



Abstract Book



آغا خان یونیورسٹی
THE AGA KHAN UNIVERSITY

10th Health Sciences Research Assembly
August 23 and 24, 2016

INAUGURAL SESSION
Tuesday, August 23, 2016 | 8:30 - 10:00 am
Aga Khan University Auditorium

- *Tilawat*
- Introduction: Dr Shahab Abid, Chair, 10th HSRA 5 min
- Remarks by Dr Farhat Abbas, Dean, Medical College 5 min
- Remarks by Dr David Arthur, Dean, School of Nursing & Midwifery 5 min
- **Invited presentations**
 - 1 Dr M. Perwaiz Iqbal, Professor & Interim Chair, Biological & Biomedical Sciences 10 min
Interaction between basic and clinical scientists is essential for fundamental and translational research
 - 2 Dr Fauziah Rabbani, Professor & Chair, Community Health Sciences 10 min
Community Health Sciences: promoting multidisciplinary research collaboration
 - 3 Dr Zahra Hasan, Professor, Pathology and Laboratory Medicine 5 min
Rapid diagnosis of childhood tuberculosis by stool Xpert MTB/RIF testing
Dr Kiran Iqbal, Senior Instructor, Pathology and Laboratory Medicine 5 min
Increased MTB-antigen induced gene expression of Interferon-gamma, tumor necrosis factor alpha and interleukin-6 in patients with diabetes
 - 4 Dr Asad Ali, Associate Professor, Paediatrics and Child Health 10 min
Collaborative research projects in Pediatrics - improving public health nationally and globally
 - 5 Dr Ayeesha Kamal, Associate Professor and Stroke Neurologist, Department of Medicine 10 min
Transdisciplinary research opportunities in Pakistan
 - 6 Dr Rozina Karmaliani, Professor, School of Nursing and Midwifery 10 min
Impact evaluation: Assessing the effectiveness of tele-psychiatry consultation services in Gilgit Baltistan
 - 7 Dr Nargis Asad, Chair WGW and Associate Professor, Department of Psychiatry 10 min
Violence against women and girls in South Asia
- Vote of thanks
Azmat Khan, Co-Chair, 10th HSRA
- Inauguration of Poster Exhibition

Themes

- 1.0 Bone and Joint
- 2.0 Cardiovascular
- 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 Miscellaneous
- 12.0 Neurosciences and Mental Health
- 13.0 Public Health
- 14.0 Renal/Urology
- 15.0 Respiratory Diseases
- 16.0 Techniques/Innovations
- 17.0 Trauma and Violence
- 18.0 Women and Child Health

**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
10th HSRA

Ms Azmat Khan
Co-Chair, Organizing Committee
10th 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 and take advantage of such 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
Aga Khan University

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

Knowledge development and its dissemination is a fundamental expectation from universities requiring relevant resources, but more importantly, a culture that nurtures thinking, enquiry and innovation. The Annual Health Sciences Research Assembly (HSRA) is one such activity. I am happy to learn that the Aga Khan University will hold its 10th Annual HSRA in August 2016. The Medical College and the School of Nursing and Midwifery jointly contribute to the promotion of a research culture in the University.

This forum offers an opportunity to seasoned researchers to share their research outcomes and also allows our students and alumni to share their research work, including research that are in progress.

Having witnessed the success of the past assemblies, I am confident that this year too, a good number of faculty and students will participate in this important event of the University.

Through this message, I would like to encourage all faculty and students to take an active part in making this event successful.

I wish the organizers well in making this another successful event

Dr. Raisa Gul

Professor and Interim Dean
School of Nursing & Midwifery
Aga Khan University

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

As the environment of higher education is rapidly changing, AKU is evolving into an international comprehensive research-led university. AKU's education and research programmes embrace a multidisciplinary approach to education and research, resulting in better research, innovative teaching, generation of knowledge, with direct impact on the quality of lives of people it serves. Cross-cutting innovation and commercialization is ripe for mutation and AKU plans to educate and enthuse its faculty and students in this enterprise.

The annual Health Sciences Research Assembly recognizes the importance of collaborative research and advances the research agenda by providing this forum for faculty, staff, and students at AKU. It highlights the tremendous significance attached to research and dissemination of knowledge and the vibrant enthusiasm of its members' engagement in research and mutual critical discussion with local and international academia.

The organisers have worked tirelessly again to put together this year's research assembly. And I take this opportunity to extend my deepest appreciation for their extraordinary effort.

Congratulations.

Professor El-Nasir Lalani
Dean of Research & Graduate Studies and
Professor of Molecular and Cellular Pathology

Organising Committee
10th Health Sciences Research Assembly
August 23 and 24, 2016

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Table of Contents

Bone and Joint.....	1
Cardiovascular	3
Clinical Trials.....	37
Dental/Orthodontics.....	40
Endocrinology/Diabetes.....	43
Gastrointestinal and Liver.....	59
Genetic Disorders.....	83
Haematology and Oncology	85
Health Education.....	98
Infection and Immunity.....	115
Miscellaneous	138
Neurosciences and Mental Health.....	183
Public Health.....	210
Renal/Urology.....	252
Respiratory Diseases.....	256
Techniques/Innovations	276
Trauma and Violence.....	287
Women and Child Health.....	295

Bone and Joint

1.1 IS SHOULDER X-RAY USEFUL FOR THE EVALUATION OF SHOULDER PAIN?

Salima Hassan, Saba Bahadur, Raza Sayani
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Objective: To evaluate if plain shoulder radiograph is able to provide adequate information to help in the diagnosis and management.

Material and Method: We retrospectively reviewed 61 shoulders MRI performed for evaluation of pain. The findings were documented and compared with X-ray findings of the same patients.

Results: We reviewed data of 61 patients from date to date 35 were male and 26 were female. Amongst the 61 patient 21 patients had tendinopathy with degenerative changes, 9 had Bankart or Hillsach abnormality due to previous dislocation 37 Where as on comparison plain X-ray showed no significant abnormality in cases with degenerative changes . Tumors, fracture , Fibrous dysplasia , osteochroma and AVM were adequately diagnosed.

Conclusion: In view of large number of normal radiographs for shoulder pain, we recommend proceeding for ultrasound or MRI of shoulder after good clinical examination rather than exposing patient for extra radiation without much benefit.

Keywords: Shoulder, X-ray, MRI

1.2 HARMFUL EFFECTS OF CARBONATED DRINKS ON BONE HEALTH OF ADOLESCENTS

Sunita Momin
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Introduction: Adolescence is period of rapid growth therefore both male and female require high energy intake and large amounts of nutrients, particularly iron, calcium and vitamins. Nowadays soft drinks are more

preferred instead of milk. Small scale studies indicate that high consumption of carbonated soft drinks (CSDs), particularly colas, during this period may reduce bone mineral density and increase fracture risk (McGARTLAND et al.2003). These soft drinks not only affect bones but also increase the risk of type 2 diabetes, heart disease, and other chronic conditions.

Method: A comprehensive systemic literature review was conducted through various databases and research articles was conducted through electronic medium by using JPMA, SAGE and Google search engines.

Result: Harnack et al. (1999) concluded in his study that almost all adolescents (96.3%) reported that they currently drink soda. More than 80% consumed 1 or more glasses of soda per day during the past year. Due to this the threat of developing weak bones and increased risk for bone fractures becomes greater when milk is replaced by soda, especially cola-containing sodas, during the teen-age years when approximately 50% of bone mass is developed (Anderson, 1995). Fifteen cross-sectional studies examined the association between soft drink consumption and milk intake; 13 reported that soft drink consumption was associated with lower intakes of milk and dairy products (Lenny et al. 2007). It has been suggested that negative effects of cola beverages could be attributed to the content of phosphoric acid, and two studies in rats have found that cola consumption induces reduction in bone mineral density (Arne et al. 2011).

Conclusion: An ounce of prevention is worth a pound of cure” is a well known proverb.

Adolescents are spending lots of money in purchasing fizzy drinks and endangering their life. Both nationally and internationally, efforts should be made by all stake holders including government, parents and teachers to reduce soda consumption among adolescents. It is also important that soda should not be readily available at home or commonly accessible to teenagers at schools. Use of healthy food and drinks like milk and dairy products should be encouraged among them which also satisfy thirst and that taste good as well.

Keywords: Carbonated soft drinks, Bone Mineral density, fracture

Cardiovascular

2.1

EFFECT OF EDUCATION ON CARDIAC INTENSIVE CARE UNIT NURSES KNOWLEDGE ON EARLY IDENTIFICATION AND MANAGEMENT OF LOW CARDIAC OUTPUT SYNDROME

Hina Nizar Karim

Nursing Services, Aga Khan University, Karachi

Abstract Background: Low cardiac output syndromes (LCOS) is the most common post cardiac surgery syndrome in both adults and Peds, with the prevalence rate ranging from 3 to 45% in critical care unit. (Wessel, 2001). Globally, the incidence of LCOS has reached up to 38% in adults and is considered one of the largest cause of mortality after coronary artery bypass grafting (Sa, et al., 2012). The incidence of low cardiac out syndrome after pediatric congenital cardiac surgery is 25% (Jones, Hayden & Janes, 2005).

Aim: Studies have shown that lack of knowledge about warning signs of LCOS among nurses in critical care areas are may be an obstacle in early identification and management of LCOS (Dorothy, 2005). Therefore, the purpose of this project is to identify whether 1-hour teaching module is effective to increase nurse's knowledge about LCOS identification and management among nurses working in cardiac intensive care unit.

Method: A total 15 in-service educational session about LCOS identification and its management was implemented in CICU and the duration of session was one hour. Pre-test and Post-test was done from twenty six (26) nurses and technician of CICU but, teaching sessions was attended by all the service line 01 nurses and technicians. A simple and concise demographic data sheet was used to collect nurses and technician information. It includes gender, years of experience, qualification or any other specialized diploma or certificate. Further, Pre and Post-test include questions related to LCOS knowledge and management. Analysis Descriptive statistical analysis was performed including frequencies, mean and paired sample t

test. Statistical Package for the Social Sciences (SPSS) was used to assess nurse's knowledge of LCOS early identification and management by pre and post educational sessions.

Results: The educational intervention significantly improved the knowledge level of the participants regarding identification and management of LCOS. The results of the pre-test highlighted that majority of the nurses had a significantly low level of knowledge regarding warning signs and management of LCOS. The analysis revealed a significant difference in the nurses' knowledge before and after the teaching. Thus, mean post-test score are significantly higher than the mean score of pre test. In addition, p value is .0000, which is highly significant, and it reflects that education intervention has improved nurse's knowledge. Recommendation • Stakeholders should take some initiatives to educate their nurses for better patient care • Nurses are also accountable for their own learning and growth.

Conclusion: The results of the study clearly indicate that education intervention has improved nurses knowledge about LCOS as evident in post test.

