct related artery-only revascularization (IRA-OR) in patients with STEMI. However, it is unclear whether MV-CR should be performed during the index procedure (IP) or as a staged procedure (SP).

Methods: Relevant RCTs were included in a traditional meta-analysis to calculate pooled risk ratio (RR) using random-effect models, defining MV-CR as MV revascularization during an IP or SP. Network meta-analysis was performed using mixed treatment comparison models to compare the efficacy of the three revascularization strategies.

Results: Data from 9 RCTs involving 2120 patients were included. Compared to IRA-OR, MV-CR showed lower risk for MACE (RR: 0.55, 95% CI: 0.42-0.72; $p<0.001$), CV death (0.52; 0.29-0.90; $p=0.021$), and revascularization (0.35; 0.26-0.47; $p<0.001$) but similar rates of recurrent MI and all-cause mortality. Overall, in the mixed treatment comparison models, MV-CR during the IP was most efficacious followed by MV-CR as an SP (Fig 3). MV-CR, if performed during the IP, reduced the risk of MACEs, revascularization, MI, and CV death compared to IRA-OR, but if performed as an SP, it reduced only the risk for MACEs driven by reduced revascularization.

Conclusions: In STEMI and MV-CAD, complete revascularization showed better outcomes than IRA-OR, and did so more efficaciously when performed during the IP rather than an SP.

18.62 PERCUTANEOUS CORONARY INTERVENTION FROM FEMORAL APPROACH BY RADIAL EXPERTS IN PATIENTS WITH ACUTE CORONARY SYNDROMES: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

*Rahman Shah, Sajjad A Khan, Jonathan Gardner,
Inyong Hwang, John A. Leah, Rohan Goswami,
Kodangudi Ramanathan,
University of Tennessee, Memphis, TN, USA, VA
Hospital, Memphis, TN, USA*

Background: Several randomized controlled trials (RCTs) demonstrated that trans-radial access (TRA), particularly if performed by radial expert, decreased major adverse cardiac events (MACEs) and mortality in patients with acute coronary

syndrome (ACS) undergoing percutaneous coronary intervention (PCI). As a result, TRA was upgraded to a Class I indication in the European guidelines. In those trials, however, the rate of MACEs was unexpectedly high when trans-femoral access (TFA) was used, leading to concern about whether radial experts might have been less skilled in TFA, leading to more complications. Thus, the significant difference favoring TRA could have been a result of an increased incidence of adverse events in the TFA arms, rather than a beneficial effect of TRA.

Therefore, we performed a metaanalysis of RCTs comparing adverse events when TFA was performed by a radial expert versus a non-radial expert.

Methods: Relevant randomized trials were included in the analysis, and those that reported subgroup data for radial experts versus nonradial experts were identified; a radial expert was defined by individual trials. Event rates in the TFA arms were collected for radial experts and non-radial experts. The pooled risk ratio (RR) was calculated using fixed-effect models.

Results: Data from 7339 patients were included. TFA by radial experts had significantly higher rates of MACEs (RR: 1.75, 95% CI: 1.45- 2.13; $p<0.001$) and mortality (RR: 1.66, 95% CI: 1.09-2.52; $p=0.018$) compared to TFA by non-radial experts.

Conclusions: In ACS patients undergoing PCI, TFA by radial experts, compared to non-radial experts, was associated with a high rate of MACEs and mortality. Thus, RCTs showing TRA benefits over TFA should be interpreted in context of this potential bias. This issue needs further investigation before making significant changes to American guidelines.

18.63 TYPHOID FEVER MIMICKING AS LYMPHOMA: A CASE REPORT

*Kashif Aziz, Faisal Mehmood, Sahar Rizvi
Department of Medicine, Aga Khan University*

Introduction: Typhoid fever is bacterial disease caused by *Salmonella Typhi*. Typhoid fever spreads through contaminated food and water or through close contact with someone who's infected. We present a case of typhoid fever who initially

appeared like lymphoma later turned out to be typhoid fever.