Keywords: nurses, knowledge, low cardiac output syndrome

2.2

SUCCESS AND FAILURE PROFILE OF FAST TRACK EXTUBATION IN ADULT ON PUMP OPEN HEART SURGERY PATIENTS OF A TERTIARY CARE HOSPITAL. A PROSPECTIVE OBSERVATIONAL STUDY

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Objective: The objective of the study was to determine the safety profile of fast track extubation practice in terms of its success and reasons for its failure in adult open-heart

surgical patients. Primary outcome measures in the selected patients were time to extubation, re-intubation within 24 hours of extubation and total intensive care unit (ICU) stay. Design: A prospective observational study. Place And Duration of Study: The study was conducted at cardiac operating room and Cardiac Intensive care unit of Aga Khan University Hospital for a period of eight months from Oct 2014 to June-2015.

Patients And Methods: A total of 290 adult elective cardiac surgery patients done on pump including isolated CABG, isolated Valve replacements, combined procedures and aortic root replacements were enrolled in the study with 20 changed to conventional route due to clinical reasons. Standardized anesthetic technique adopted. Surgical and bypass techniques were tailored according to the procedure. All statistical analyses were performed using Statistical Packages for Social Science version 19 (SPSS Inc., Chicago, IL).

Results: Overall success rate of fast track extubation practice (extubation within 6 hours) was 51.9% and failure rate was 48.1%. Major reasons for failed fast track extubation were hemodynamic instability, drowsiness and bleeding. Re-intubation rate was 0.74%. Average duration of ICU stay was significantly higher (51.9±17.03 hours) in cases that were extubated after 6 hours in comparison with fast track patients in which the ICU stay was 41.02±10.9 hours (P value = .0005).

Conclusion: The study has reinforced the safety of fast track extubation at our cardiac surgery section. To implement the practice in its full capacity and benefit, a fast track protocol needs to be devised to standardize the practice.

Keywords: Fast Track extubation, Adult, open heart surgery

2.4

MITRAL ANNULUS MYXOMA EXTENDING INTO LEFT ATRIUM AND LEFT VENTRICLE WITH SEVERE MITRAL REGURGITATION AS A PRE-OPERATIVE FINDING – A RARITY

*Atiya Hameedullah, Hamza Khan, Omar Irfan,
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A 50-year-old lady presented with sudden episode of chest heaviness and shortness of breath to the Emergency Unit. There was no significant physical examination finding and all routine lab investigations were normal. She underwent an angiography that revealed tight left anterior descending artery stenosis. An angioplasty was performed but immediately she had an episode of pre-syncope. Echocardiogram was performed which showed a large left atrial myxoma causing severe mitral regurgitation. Urgent open heart surgery was planned. The myxoma was identified and excised and the mitral annulus was then repaired and normal flow restored. The patient was then discharged home and followed up for 2 months with no complaints.

Keywords: Mitral Myxoma, Regurgitation, Emergency

2.5

RETROGRADE BULLET MIGRATION FROM INFERIOR VENA CAVA INTO RIGHT COMMON ILIAC VEIN FOLLOWING GUNSHOT

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Bullet embolization cases are rare and even rarer are its retrograde migration in the veins. We report the case of a 14 year old male with a gunshot wound to the left side of his chest. CT scan revealed bilateral hemothorax and foreign body in the right common iliac vein. The patient was immediately taken to the operating theatre and median sternotomy performed. Bullet entry tear was found in the inferior vena cava however the bullet was found lodged in the right common iliac vein and slipped down against the flow of blood. The bullet was left in the situ and after the necessary repair the chest was closed and the patient shifted to the CICU and discharged after 4 days in stable condition. Patient was followed after 1 week and reassured and advised for one year follow-up.

Keywords: bullet injury, venous embolism, retrograde migration

2.6

RIGHT THROUGH THE HEART: MANAGING A STAB WOUND TO THE LEFT VENTRICLE LATERAL TO THE LEFT ANTERIOR DESCENDING ARTERY

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Cardiac tamponade following stab wounds is infrequent, reportedly occurring in 2% of penetrating and 10% of blunt trauma injuries. Here we present a case of tamponade following stab injury. A 24 year old male presented to the ER with a 2 hour history of a knife stab wound. He was haemodynamically stable at the time of presentation along with good bilateral air entry, with his chest radiograph showing no hemopneumothorax. However an enlarged cardiac silhouette was seen. The patient suddenly became hypotensive and drowsy and on suspicion of cardiac tamponade a catheter was inserted in the subxiphoid area to drain for its relief but the measure was unsuccessful. He was then rushed to the Operating Room where an emergency median sternotomy was performed. The cardiac tamponade was identified and relieved. During the surgery a 2 cm long laceration was identified in the mid-left ventricular (LV) wall less than 1mm from the Left Anterior Descending (LAD) Artery. The artery was spared but the Left Anterior Descending Vein was damaged. The Ventricular wall and the Left Anterior Descending vein were repaired with the interrupted pledgeted 3-0 prolene suture, whilst a cardiopulmonary bypass was kept on the stand by. The artery was handled carefully to prevent any injury as it was lying in close proximity of the injured vein. After ventricular wall and vein repair, the patient was checked for a ventricular septal defect via

an intraoperative echo. Subsequently, the patient had an uneventful recovery and was discharged.

Keywords: Penetrating Cardiac Trauma, Acute Cardiac Tamponade, Median Sternotomy

2.7

SUCCESSFUL RESECTION OF LYMPHANGIOMA OF THE NECK AND MEDIASTINUM PRESENTING AS STRIDOR IN A 12 YEAR OLD CHILD

*Babar Irfan, Maha Tahir, Omar Irfan, Hamza Khan, Saulat Fatimi
Jinnah Sindh Medical University, Dow International Medical College, Department of Surgery and Medical College, Aga Khan University, Karachi*

Lymphangiomas are congenital malformations of lymphatic tissue. This benign condition is generally found in the neck region and is discovered by 2 years of age. Here we report the case of a 12 year old child who presented with a cervical and mediastinal cystic hygroma that had progressed to such a space occupying nature as to cause the shifting of the trachea. The entire mass was successfully resected with a lower neck incision. Our case suggests the need to consider cystic lymphangioma in the differential diagnosis of lateral neck masses, together with the use of adequate imaging to substantiate the pre-operative diagnosis.

Keywords: stridor, lymphangioma, neck

2.9

FREQUENCY, INDICATIONS AND COMPLICATIONS OF PULMONARY ARTERY CATHETER (PAC) INSERTION IN ADULT OPEN-HEART SURGERY PATIENTS OF A TERTIARY CARE HOSPITAL; A PROSPECTIVE DESCRIPTIVE STUDY

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Objective: To determine the frequency, indications and complications of pulmonary artery catheter insertion in adult open heart surgery patients. *DESIGN:* Prospective descriptive study. *PLACE AND Duration Of Study:* The study was conducted at cardiac operating room and Cardiac Intensive care unit of Aga Khan University Hospital for a period of six months from Nov 2015 to April 2016.

Patients And Methods: Two hundred and seven patients were included in this study. PAC was inserted through right/left internal jugular vein or subclavian vein. Complications noted were arrhythmias (atrial and ventricular), right bundle branch block, coiling and knotting, pulmonary artery rupture, and infection up to 72 hrs. All statistical analyses were performed using Statistical packages for Social Science version 19 (SPSS Inc., Chicago, IL). Frequency and percentage were computed for gender, comorbid (HTN, DM, CKD, COPD) and PAC frequency of insertion, indications and complications noted.

Results: The frequency of PAC was 47.83%. Major indications for PAC insertion were poor LV, Acute coronary syndrome, cardiogenic shock, and valvular heart disease patients. Minor complications were found in 23.22% cases

which included arrhythmia in 19.2% cases and coiling in 4.02%

Conclusion: Pulmonary artery catheter insertion is a safe technique with very useful clinical application in the management of high-risk open-heart surgical patients. Risk benefit ratio must be considered during the selection of PAC insertion. The PAC insertion rationale must be standardized to confirm the judicious use.

Keywords: PAC, Adult cardiac surgery, Complications.

2.10 COMPARING ACUTE COMPLICATIONS OF CARDIAC RHYTHM MANAGEMENT DEVICES (CRMDs) IMPLANTATIONS IN PATIENTS WITH INR LEVEL <1.5 AND >1.5 AT A TERTIARY CARE HOSPITAL

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Abstract Background: In Pakistan the cases of Heart Failure (HF), Acute Myocardial Infarction (AMI) and conduction system disorder of heart have been increased rapidly, due to which the function of heart is compromised. To treat the cardiac disorders which could not be managed with life style changes and usage of anti-arrhythmic drugs, Cardiac Rhythm Management Devices (CRMDs) are implanted.

Objective: The study aimed to find out the acute complications in patients' who had undergone CRMDs implantations at the International Normalized Ratio (INR) level (1.5), in the tertiary care hospital Karachi-Pakistan. Also, to find how acute complications exhibited by patients will affect the Length of Stay (LOS) of patients in both the groups.

Methodology: The retrospective descriptive study design was utilized to analyze the data regarding CRMDs implanted from January 01, 2012 to April 30, 2014 at a tertiary care hospital, Karachi-Pakistan. Patients' files were used to collect the data. The data was reviewed and collected with the help of self-made 'data collection tool'. The SPSS version 19 used for the data entry.

Results: The analysis of the data showed that total of 265 implantation performed in the tertiary care hospital. Male (61.3%) underwent implantation than female (38.7%), more commonly PPMDC were implanted in (56%) and least number of implantation is CRT (41%). Moreover, (10%) implants were performed in INR level in therapeutic level, interestingly without acute complications. However, there were four types of acute complications reported; only hematoma has the direct relation with the INR level. Finally, 8 patients with acute complications hospitalized more than 2 days. While majority of the patients discharged on the second day of the implantation.

Conclusion & Recommendations: Acute complications occurred in less than (1%) of patients observed in the current study findings. Finally, performing procedures in therapeutic INR can be economical, decrease hospital stay, and minimize nosocomial infections. Also, an in-depth study is suggested to explore the experiences of patients underwent CRMDs implants in therapeutic INR.

Keywords: Acute complications, INR, Cardiac rhythm management device

2.11 TAKOTSUBO CARDIOMYOPATHY (BROKEN HEART SYNDROME), A LITERATURE REVIEW

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University, Karachi*

Introduction: Several case studies have described a condition presenting signs and symptoms of acute myocardial infarction without obvious coronary artery stenosis. The condition was first described in 1991 by Dote et al, who named the syndrome “takotsubo like cardiomyopathy” as the exterior of heart in this condition becomes similar to a pot used in Japan to catch octopus (tako in Japanese means octopus; tsubo means pot). It is a rare and reversible disorder caused by an emotional or physical stressor.

Method: Literature review was done by exploring the different search engines such as science direct, CINHAL, Pub med and Google. In addition, to identify the number of cases of Takotsubo cardiomyopathy (TTC) diagnosed at Aga Khan University Hospital (AKUH) Karachi, secondary data was collected from Health Information Management Services (HIMS).

Result: Literature review suggests that most cases of TTC occur in postmenopausal women, and the average age of onset is between 58 to 75 years. Patients with TTC present with signs and symptoms suggestive of acute coronary syndrome. The main features of TTC include chest pain and shortness of breath with ballooning of left ventricle after severe emotional or physical stress. HIMS data from AKUH shows reported cases from 2009- 2014 were 148. This data also included the cases of Left Ventricular Dysfunction, as the code of

management for both diseases in AKUH is same.

Conclusion: Broken heart syndrome or TTC is a reversible form of cardiomyopathy which is often caused by emotional or physical stress.

Keywords: Cardiomyopathy, Stressors, octopus pot

2.12 SUCCESSFUL MANAGEMENT OF SEPTIC PATIENT WITH CONCEALED LEFT PERSISTENT SUPERIOR VENA CAVA: ANESTHETIC PERSPECTIVE

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University, Karachi*

Surviving sepsis guideline supports the placement of central venous cannulation (CVC) to target the deranged physiology. The placement of CVC is still challenging, which requires detailed knowledge of venous anatomy and orientation of congenital venous anomalies. Double or persistent left superior vena cava (PLSVC) is common anomaly in thoracic venous system. Our patient had hidden PLSVC, though he was previously asymptomatic and no cardiac disease. We report successful anesthetic management of adult male with septicemia for emergency laparotomy. CVC was placed in left internal jugular vein under vision by ultrasonography for fluid and vasopressor requirement. The incidental PLSVC was initially diagnosed on routine post procedure chest X-ray. Later it was confirmed by transthoracic echocardiography with an agitated saline micro bubbles contrast media. We conclude that the routine post CVC chest X ray is mandatory not only to identify the correct positioning of CVC

placement but also very helpful in identifying the underlying rare anomalies.

Keywords: central venous catheter, Persistent left superior vena cava, Ultrasound

2.13 THE STATUS OF DIASTOLIC DYSFUNCTION IN CORONARY ARTERY DISEASE PATIENTS: A SINGLE CENTER EXPERIENCE

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Karachi*

Objectives: Diastolic dysfunction of the heart can occur alone or with systolic dysfunction with or without heart failure symptoms. As diastolic dysfunction and coronary artery disease are closely interrelated, we aim to assess the status of diastolic dysfunction in patients with advanced coronary artery disease admitted for revascularization therapy.

Methods: Retrospective analysis of advanced coronary artery disease patient records admitted for coronary artery bypass operation was done. Patients were divided into groups I and II with ejection fraction (EF) $\geq 50\%$ and $< 50\%$ respectively. Echocardiography records were used to assess cardiac morphology, systolic and diastolic functions.

Results: Groups I and II showed body mass index of 29 kg/m² vs 25 kg/m² and frequency of hypertension 80% vs 63% respectively. Electrocardiogram showed higher rate (47%) of ST-Elevation Myocardial Infarction in group II and Non ST-Elevation Myocardial Infarction (NSTEMI) (27%) in group I. Group I showed E/e' ratio of 13 against 17 in group II. There was

an inverse correlation between EF and E/e'. 33% patients with diastolic dysfunction and preserved ejection fraction presented with and 67% without heart failure symptoms.

Conclusions: In patients with advanced coronary artery disease, severity of diastolic dysfunction increases progressively with reduction in EF. Patients with preserved EF are comparatively hypertensive, obese and have previously had an NSTEMI. One third of the patients with preserved ejection fraction and diastolic dysfunction had a history of heart failure. Therefore, diastolic function status in patients with advanced coronary artery disease deserves attention irrespective of their EF status.

Keywords: Diastolic dysfunction, coronary artery disease, heart failure with preserved ejection fraction

2.14 NURSES KNOWLEDGE ON DISCHARGE INSTRUCTIONS OF POST MYOCARDIAL INFARCTION (MI) AND ITS EFFECTS ON PATIENTS' AWARENESS TO THEIR DISCHARGE CARE

*Shaheen SherAli, Afzal Qasim, Hakim Shah
Dow University of Health Sciences, Karachi*

Introduction: Discharge instructions play a major role in preventing patients' readmission in hospital. Nurses spend more time with their patients to provide holistic and continuous care, in which discharge instructions are also included.

The quasi-experimental study was conducted in a public hospital, to evaluate whether nurses are sufficiently knowledgeable in meeting patients' needs on discharge instructions to the post Myocardial Infarction (MI) patients, and that their patients are also aware of their discharge care.

Objectives: Assess nurses' knowledge related to discharge instructions of post MI patients. Assess patients' awareness about their discharge care.

Provide current information to nurses about discharge teachings and to assess its impact on patient's awareness to their discharge care.

Methods: The study was conducted on 30 nurses and 400 patients at the public sector from November 2014 to March 2015. The sample was equally divided into two groups of 15 nurses and 200 patients in each intervention and control group. The questionnaire was pilot tested. After assessing the baseline knowledge from all the study subjects, an in-service session was conducted for intervention group of nurses.

Then, after fifteen days, reevaluation of all study participants' knowledge was carried out. The comparison of results was conducted by using Wilcoxon signed ranks test. To determine if there are any statistical association, P value < 0.05 were considered as statistical significant.

Results: The results revealed that there was a marked improvement in nurses' over all knowledge of the intervention group ($p < 0.001$). The patients' knowledge was found to be higher for patients of the intervention group ($p < 0.001$) as compared to the control group. These findings enabled the investigator to recommend that the implementation of in-service educational program for nurses are not only beneficial for nurses themselves but its effects can be visible on patients as well.

Conclusion: Participating in in-service sessions leads to improved nurses' knowledge, as well as, they can transfer these information to their patients. Therefore, patients can maintain their health by following the given discharge instructions.

Keywords: Discharge instructions, In-service session, Myocardial Infarction

2.15

THE GLENN SHUNT PROCEDURE: CLINICAL OUTCOMES IN PATIENTS WITH COMPLEX CONGENITAL HEART DISEASE

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Introduction: The classic Glenn has provided excellent long term palliative results in complex cardiac malformation patients with single ventricle physiology. Numerous studies have highlighted the benefits of an "early" bidirectional Glenn (BDG) procedure.

Objective: To determine the clinical outcomes of patients with complex congenital heart diseases undergoing Glenn shunt procedure at our institution.

Materials & Methods: It was a retrospective chart review of all patients undergoing BDG procedure at AKUH between June 2006 and December 2012. Data was collected from patients' medical record folders and the cardiothoracic surgery database using a structured questionnaire. All patients except those without complete records or completion of procedure were included. The data was analyzed on SPSS version 19.

Results: A total of 58 records were identified, including 3 incomplete records, for a sample size of 55 ($n=55$). Median age at procedure was 8 months (IQR 1-36 months) and median weight was 8 kg (IQR 6.8-12 kg). Median preoperative oxygen saturation was 80% (IQR 60-85%). Median per-operative Glenn pressures were 15 mmHg (IQR 13-20 mmHg). Postoperatively, median inotropic score was 5 (IQR 0-10) with median ventilatory support of 7 hours (IQR 5-17 hours), ICU stay of 41 hours (IQR 25-91 hours) and hospital stay of 8 days (IQR 6-10 days).

Postoperative morbidities included pneumonia (12.7%), readmission (12.7%), arrhythmia (11%), wound infection (11%) and reopening (7%). 30-day mortality was 3.6% (n=2).

Conclusion: Among congenital cardiac diseases, single ventricle physiology is difficult to treat. Our audit shows that patients undergoing BDG procedure can be managed with acceptable morbidity and mortality in a developing country like Pakistan.

Keywords: Congenital heart disease, Single ventricle, Glenn shunt

2.16

ALTERNATE DAY STATIN REGIMEN – COST SAVING, SAFE AND EFFECTIVE FOR TREATING HYPERLIPIDEMIA AND CARDIOVASCULAR DISEASES (REVIEW)

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Introduction: Statins are lipid lowering drugs administered daily as standard therapy which protects against atheroma formation, cardiovascular disease and hyperlipidemia. Statins competitively inhibits HMG CoA reductase and thus limit cholesterol biosynthesis. Numerous patients discontinue statins due to drug intolerance and high drug cost thus increasing the risk of cardiovascular morbidity and mortality. Researchers evaluated that alternate day statin administration significantly lowered lipids with fewer side effects as compared to daily dose. Cardiovascular outcome was not assessed in these studies therefore; further exploration on safety and efficacy of alternate day regimen should be carried out. Research Questions: Is alternate day statin regimen therapeutically equivalent, safe and cost effective than daily regimen?

Objective: To review evidence based primary data with respect to efficacy, safety and cost effectiveness of alternate day statin therapy in dyslipidemia as compared to standard daily dose.

Methods: Electronic database search carried out to consolidate available data using PubMed, EMBASE, and Google Scholar. The most appropriate research articles were selected and were verified by related articles. Reference citations from relevant publications were also included.

Findings: Except pravastatin and lovastatin, alternate day statin therapy was as effective in lowering total cholesterol, LDL-C and triglycerides as daily dosing with low incidence of adverse drug reactions (ADRs) therefore; very well tolerated with reduced drug cost. Side effects: Myopathy, hepatotoxicity, cataract, polyneuropathy, diabetes, memory loss, behavioral changes etc.

Contraindication/precaution: Active liver disease, pregnancy, breastfeeding, rhabdomyolysis and advanced heart failure. Standard Dosage: Adjusted from 5-40 mg once daily.

Conclusion: Statin compliance and cost is major concern for treating physicians and patients. This article provides insight to explore alternate day statin regimen for therapeutically equivalent and safe statin treatment to improve patient's tolerability and adherence with low treatment cost. Research with higher methodological standards could help physicians to consider evidence based clinical efficacy and safety of drug while prescribing alternate day regimen. Utilization of Evidence (Actual or Potential): Alternate day regimen could be appropriate option for statin intolerant and non-affording patients.