Summary: 17 year young male presented with complaints of fever for 3 months, weight loss and decreased appetite. He was resident of interior Sindh and was living in Hyderabad for studies prior to this illness. Fever was high grade and associated with rigors and was intermittent. There was mild nausea, anorexia and weightloss of 10 kg in prior 3 months. He had taken ceftriaxone IV for 14 days but his symptoms did not improved. On examination he was having pallor, oral thrush and some lymph adenopathy in anterior chain of cervical lymph nodes. On abdominal examination, tip of spleen was palpable and was firm but non tender. Rest of examination was unremarkable. His CBC showed normocytic anemia and thrombocytopenia with 40000 platelets. His malaria, dengue workup was negative. Blood cultures were sent that also came out to be negative. Peripheral blood film showed anemia, thrombocytopenia and Atypical lymphocytes. So Lymphoma was suspected based on history. Bone marrow biopsy was done along with bone marrow culture. Later bone marrow culture revealed Salmonella typhi that was resistant to all antibiotics except azithromycin. He was started on azithromycin for 14 days and discharged. On Follow up, his fever was settled and his peripheral film improved and thrombocytopenia and anemia was resolved.

Conclusion: In patient with PUO, resistant typhoid fever should be in differential diagnosis and bone marrow culture be sent when bone marrow biopsy is being done.

18.64 CYTOEGALOVIRUS CAUSING RELATIVE ADRENAL INSUFFICIENCY IN IMMUNOCOMPETENT HOST

Hina Shahabuddin
Department of Medicine, Aga Khan University

Introduction: Cytomegalovirus (CMV) has been shown to cause encephalitis, hepatitis, pneumonia, retinitis, uveitis, colitis and graft rejections in immunocompromise hosts. Although CMV can affect many organs, it has a predilection for the adrenal gland. It is the most common microbe underlying adrenal insufficiency in AIDS patients.

Studies have shown that 93% of CMV-infected patients with AIDS have adrenal glands involvement. Several cases of CMV adrenalitis in immunocompromised individuals have been reported but adrenal gland involvement by CMV in immunocompetent host has not so far been reported.

Case summary: 55 year old gentleman having prior history of tuberculous lymphadenitis for which he took ATT for 12 months and underwent colectomy for ileocecal mass (no records of biopsy available but according to patient he did not receive any chemotherapy or radiation) in 2015 presented with complaints of loose motions for 3 years which got worsen over last 7 months and weight loss of more than 10 kg in last three years. On examination he was emaciated, pale and there was lymphadenopathy. He was having blood pressure of 90/58mmHg, pulse of 110/min, respiratory rate of 18/min and temperature of 37C. On abdomen there was scar mark of previous surgery, otherwise abdomen was soft nontender and there was no visceromegaly. Chest was clear. CVS and CNS examination were unremarkable. His workup was done which showed Hb of 9.3gm/d, MCV 88.6, WBC 6.5, platelet 45000. BUN less than 2, creatinine 0.8, sodium 146, potassium 3.4, chloride 114, bicarbonate of 15, calcium 8.1, phosphorus 2.2, CzRP 5.29mg/dl, total bilirubin 0.6mg/dl, direct bilirubin 0.5mg/dl, indirect bilirubin 0.1mg/dl, GGT 46 IU/L, SGPT 15 IU/L, alkaline phosphatase 99 IU/L, SGOT 11IU/L, LDH 192 IU/L, TSH of 5.075, serum B12 >2000. His cortisol was 17.5ug/dl (which was relatively low as compared to the level in stress response). Short synacthen was not available. His endoscopy and colonoscopy were normal. His TTG IgA and IgG levels were normal. His stool DR was normal and stool culture showed no growth. His CMV PCR came out positive. HIV serology negative. Based on workup he was found to have CMV infection causing diarrhoea, relative adrenal insufficiency and bicytopenia (anemia and thrombocytopenia). He was started on gancyclovir and was discharged.

Conclusion: Traditionally symptomatic CMV infection in immunocompetent host has been considered as benign and self limiting and we never think of it involving adrenal glands in immunocompetent host as most of the case of CMV adrenalitis have been reported in immunocompromised individuals that is in patients

with AIDS, post transplant recipients and infants.
Therefore we need to be more vigilant while
clinically examining patient and give importance to
non specific symptoms as well.