Keywords: Statins, alternate day dose, cardiovascular diseases

2.17 PERIOPERATIVE MYOCARDIAL INFARCTION; A SILENT KILLER

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Purpose: Underline different causes of perioperative myocardial infarction and its management in acute period of surgery.
Methodology: Case study of 44 years old male patient with open laparotomy from tertiary care hospital is supported with recent literature. Perioperative myocardial infarction is damage of myocardium occur during elective non-cardiac surgeries within acute phase of surgery. It is very critical to rule out pre-operatively especially patient undergoing non-cardiac surgeries. It is known that myocardial injury for cardiac and non-cardiac surgeries remain asymptomatic. To be safe sided in perioperative myocardial infarction (PMI) patient should be evaluated on basic three variables i.e. patient specific variable (lipid profile underline cardiac history), exercise capacity and surgery risk. Another important indicator which indicate is revised Goldman cardiac risk index (RCRI) differentiate a patient in four main categories with respect to risk factors class 1 to 4. Addition to above tool another important to be evaluated preoperative phase is type of surgery. Surgeries are divided into three main categories for proper prevention of the perioperative myocardial infarction. Low risk surgeries (localized surgeries) moderate risk surgeries (involving systemic surgeries) and high risk surgeries (Non cardiac vascular surgeries)
Results: Patient are usually reviewed on the basis of ASA level though we have various tools to evaluate for perioperative myocardial infarction i.e RCRI and surgery specific

complication and patient own variable i.e investigations of blood.

Clinical Implication: Clinically it is implied that patient usually asymptomatic in acute phase of surgeries regarding perioperative myocardial infarction. Thoroughly assessment of patient to rule out risk factors is very necessary which lead foundation of proper management of perioperative myocardial infarction.

Keywords: Noncardiac surgeries, Myocardial Infarction, Perioperative

2.18 VASODILATOR EFFECT OF AQUEOUS METHANOLIC EXTRACT OF GARDEN SAGE

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Introduction: Hypertension is a chronic disease with detrimental outcomes. The management requires lifelong therapy. Its prevalence is on the rise due to lack of compliance to current management providing a justification for the search of new treatments.

Objective: The aim of this study was to investigate the traditional use of Garden Sage (*Salvia Officinalis*) as an anti-hypertensive agent by testing its crude extract (So.Cr) on isolated rat aorta.

Methods: The aerial parts of the plant were utilized to prepare the extract. Aortae from Sprague-Dawley rats were placed in 5 ml isolated tissue bath assembly, filled with Krebs'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 phenylephrine (PE, 1 μ M) and K⁺ (80 mM)-induced vasoconstriction, So.Cr caused a concentration-dependent relaxation and also caused a suppression of PE (1 μ M) control peaks in Ca⁺⁺ free medium.

Conclusions: These data indicate that the plant extract exhibits vasodilatory property. The vasodilator effect of the plant extract is mediated through inhibition of Ca⁺⁺ influx via membranous Ca⁺⁺ channels as well as Ca⁺⁺ release from intracellular stores. Future studies are required to further elaborate the blood pressure lowering activity of the plant.

Keywords: Garden Sage, vasodilator, antihypertensive

2.19

CA+2 CHANNEL BLOCKING EFFECT OF AQUEOUS METHANOLIC EXTRACT OF GARDEN CRESS SEEDS

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Introduction: Hypertension is a major health problem leading to serious target organ damage. Lifelong therapy is the only option for management resulting in lack of compliance and a rise in its prevalence. Search of new treatments is thus obligatory.

Objective: This study was aimed to investigate the vasodilator effect of the aqueous methanolic extract of Garden Cress (*Lepidium sativum*-Lp.Cr) on isolated rat aorta.

Methods: The seeds of the plant were utilized to prepare the extract. Aortae from Sprague-Dawley rats were placed in 5 ml 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 phenylephrine (PE, 1 μ M) and K⁺ (80 mM)-induced vasoconstriction, Lp.Cr caused a concentration-dependent relaxation and also caused a suppression of PE (1 μ M) control peaks in Ca⁺⁺ free medium.

Conclusions: These data indicate that the plant extract exhibits vasodilatory property. The vasodilator effect of the plant extract is mediated through inhibition of Ca⁺⁺ influx via membranous Ca⁺⁺ channels as well as Ca⁺⁺ release from intracellular stores. Future studies are required to further elaborate the Ca⁺⁺ channel blocking activity of the plant and to establish its role as a potential anti-hypertensive agent.

Keywords: Garden Cress, Ca⁺⁺ channel blocking, antihypertensive

2.20

RELATIONSHIP BETWEEN BODY IRON STORES AND RISK OF PREMATURE ACUTE MYOCARDIAL INFARCTION IN A PAKISTANI POPULATION

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Objective: To investigate whether increased body iron status has any relationship with the risk of premature AMI in Pakistani population.

Methodology/Principal findings: In this case-control study, 203 consecutive AMI patients [146 males and 57 females; age range 18–45 years] admitted to the National Institute for Cardiovascular Diseases, Karachi, were enrolled with informed consent. In addition, 205 healthy controls whose gender and age (within 3 years) matched the patients, and who had a similar socio-economic background were recruited. Fasting venous blood was obtained and assessed for plasma/serum folate, vitamin B12, homocysteine, total cholesterol, triglycerides, LDL-cholesterol, HDL-cholesterol, sTfR and ferritin and blood lead.

Result: Serum concentration of ferritin and blood lead levels were significantly higher in AMI patients compared to their age and gender-matched healthy controls (p value < 0.05), while the concentrations of vitamin B12 and HDL-cholesterol were significantly lower in AMI patients compared to controls (p value < 0.01). The ratio of sTfR to ferritin was significantly lower in AMI patients compared to controls [mean \pm SD/median (IQR) values 84.76295/28.9 (38.4) vs 2556836/49.4 (83.8), respectively; p value < 0.001]. Compared with the highest quartile of sTfR/ferritin (low body iron status), the OR for the risk of AMI was 3.29(95% CI, 1.54–7.03) for the lowest quartile (quartile 1) when the model was adjusted for vitamin B12 and HDL-cholesterol (p value for trend < 0.01).
Conclusions/Significance: This study shows a positive association between total body iron status and risk of premature AMI in a Pakistani population.

Keywords: Body iron stores, premature Acute Myocardial Infarction, Pakistani population

2.21 PHARMACOLOGICAL BASIS FOR THE MEDICINAL USE OF ANISEED IN HYPERTENSION

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Introduction: Hypertension is a significant health care challenge with rising prevalence due to lack of patient compliance. The current management is expensive and has a lot of side effects demanding a need to explore alternative methods of treatment that are less expensive and have fewer side effects.

Objective: The aim of this study was to observe the effects of the aqueous-methanolic extract of Aniseed (*Pimpinella anisum* Pa.Cr) on isolated rat aorta in order to provide the pharmacological basis for its traditional use in hypertension.

Methods: The fruits of the plant were utilized to prepare the aqueous-methanolic extract. Aortae from Sprague-Dawley rats were placed in 5 ml isolated tissue bath assembly, filled with Krebs'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 phenylephrine (PE, 1 μ M) and K⁺ (80 mM)-induced vasoconstriction, Pa.Cr caused a concentration-dependent relaxation and also caused a suppression of PE (1 μ M) control peaks in Ca⁺⁺ free medium.

Conclusions: The plant extract showed vasodilator effects mediated through inhibition of Ca⁺⁺ influx. This inhibition acted on membranous Ca⁺⁺ channels as well as Ca⁺⁺ release from intracellular stores. The data thus indicates its blood pressure-lowering potential.

However, further detailed studies are required to provide pharmacological basis for its use as an anti-hypertensive agent.

Keywords: Aniseed, vasodilator, hypertension.

2.22

EARLY ONSET OF CARDIAC DISEASE IN YOUTH

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Introduction: Cardiac disease was generally characterized as a disease of an older individuals but now it is more prevalent in young adults under the age of 40 most commonly due to unhealthy social and cultural practices. It has become a more significant public health concern. This disease brings disturbing consequences in lives of young patients and their families.

Objective: The aim of this case study is to highlight and discuss the major and possible sociocultural risk factors of Coronary Artery Diseases in young adults.

Methods: A case study was observed for the possible sociocultural risk factors under the age of 40, leading to cardiac diseases.

Comprehensive literature review of 10 research articles from 2011 to 2016 was conducted by using Science Direct, SAGE, AMA Journal and BMJ.

Results: There are certain risk factors which are significantly aiding to disease burden. It can be a personal factor, psychosocial factor or economic status. These risk factors include low self-esteem, lack of motivation, unhealthy eating and living practices, stress, sheesha consumption, cigarette smoking, peer pressure, media influence, hypertension, high cholesterol level are endangering youth of our country.

Conclusion: To limit the epidemics of non-communicable disease in youth, reduction of sociocultural risk factors are important. It is recommended to have proper surveillance, monitoring, awareness sessions on hypertension and obesity in different communities and strategic interventions must be taken to limit it. Availability and accessibility of sheesha in cafes and restaurants should be banned and strictly monitored. Frequent antismoking campaigns should be run for school and college students to aware them regarding coronary diseases.

Keywords: Youth, Disease burden, Coronary Artery Disease.

2.23

EVALUATION OF THE MEDICINAL POTENTIAL OF INDIGENOUS PLANTS – VIOLA ODORATA & WRIGHTIA TINCTORIA

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Introduction: Establishment of the medicinal potential of indigenous plants will promote their use as complementary and/or alternative therapies for chronic disorders. We have previously explored the antidiabetic and antihypertensive potentials of Viola Odorata (VO) and Wrightia Tinctoria (WT). This study extends our understanding of their medicinal value.

Objective: Here we explore the efficacy of these plants for vascular protection and prevention of hepatic damage; and identify antioxidants and phytochemicals.

Methods: Methanolic extracts were prepared. For antioxidant capacity, DPPH, ABTS, FRAP and TAC assays were done. Total phenols (TPC), flavonoids (TFC) and proanthocyanins (PC) were determined. Phenols were quantified through HPLC. Two studies were conducted on high fat diet (HFD) model. Each had four groups; Group 1: normal diet; Group 2-4: HFD; Group 3 and 4: 300 mg/kg and 600 mg/kg doses of extracts. Vascular and hepatic biomarkers were analyzed in blood after 4-weeks.

Results: Both plants showed significant in-vitro antioxidant activity, comparable to synthetic antioxidants, and contained high contents of TPC, TFC and PC. HPLC showed distinctive phenolic composition, which would underlie high antioxidant potential. In-vivo studies indicated significant prevention from hyperuricemia, hyperphosphatemia, and hepatic damage.

Conclusion: The unique phenolic contents could rationalize the antioxidant, vascular and hepatic protection by these two indigenous plants.

Keywords: Antioxidant, Vascular, Hepatic

2.24

PHARMACOLOGICAL BASIS FOR THE USE OF POLY HERBAL FORMULATION IN CARDIOVASCULAR DISORDERS USING RODENTS

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Background: A compound herbal formulation (POL4) is used in indigenous system of medicine for cardio-metabolic disorders. POL4

is popular in rural areas (Badin) of Sindh, Pakistan for its medicinal use in diabetes and associated pathologies like hypertension. This study has been designed to provide a rationale to the vernacular use of POL4 in cardiovascular disorders like hypertension.

Methods: The aqueous methanolic extracts of POL4 (POL4.Cr) and its components [Cichorium intybus (Ci.Cr), Gymnema sylvestre (Gs.Cr), Nigella sativa (Ns.Cr) and Trigonella foenum graecum (Tfg.Cr)] were prepared and assessed for their blood pressure lowering effects in anaesthetized rats, while isolated rat aortae were used to assess the vasomodulatory effects using isometric force transducer coupled with PowerLab data acquisition system.

Results: In anesthetized rats, POL4 administration caused a dose-dependent (1-100 mg/kg) fall in mean arterial pressure (MAP) with maximum effect of $85.33 \pm 1.76\%$ at 100 mg/kg, similar to the effect of verapamil. The ingredients of POL4 also showed a decrease in blood pressure with varying efficacy in following order $Ns.Cr \cong Ci.Cr > Tfg.Cr > Gs.Cr$. When tested on pre-contracted rat aortic preparations, POL4 and its ingredients caused inhibition of K^+ (80 mM)-induced contractions in a manner that Ci.Cr was the most potent followed by $Ns.Cr > Tfg.Cr > Gs.Cr \cong POL4$. However, on phenylephrine (P.E)-induced contraction, Ci.Cr and Tfg.Cr showed complete relaxation while POL4.Cr, Gs.Cr and Ns.Cr showed dual (vasoconstriction and vasodilatation) effect. To confirm Ca^{++} antagonist like activity, the Ca^{++} concentrations-response curves were constructed in the absence and presence of POL4 and its ingredients, all showed positive effect similar to verapamil. In addition, on basal tone of rat aortae, the parent formulation and its ingredients, except Tfg.Cr, exhibited partially phentolamine (1 μ M) -sensitive vasoconstriction.

Conclusion: These data show that POL4 and its constituents possess blood pressure lowering effect predominantly mediated through inhibition of Ca⁺⁺ influx via membranous Ca⁺⁺ channels and receptor operated (α -adrenergic receptor) pathways. However, the presence of partial phentolamine-sensitive components in POL4 and two of its ingredients (G. sylvestre, N. sativa) may suppress in part the excessive hypotension that is usually associated with the use of available antihypertensive drugs.

Keywords: POL4, vasomodulatory, antihypertensive

2.25 PHARMACOLOGICAL BASIS FOR THE USE OF POLY HERBAL FORMULATION IN CARDIOVASCULAR DISORDERS USING RODENTS

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Background: A compound herbal formulation (POL4) is used in indigenous system of medicine for cardio-metabolic disorders. POL4 is popular in rural areas (Badin) of Sindh, Pakistan for its medicinal use in diabetes and associated pathologies like hypertension. This study has been designed to provide a rationale to the vernacular use of POL4 in cardiovascular disorders like hypertension.

Methods: The aqueous methanolic extracts of POL4 (POL4.Cr) and its components [Cichorium intybus (Ci.Cr), Gymnema sylvestre (Gs.Cr), Nigella sativa (Ns.Cr) and Trigonella foenum graecum (Tfg.Cr)] were prepared and

assessed for their blood pressure lowering effects in anaesthetized rats, while isolated rat aortae were used to assess the vasomodulatory effects using isometric force transducer coupled with PowerLab data acquisition system.

Results: In anesthetized rats, POL4 administration caused a dose-dependent (1-100 mg/kg) fall in mean arterial pressure (MAP) with maximum effect of 85.33 ± 1.76 % at 100 mg/kg, similar to the effect of verapamil. The ingredients of POL4 also showed a decrease in blood pressure with varying efficacy in following order Ns.Cr \cong Ci.Cr >Tfg.Cr>Gs.Cr. When tested on pre-contracted rat aortic preparations, POL4 and its ingredients caused inhibition of K⁺ (80 mM)-induced contractions in a manner that Ci.Cr was the most potent followed by Ns.Cr>Tfg.Cr>Gs.Cr \cong POL4. However, on phenylephrine (P.E)-induced contraction, Ci.Cr and Tfg.Cr showed complete relaxation while POL4.Cr, Gs.Cr and Ns.Cr showed dual (vasoconstriction and vasodilatation) effect. To confirm Ca⁺⁺ antagonist like activity, the Ca⁺⁺ concentrations-response curves were constructed in the absence and presence of POL4 and its ingredients, all showed positive effect similar to verapamil. In addition, on basal tone of rat aortae, the parent formulation and its ingredients, except Tfg.Cr, exhibited partially phentolamine (1 μ M) -sensitive vasoconstriction.

Conclusion: These data show that POL4 and its constituents possess blood pressure lowering effect predominantly mediated through inhibition of Ca⁺⁺ influx via membranous Ca⁺⁺ channels and receptor operated (α -adrenergic receptor) pathways. However, the presence of partial phentolamine-sensitive components in POL4 and two of its ingredients (G. sylvestre, N. sativa) may suppress in part the excessive hypotension that is usually associated with the use of available antihypertensive drugs.

Keywords: antihypertensive, Ca⁺⁺ antagonist, vasomodulatory

2.26 EFFECTIVENESS OF AN INTERVENTIONAL PROGRAM FOR THE MANAGEMENT OF HYPERTENSION THROUGH STRENGTHENING OF HEALTH CARE DELIVERY SYSTEM: A PILOT STUDY

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Abstract Background: The aim of the study was to assess the effectiveness of an interventional program to improve hypertension management through strengthening of health care delivery system.

Methods: A pilot study was conducted from February to December 2014 in two off-site Family Medicine clinics of the Aga Khan Hospital Karachi, Pakistan. Patients aged > 40 years, with known hypertension were included. At the intervention site, Family Physicians were trained; individual and group education sessions were conducted for catchment population, while usual care was provided at the control site. Referral system between primary, secondary and tertiary levels of care was strengthened. Data was entered and analyzed in SPSS version 19. T-test for independent sample was used for comparison between intervention and control groups.

Results: 118 patients were recruited but 90 patients (44 intervention, 46 control group) were included in the final analysis. Mean age of patients in intervention group was 50.5+ 8.7 years in comparison to 52.0 +8.3 years in the

control group. A statistically significant mean difference was observed in systolic BP control in the intervention group (140.2 + 14.6 mm Hg) after a follow-up of six months. There was a significant difference in the mean scores of satisfaction levels between intervention (3.9 + 0.2) and control groups (3.7 + 0.2, P=0.003). Post intervention, 55% of patients in the intervention group and 39% in the control group were taking antihypertensive medications regularly.

Conclusion: Intervention at primary care level along with strengthening of health care delivery system should be undertaken to better manage hypertension.

Keywords: Hypertension, Primary Health Care, Health System

2.27 CONSIDERABLY HIGH PHENOLIC CONTENT AND ANTIOXIDANT ACTIVITY OF MUCUNA PRURIENS SEEDS

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Introduction: The necessity of drugs extracted from plants is high, because of the frequently encountered side-effect-nullifying potential of natural products. The aim of this study was to evaluate the antioxidant activity and phenolic composition of the seeds of *Mucuna pruriens* – an important plant in Unani and Ayurvedic medicine. *Methods:* In-vitro antioxidant activity was determined using DPPH, ABTS, FRAP and TAC assays. Considering the role of phenolic compounds towards antioxidant activity of

medicinal plants, total phenols (TPC), flavonoids (TFC) and proanthocyanins (PC) were also determined. Liquid chromatography (HPLC) was used to quantify individual phenolic compounds.

Results: *M. pruriens* showed high antioxidant activity in all testing systems including DPPH (14.6 IC₅₀ µg ml⁻¹), ABTS (16.8 IC₅₀ µg ml⁻¹), FRAP (5.1 mMol Fe⁺² g⁻¹) and TAC (276.8 mg AsA g⁻¹). The antioxidant activity of *M. pruriens* was comparable to or even better than synthetic antioxidants (BHT and BHA). *M. pruriens* contained high amount of TPC (67.9 mg GAE g⁻¹), TFC (20.2 mg QE g⁻¹) and PC (3.1 mg CE g⁻¹). HPLC analysis showed the distinctive composition of phenolic compounds: gallic acid, resorcinol, pyrocatechol, caffeic acid and quercetin, in which pyrocatechol (11.4 mg g⁻¹) and caffeic acid (39.2 mg g⁻¹) were the most abundant phenolic metabolites.

Conclusions: The unique phenolic composition could rationalize the antioxidant and related therapeutic effects of *M. pruriens*. This study highlights the potential of *M. pruriens* as a potential source of natural antioxidants and other valuable bioactive compounds which could be useful for pharmaceutical, nutraceutical and other chemical industries.

Keywords: Indigenous plants, HPLC, Antioxidant

2.28

PHYTOCHEMICAL SCREENING AND IN VITRO ANTIOXIDANT POTENTIAL OF ASPARAGUS OFFICINALIS

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Introduction: *Asparagus officinalis* [Urdu: Halyun; Sindhi: Kootri] is consumed worldwide, and has long been used as herbal remedy for several diseases. Its roots are used against hemorrhoids, and the decoction of roots is used for its diuretic properties. This study was aimed at exploring methanolic extract of roots of *A. officinalis* for oxidative properties and phenolic profile.

Methods: 70% methanol extract was prepared from the seeds of *A. officinalis*, and in-vitro antioxidant assays based on DPPH, ABTS, FRAP and TAC tests, were conducted. Since phenolic compounds may considerably contribute to the biological activities of medicinal plants, including anti-oxidation, so total phenols content (TPC), total flavonoids content (TFC) and proanthocyanins content (PC) were determined. HPLC was used to quantify distinct phenols.

Results: High antioxidant activity was seen in all testing systems by the *A. officinalis* seed extract: DPPH (44.1 IC₅₀ µg ml⁻¹ µ ml⁻¹), ABTS (25.2 IC₅₀ µg ml⁻¹ µ ml⁻¹), FRAP (2.8 mMol Fe⁺² g⁻¹) and TAC (78.2 mg AsA g⁻¹). This activity was comparable to, or even better than synthetic antioxidants. High amount of TPC (33.4 mg GAE g⁻¹), TFC (12.3 mg QE g⁻¹) and PC (1.5 mg CE g⁻¹), were obtained from the extract. Among phenolic compounds, HPLC showed pyrocatechol (5.6 mg g⁻¹), caffeic acid (29.3 mg g⁻¹), syringic acid, p-coumaric acid, ferulic acid and kaempferol to be among the noticeable metabolites.

Conclusions: *A. officinalis* roots have antioxidant properties. This, together with roots' phenolic content, may be the reason behind the medicinal properties of the roots.

Keywords: Indigenous plant, HPLC, antioxidant

2.29

CELASTRUS PANICULATUS SEEDS – IN VITRO ANTIOXIDANT ACTIVITY AND PHENOLIC CONTENT

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Introduction: The seeds of *Celastrus paniculatus* have been suggested for several ailments in the Ayurvedic system of medicine. Its seeds have shown nootropic (memory enhancing) and similar effects. The objective of the current investigation was to study the methanolic extract of *C. paniculatus* seeds for their phytochemical content and antioxidant potential.

Methods: Methanolic extract was prepared from seeds of *C. paniculatus*, using standard protocols. FRAP, ABTS, DPPH and TAC assays were used to determine the in-vitro antioxidant potential. Total contents of phenols, flavonoids and proanthocyanins, of this *C. paniculatus* extract were determined. Quantification of these phenolic compounds was done using High Performance Liquid Chromatography (HPLC).

Results: *C. paniculatus* extract showed significant antioxidant activity in FRAP (2.2 mMol Fe+2 g-1), ABTS (47.3 IC50 µg ml-1), DPPH (89.7 IC50 µg ml-1) and TAC (67.3 mg AsA g-1). High concentrations of total phenols (28.1 mg GAE g-1), flavonoids (10.1 mg QE g-1) and proanthocyanins (0.82 mg CE g-1) were found to be present in the extract. Characteristic composition of phenolic compounds was obtained through HPLC with gallic acid, pyrocatechol, caffeic acid and p-coumaric acid. The most abundant metabolites were

pyrocatechol (3.6 mg g-1) and caffeic acid (18.8 mg g-1).

Conclusions: The characteristic phenolic profile of *C. paniculatus* seeds may likely be the reason behind this plant's strong antioxidant properties and health benefits.

Keywords: Indigenous Plant, HPLC, Antioxidant.

2.30

PHYTOCHEMICAL PROFILE AND ANTIOXIDANT ACTIVITY OF ORCHIS MASCULA

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Introduction: *Orchis mascula*, locally known as Salab Misri, is an important plant in Unani and folk medicine for treating several ailments. The testicle-shaped roots are the reason behind its name: *Orchis* in Greek means testicle. The aim of the study was phytochemical evaluation and antioxidant analysis of the methanolic root extract of *O. mascula*.

Methods: Extract from *O. mascula* roots were prepared in 70% methanol. In-vitro antioxidant tests were performed on this extract, including TAC, ABTS, DPPH and FRAP assays. For phytochemical screening, total contents of flavonoids, phenols and proanthocyanins were estimated. High performance liquid chromatography (HPLC) was used to identify, quantify and standardize the phenols.

Results: Noticeable prevention from oxidative stress, was observed by the plant extract, in all

testing systems: TAC (55.6 mg AsA g-1), ABTS (83.4 IC50 µg ml-1), FRAP (1.9 mMol Fe+2 g-1) and DPPH (93.4 IC50 µg ml-1). *O. mascula* roots had high amounts of flavonoids (7.2 mg QE g-1), phenols (22.5 mg GAE g-1) and proanthocyanins (1.5 mg CE g-1). HPLC presented gallic acid (8.1 mg g-1), caffeic acid (45.5 mg g-1) and p-coumaric acid (0.1 mg g-1) to be the prominent phenolic metabolites.

Conclusions: Strong antioxidant activity together with phenolic contents in the roots of *O. mascula* may provide the reason behind its folkloric and scientifically reported medicinal affects.

Keywords: Indigenous Plant, HPLC, Antioxidant

2.33

CASE REPORT OF TWO CONGENITAL ANOMALIES IN A SEPTUAGENARIAN: A RARE OCCURRENCE.

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Background: Atrial septal defect(ASD) is a cardiac anomaly that causes shunting of blood between the pulmonary and systemic circulation. ASD of significant size with right-sided heart dilatation are associated with morbidity and mortality. Ductus Arteriosus is a normal vascular structure that connects descending aorta to the pulmonary artery in the embryonic period, becoming abnormal if it remains patent after the first few weeks of life(PDA). It accounts for 14% of all congenital heart defects and a mortality rate of 1.8% per year in adults. Their coexistence in an elderly patient, with first presentation at 70 years of age,

is a rarity and has not been described in local literature.

Case: We present the case of a septuagenarian lady with a one week history of dyspnea with high blood pressure(BP) and signs of heart failure. Her chest X-ray revealed gross cardiomegaly with pulmonary edema. Her transthoracic echo revealed severe biatrial and mild right ventricular enlargement and an ejection fraction of 30%(global hypokinesia). There was a PDA with a left to right shunt and a secundum ASD(14mm in diameter) with a left to right shunt. She was diagnosed with a cardiac decompensation due to congenital heart disease and elevated BP and was managed conservatively. She was offered cardiac catheterization but she refused based on her faith in the divine that she lived long enough with two rare anomalies and believed she would live longer without further intervention.

Discussion: The average life expectancy of females in Pakistan is 67 years. In such a country, our patient's survival into the 70 th decade with two uncorrected anomalies to beyond average life expectancy is indeed interesting. PDA and ASD in this age are rare. It is important to have knowledge of congenital anomalies while thinking commonalities in this age group. Reaching a correct diagnosis, one can treat patients effectively.

Keywords: Atrial Septal Defect, Patent Ductus Arteriosus, Heart Failure

2.34

CORRELATION OF POST-CLINIC BLOOD PRESSURE READINGS WITH 24 HOUR AMBULATORY BLOOD PRESSURE MONITORING (PRELIMINARY RESULTS)

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Background: In-clinic blood pressure (BP) readings cannot overcome white coat effect. Ambulatory BP monitoring (ABPM) more accurately represents mean BP than clinic readings making it a reference standard for diagnosing hypertension. ABPM has limitations like expense, long duration and lack of widespread availability necessitating an alternative. We previously showed that 15minutes post-clinic BP was the lowest reading throughout a clinic. Therefore, aim of this study was to correlate post-clinic BP with ABPM readings.

Methods: A cross-sectional study, starting May 2015, was conducted on patients, aged ≥ 18 years, visiting cardiology clinic who were either hypertensive or referred for its diagnosis. Pregnant females 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). Then a 24hour-ABPM device was applied on all participants.

Results: Till date 70 participants were recruited. 84% were hypertensive. Mean (SD) SBP taken pre-clinic, in-clinic, 15minutes post-clinic: 148.3 \pm 23mmHg, 147.8 \pm 22mmHg, 137.7 \pm 19mmHg, respectively. Mean (SD) DBP taken pre-clinic, in-clinic, post-clinic were: 81.5 \pm 12mmHg, 88.4 \pm 12mmHg, 85.1 \pm 11mmHg

respectively. Mean (SD) pulse taken pre-clinic, in-clinic, post-clinic were: 77.5 \pm 16/minute, 73.1 \pm 14/minute, 70.2 \pm 14/minute and 70.1 \pm 10/minute, respectively. Mean 24hr-overall ambulatory SBP, DBP and pulse readings were 127.8 \pm 17mmHg, 74.0 \pm 9mmHg and 70.1 \pm 10/minute, respectively. Mean daytime ambulatory SBP, DBP and pulse readings were 133.1 \pm 15mmHg, 76.7 \pm 9mmHg and 72.5 \pm 10/minute, respectively. The Pearson correlation values of pre-clinic, in-clinic and post-clinic SBP with 24hr-overall ambulatory-SBP were 0.260 (p-value:0.034), 0.402 (p-value:0.001) and 0.414 (p-value:0.000), respectively. The Pearson correlation values of pre-clinic, in-clinic and post-clinic SBP with daytime ambulatory-SBP were 0.466 (p-value:0.000), 0.615 (p-value:0.000) and 0.656 (p-value:0.000), respectively.

Conclusion: We show that post-clinic SBP correlates well with daytime ambulatory SBP hence post-clinic and daytime ABP mean are reflective of true BP. Preliminary results from this study are promising and emphasize the importance of post-clinic BP as an important surrogate for ABP measurement. However, with better power, we can highlight this further in the future.

Keywords: Hypertension, Blood pressure, Ambulatory blood pressure monitoring

2.35

CORONARY HEART DISEASE AND HOUSEHOLD AIR POLLUTION FROM USE OF SOLID FUEL: A SYSTEMATIC REVIEW

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Background: Evidence is emerging that indoor air pollution (IAP) from use of solid fuels for cooking and heating may be an important risk factor for coronary heart disease (CHD).

SOURCES OF

Data: We searched the Ovid Medline, Embase Classic, Embase and Web of Science databases from inception through to June 12, 2015, to identify reports of primary epidemiological research concerning the relationship of CHD to IAP from solid fuel, the likely magnitude of any increase in risk, and potential pathogenic mechanisms. *AREAS OF AGREEMENT:* The current balance of epidemiological evidence points to an increased risk of CHD from IAP as a consequence of using solid, and especially biomass, fuels for cooking and heating. Relative risks from long-term exposure could be 2- to 4-fold. *AREAS OF*

Controversy: The evidence base is still limited, and although an association of CHD with such IAP from solid fuel is consistent with the known hazards from smoking, environmental tobacco smoke and ambient air pollution, and supported by evidence of effects on inflammatory processes, atherosclerosis and blood pressure, it requires confirmation by larger and more robust studies.

Growing Points: The completion of two relatively small case-control studies on CHD and IAP from use of biomass fuel demonstrates the feasibility of such research, and is an

encouragement to further, larger studies using similar methods.

Areas Timely For Developing Research: The need for such research is particularly pressing because the incidence of CHD in developing countries is rising, and IAP may interact synergistically with the risk factors that are driving that increase. Furthermore, relatively cheap methods are available to reduce IAP from use of solid fuels, and there are indications from intervention studies that these may impact beneficially on CHD as well as other diseases caused by such pollution.

Keywords: biomass, coronary heart disease, solid fuel

2.36

PAN-ASIAN RESUSCITATION OUTCOMES STUDY NETWORK: A REGISTRY FOR OUT OF HOSPITAL CARDIAC ARREST IN KARACHI

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Introduction: Sudden cardiac arrest is the most common cause of pre-hospital and in-hospital deaths worldwide. In west it is 50% while in Pakistan approximately 80% of cases of sudden death from cardiac causes occur at home or out of hospital.

Objective: To affect community awareness and change attitudes toward pre-hospital emergency care and improve survival by future implementation.

Methods: This is an ongoing prospective observational study on cardiac arrest patients presenting to emergency departments of three hospitals of Karachi, Pakistan from September

2016. These hospitals include Jinnah Postgraduate Medical Center, Tabba Heart Institute, Karachi Institute of Heart disease and Aga Khan University Hospital. The Utstein definitions for Out of Hospital Cardiac Arrest were used for data collection.

Results: We enrolled 317 patients out of which only 35(11%, 95% CIs = 0.08 to 0.15) received bystander CPR and 32(91%) conveyed to ED. We found VF/VT as first cardiac rhythm on 21(7%, 95% CIs = 0.04 to 0.09) patients on their arrival to ED. Defibrillation was performed only in 5(24%) patients. Return of spontaneous circulation was in 16(5%, 95% CIs = 0.03 to 0.08) patients but only 3(0.95%) survived till.

Conclusion: Current pre-hospital care system and patient management for cardiac arrest patient has not shown very positive results from our study. Hence it is suggested that BLS/Hands only CPR training as well as community awareness and change attitudes toward pre-hospital emergency care can improve survival in future.

Keywords: Out of hospital cardiac arrest, by stander CPR, Pakistan.

2.38

THE STATUS OF DIASTOLIC DYSFUNCTION IN CORONARY ARTERY DISEASE PATIENTS ADMITTED FOR CORONARY ARTERY BYPASS GRAFT OPERATION: A SINGLE CENTER EXPERIENCE

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Objectives: Diastolic dysfunction of the heart can occur alone or with systolic dysfunction

with or without heart failure symptoms. As diastolic dysfunction and coronary artery disease are closely interrelated, we aim to assess the status of diastolic dysfunction in patients with advanced coronary artery disease admitted for revascularization therapy.

Methods: Retrospective analysis of advanced coronary artery disease patient records admitted for coronary artery bypass operation was done. Patients were divided into groups I and II with ejection fraction (EF) $\geq 50\%$ and $< 50\%$ respectively. Echocardiography records were used to assess cardiac morphology, systolic and diastolic functions.

Results: Groups I and II showed body mass index of 29 kg/m² vs 25 kg/m² and frequency of hypertension 80% vs 63% respectively. Electrocardiogram showed higher rate (47%) of ST-Elevation Myocardial Infarction in group II and Non ST-Elevation Myocardial Infarction (NSTEMI) (27%) in group I. Group I showed E/e' ratio of 13 against 17 in group II. There was an inverse correlation between EF and E/e'. 33% patients with diastolic dysfunction and preserved ejection fraction presented with and 67% without heart failure symptoms.

Conclusions: In patients with advanced coronary artery disease, severity of diastolic dysfunction increases progressively with reduction in EF. Patients with preserved EF are comparatively hypertensive, obese and have previously had an NSTEMI. One third of the patients with preserved ejection fraction and diastolic dysfunction had a history of heart failure. Therefore, diastolic function status in patients with advanced coronary artery disease deserves attention irrespective of their EF status.

Keywords: Coronary artery disease, diastolic dysfunction, coronary artery bypass graft

2.39

APICAL HYPERTROPHIC CARDIOMYOPATHY: APPLICATION OF 2D STRAIN IMAGING

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Background: Hypertrophic cardiomyopathy (HCM) is commonly documented entity on echocardiography. The apical variant, also known as ‘Japanese variant’, is infrequent and frequently poses a diagnostic dilemma. There has been a revival of interest in the diagnosis of apical HCM with the advent of novel imaging techniques such as strain imaging. Two-dimensional strain echocardiography analyses tissue velocities by frame-to-frame tracking of acoustic markers within the image and gives strain parameters comparable with tissue-Doppler-derived strain. Doppler-only based methods are inadequate because of angle dependence of the signal preventing the assessment of apical left ventricular function. This unique technology is not Doppler angle-dependent and might have a potential role in the rapid diagnosis of this condition. We describe paradoxical reduced apical strain without overt apical dyskinesis in a patient with apical HCM, using 2D strain imaging. Our case report highlights a novel application of 2D strain imaging that could ease the diagnosis of apical HCM.

Case presentation: A 43 years old gentle man, ex-smoker quitted since 15 years had history of suffocation and shortness of breath on exertion since 15 years. His symptoms have progressed to the extent that led to decrease in his physical activity. He underwent a coronary angiogram and left ventriculogram in 2003, 2007 and 2015 based on his progressive symptoms, which

showed no significant disease in his coronaries and hypertrophied myocardium. He denies any pre-syncope or syncope and no family history of sudden death or similar problem.

He presented to us and was advised a transthoracic echocardiogram, which showed left ventricular apical hypertrophy and diastolic dysfunction. We did longitudinal strain imaging which interestingly showed significantly reduced apical strain as compared to basal segments suggestive of apical variant of hypertrophic cardiomyopathy.

Conclusion: The diagnosis of apical HCM can be challenging, requiring other expensive imaging modalities like cardiac MRI, contrast-enhanced echocardiography, or left ventricular angiography. Two-dimensional (2D) strain, on the other side, can be quickly assessed from routine echocardiographic images and seems to be a promising unique application, mainly suitable for the diagnosis of suspected apical HCM.

Keywords: Apical hypertrophic cardiomyopathy; Strain imaging

2.40

SIMULTANEOUS OCCLUSION OF TWO CORONARY ARTERIES TREATED WITH INTRACORONARY STREPTOKINASE UPFRONT AND AS A SOLE AGENT TO COMPLETE REVASCULARIZATION

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Background: In patients presenting with sudden onset dyspnea and hypoxia to acute care units, pulmonary embolism with obstruction of a pulmonary artery by a thrombus is considered a

leading cause. The visualization of free floating right heart thrombus is rare and even rarer is a 2-D echocardiographic recording of transition of thrombus from right heart into the pulmonary vasculature leading to pulmonary embolism. We present a case of an elderly man in whom a routine 2-D bed side echo recorded the transit of a thrombus in to the right pulmonary artery leading to pulmonary embolism.

Case Report: A 70 year old man known case of bronchiectasis who presented to emergency department with symptoms of shortness of breath, cough and increased quantity and purulence of sputum for last 2 weeks he was managed as having community acquired pneumonia

A bedside Transthoracic Echo was done that showed a very large, mobile echogenic density around 6x6 cm in size was noted in the right atrium consistent with thrombus. Visually estimated ejection fraction was approximately 55-60. Severe tricuspid regurgitation was noted with peak pressure gradient of 60 mmHg. Estimated pulmonary artery systolic pressure was approximately 65 mmHg.

On reassessing the right atrium, in the same setting, it was noted that the large, mobile thrombus noted in the right atrium in the beginning of the study disappeared from the right atrium and was visualized lodged in the right pulmonary artery.

The patient during this period remained hemodynamically stable and did not decompensate clinically. He was started on therapeutic anticoagulation, initially with low molecular weight heparin and then switched to warfarin. aspiration of clot but was deferred as the patient remained hemodynamically stable. The patient was discharged on warfarin.

Conclusion: In this report, we presented a case of mobile right heart thrombus leading to pulmonary embolism. Many cases of mobile right heart thrombus have been reported in the

literature⁵, but this case is interesting in that we witnessed the migration of the huge thrombus from the right atrium to the pulmonary artery that was recorded on bedside 2-D echo

Keywords: Thrombus in Transit, Portable Echocardiography

2.41 THROMBUS CAUGHT IN MOTION; ECHOCARDIOGRAPHIC EVIDENCE OF TRANSIT OF A GIANT, FREE-FLOATING THROMBUS FROM RIGHT ATRIUM INTO THE PULMONARY ARTERY LEADING TO PULMONARY EMBOLISM

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Background: In patients presenting with sudden onset dyspnea and hypoxia to acute care units, pulmonary embolism with obstruction of a pulmonary artery by a thrombus is considered a leading cause. The visualization of free floating right heart thrombus is rare and even rarer is a 2-D echocardiographic recording of transition of thrombus from right heart into the pulmonary vasculature leading to pulmonary embolism. We present a case of an elderly man in whom a routine 2-D bed side echo recorded the transit of a thrombus in to the right pulmonary artery leading to pulmonary embolism.

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A bedside Transthoracic Echo was done that showed a very large, mobile echogenic density around 6x6 cm in size was noted in the right atrium consistent with thrombus. Visually estimated ejection fraction was approximately 55-60. Severe tricuspid regurgitation was noted with peak pressure gradient of 60 mmHg. Estimated pulmonary artery systolic pressure was approximately 65 mmHg.

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Keywords: Thrombus in Transit, Portable Echocardiography

2.42

TO DETERMINE THE FREQUENCY OF HYPONATREMIA AND ITS IMPACT ON IN-HOSPITAL OUTCOME IN PATIENT OF ACUTE ST ELEVATED MYOCARDIAL INFARCTION

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Objective: To determine the frequency of hyponatremia in patients of acute STEMI. Its impact on in-hospital outcome in patients with Acute ST elevated myocardial infarction.

Introduction: Acute myocardial infarction (AMI) is one of the most common diagnoses made in hospitalized patients in industrialized countries.¹ it is a growing cause of death worldwide. Recently, some studies have shown that hyponatremia is linked to poor outcomes in patients with ST-elevation myocardial infarction (STEMI) and non-ST elevation acute coronary syndrome and the risk of mortality increased with the severity of hyponatremia.

Qing tang and Qi Hua observed between January 2002 and May 2008, in Xuan wu Hospital, Beijing with enrolment of 1620 of patients with acute Myocardial Infarction (AMI), this study demonstrated that hyponatremia was present in 13.1% of patients. Overall in-hospital mortality was 8.1%:7.3% of patients without hyponatremia, 13.7% of patients with hyponatremia. In-hospital adverse outcome was significantly was higher in Chinese patients with hyponatremia as compared to normal serum sodium level.

Hyponatremia is a known cause of morbidity and mortality in these patients, although it is a treatable condition. The influence of hyponatremia on the prevalence and prognosis in these patients with Acute STEMI has been un-clarified. Therefore it is necessary to investigate the relationship of hyponatremia and in-hospital outcomes in these patients with Acute STEMI.

Methodology:

Study Setting: Aga Khan University Hospital, Karachi

Duration Of Study: Six months after approval of synopsis.

Study Design: Case series study

Sample Size: The sample size required to estimate the frequency of hyponatremia in STEMI patients presenting to Aga Khan University hospital is based on previous estimates of 13% reported by Qing Tang and Qi Hua (reference). Therefore, in order to estimate the proportion of hyponatremia between 10% to 15%, using 95% level of confidence and 5% margin of error, a minimum sample of 225 STEMI patients was calculated, after inflating by 15% to account for non-response. The sample size is also sufficient to test for a 15% higher mortality among hyponatremia STEMI patients above the 7% mortality reported in patients with normal sodium levels, with a confidence 95% and a statistical power of 80%

Conclusion: The aim of the study is to prioritize the patient with acute STEMI according to sodium levels and helpful for the prognosis assessment

Keywords: Hyponatremia, Acute STEMI, In-hospital mortality

2.43

DIASTOLIC DYSFUNCTION IN CORONARY ARTERY DISEASE

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Background/Objectives: Diastolic dysfunction of the heart can occur alone or with systolic dysfunction with or without heart failure symptoms. As diastolic dysfunction and coronary artery disease are closely interrelated, we aim to assess the status of diastolic dysfunction in patients with advanced coronary artery disease admitted for surgical revascularization therapy.

Methods:

Study Design: Retrospective analysis of advanced coronary artery disease patient records admitted for coronary artery bypass operation.

Place And Duration Of Study: Aga Khan University Hospital, from 2013 to 2015.

Patient & Methods: Hospital records of 34 patients admitted for coronary artery bypass graft operation were studied retrospectively. Patients were divided into groups I and II with ejection fraction (EF) $\geq 50\%$ and $< 50\%$ respectively. Echocardiography records were used to assess cardiac morphology, systolic and diastolic functions.

Results: Groups I and II showed body mass index of 29 kg/m² vs 25 kg/m² and frequency of hypertension 80% vs. 63% respectively. Electrocardiogram showed higher rate (47%) of ST-Elevation Myocardial Infarction in group II and Non ST-Elevation Myocardial Infarction (NSTEMI) (27%) in group I. Group I showed E/e' ratio of 13 against 17 in group II. There was an inverse correlation between EF and E/e'. 33% patients with diastolic dysfunction and preserved ejection fraction presented with and 67% without heart failure symptoms.

Conclusions: In patients with advanced coronary artery disease, the severity of diastolic dysfunction increases progressively with reduction in EF. Patients with preserved EF are comparatively hypertensive, obese and have previously had a NSTEMI. There is a considerable frequency of heart failure in these patients which makes it imperative to focus on the diastolic function status in patients with advanced coronary artery disease irrespective of their EF status.

2.44

CORONARY ARTERY EMBOLIZATION CAUSING MYOCARDIAL INFARCTION- WHEN THE PROSTHETICS ARE THE CULPRIT!

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Case Report: 34 years old gentle man, with history of dual valve replacement with bi-leaflet mechanical valve in 2005. Non-compliance to warfarin therapy from 2007 onward presented with the complaints of right sided chest pain, of one hour duration to a local hospital. The pain was sudden in onset and occurred at res radiated to left shoulder and neck. His EKG revealed ST-T changes and cardiac biomarkers were elevated but he left against medical advice. Due to recurrent chest pain he came to our hospital. Physical examination was unremarkable except metallic first and second heart sound. He underwent coronary angiogram that showed well circumscribed filling defects in his left anterior descending artery and its branches consistent with embolic phenomenon. As he had been noncompliant to his drugs and had sub therapeutic levels of international normalizing ratio (INR) the metallic valves were thought to be the source of embolization and there for his anticoagulation therapy was adjusted for target INR of 3-3.5. He was discharged on request with advice to follow- up in outpatient clinic.

Discussion: Term Myocardial Infarction should be used when there is evidence of myocardial necrosis in a clinical setting consistent with acute myocardial ischemia. Underlying diseases predisposing to coronary emboli as a cause of infarction included Valvular heart disease (40%), Cardiomyopathy (29%), coronary atherosclerosis (16%), and chronic atrial fibrillation (24%), Mural thrombi (33%). Among

them myocardial infarction is clinically diagnosed in 15 (27%) patients and causes death in 11 (20%). Coronary emboli are not very rare, may produce signs and symptoms indistinguishable from atherosclerotic coronary disease. The lodge distally in coronary arteries that are usually previously normal, they most often cause small but transmural myocardial infarctions.

Conclusion: coronary artery embolization originating from metallic valves is one of the unusual causes of myocardial infarction. Here understanding the mechanism of MI is the key to diagnosis and management. They are rare but carry significant morbidity and mortality and a high likelihood of suspicion is required for the diagnosis and management of such cases for better outcome.

2.45

INTERRUPTED AORTIC ARCH COMPLICATED BY TAKOTSUBO CARDIOMYOPATHY AND INTRACRANIAL HEMMOHRAGE MIMICKING AORTIC DISSECTION-CASE REPORT

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Case Report: 50 years old gentleman presented to the emergency department with irritability, diaphoresis and interscapular pain (upper back). He was electively intubated for CT scan chest to rule out aortic dissection. There was no aortic dissection on initial scan and he was shifted to cardiac catheterization laboratory. Right femoral artery was cannulated under fluoro because of the weak pulse but the diagnostic catheter could not be advanced. The radio contrast injection showed complete obstruction of the descending aorta. Coronary angiogram via right radial approach showed non obstructive disease in the coronaries. The aortogram showed complete interruption with extensive collaterals network.

Electrocardiogram showed ST elevation in precordial leads. Echocardiogram in emergency showed severe left ventricular dysfunction. The troponin-I was 2.5 ug. Post extubation the patient remained in acute confusion. The Electroencephalogram showed theta slowing. An emergent MRI of the brain showed intracranial bleed extending into the ventricles. He died on day eight of the hospital stay due to the apnea and brady arrest.

Discussion: Interrupted aortic arch (IAA) is defined as the complete loss of luminal continuity between the ascending and the descending aorta. It is a rare congenital malformation as mentioned in one case report to be 3/1000, 000 live births. Majority of the cases are fatal in very early childhood due to the lack of extensive collaterals necessary to maintain the distal flow and closure of patent ductus arteriosus (PDA). Diagnosis of IAA can be made by Invasive and non-invasive techniques either incidentally as in our case or anticipating it by doing a careful examination of young adults with chief complaints of hypertension. Clinical presentation varied from failure to thrive in neonates hypertension (most common), Chronic fatigue, Nonspecific chest pain (due to collaterals), heart failure (rarely). Presentation mimicking aortic dissection or acute MI has not been reported yet. On review of the literature we found few case reports on IAA in adult patients. Isolated IAA without other congenital cardiac anomalies in adults is still rarer. Initial presentation of our patient raised a high suspicion of aortic dissection that turned out to be an Interrupted aortic arch with stress induced cardiomyopathy. We think that his clinical presentation was a combination of more than one cause. This emphasizes the role of good history and physical examination in diagnosing diseases with high mortality which are rare, such as IAA in adults which join the two factors

Conclusion: This case highlights the importance of unusual presentations of rare causes (like isolated interrupted aortic arch) of common disease like hypertension in uncommon age group. Anticipating rare causes may have an impact on the outcome of the disease. Isolated Interrupted Aortic Arch is a very rare cause of hypertension in adult patients and was an

incidental finding that should be picked up in initial examination.

2.46

FREQUENCY OF VARIOUS CIRCADIAN BLOOD PRESSURE PROFILES IN HYPERTENSIVE PATIENTS UNDERGOING 24 HOUR ABP MONITORING.

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Objective: To assess frequency of various circadian BP profiles in hypertensive patients undergoing ABPM

Background: Global prevalence of hypertension in adults aged 18 years and over was around 22% in 2014, it is estimated to cause 9.4 million deaths. National Health Survey of Pakistan estimated that hypertension affects 33% of adults above 45 years old. ABP is useful as casual office BP readings are influenced by various factors & don't represent basal BP. The normal reduction in early morning blood pressure compared with average daytime pressure is referred as nocturnal dip, normally it is more than 10% from daytime BP. Individuals who do not exhibit this are referred to as non-dippers. Non-dipping profile is associated with target organ damage and is a risk factor for cardiovascular and cerebrovascular complications e.g. left ventricular hypertrophy/remodeling and mortality. Therefore identification of nocturnal dippers is of clinical and prognostic significance.

Method: It will be an observational cross sectional study, conducted on hypertensive patients aged 20 to 80 years undergoing ABPM at AKUH, data collection will span over 6 months, non-probability, consecutive sampling technique will be used for sampling. Based on nocturnal fall pattern, frequencies of four subgroups will be identified namely dippers,

non-dippers, extreme dippers, and reverse dippers. Frequency of non-dipper profile has previously been reported around 21%. So in order to estimate frequency of loss of nocturnal dip in our population within this range, a minimum sample of 180 would be evaluated.

Results: Study still to be concluded

Conclusion: Study still to be concluded

Keywords: Ambulatory blood pressure monitoring, nocturnal dip, hypertension

2.47

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

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Objective: To determine frequency of mean QT interval dispersion in patients with acute coronary syndrome at presentation and at 72 hours at a tertiary care hospital in Pakistan.

To determine the association of prolonged QT interval dispersion with In-hospital mortality.

Background: Prolonged QT_{dc} interval on ECG in coronary ischemia is a well-known sign to consider in estimating ischemic risk. The early appearance of QT_c 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.

Methods: The study design is cross-sectional. It will be done under the section of Cardiology, at Aga Khan University hospital Karachi after getting approval from ethical committee. The study will be completed six months after acceptance of synopsis. 160 participants would

be required to meet both our study objectives and it will be done by non-probability purposive sampling. The inclusion criteria includes all patients admitted with acute coronary syndrome while exclusion criteria includes; presentation after 48 hours, previous ECG showing QRS duration > 120 msec, prior bundle branch block or other intraventricular conduction delay on ECG, previously on medications affecting QRS duration or QT interval, prior Pacemaker implantation, prior known channelopathies (long QT syndrome, short QT syndrome, Brugada syndrome), severe electrolyte imbalance and prior history of myocardial infarction.

Results: (currently under study)

Conclusion: The study aims to highlight the importance of measuring QT_{dc} in patients with acute coronary syndrome and to establish its association with adverse cardiac events by providing research evidence in our population and will help in identification and implementation of better protocols for the triage and early management.

Keywords: acute coronary syndrome, QT interval dispersion, in-hospital mortality

2.48

FREQUENCY AND FACTORS LEADING TO NON-COMPLIANCE OF ANTIPLATELET MEDICATION AT THREE MONTHS POST-PERCUTANEOUS CORONARY INTERVENTION

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Background: Coronary artery disease is one of the most common causes of death in the world. It is associated with significant morbidity and mortality. Coronary artery revascularization with percutaneous coronary intervention or CABG is

the cornerstone for treatment of coronary artery disease. Drugs such as Angiotensin Converting Enzyme Inhibitors (ACE-I), beta blockers, statins and antiplatelet medication is associated with mortality benefit in coronary artery disease. Antiplatelet medication in particular is essential in the treatment of coronary artery disease especially after revascularization with percutaneous coronary intervention (PCI). Cessation of antiplatelet medication is associated with stent thrombosis that may result in myocardial infarction, repeat revascularization or death. Compliance to cardiac medication in general is low. Numerous studies have been done worldwide looking at compliance to cardiac medication. However such studies have rarely been done in Pakistan. The objective of our study is to determine frequency and factors that are associated with non-compliance to antiplatelet medication 3 months post-PCI.

Methods: The study will be carried out at Aga Khan University Hospital. It will be a cross sectional descriptive study. All patients presenting to the consultant's clinic 3 months after undergoing PCI will be interviewed. Compliance will be measured using the Morisky Medication Adherence Score (MMAS-4) that has been validated in coronary artery disease. Patients undergoing Coronary Artery Bypass Grafting (CABG) will be excluded.

Conclusion: We will aim to determine compliance to antiplatelet medication in the "real world" and its impact on patient outcomes. We will also aim to determine the factors leading to non-compliance to antiplatelet medication.

2.49

TAKOTSUBO CARDIOMYOPATHY WITH USE OF SALBUTAMOL NEBULIZATION AND AMINOPHYLLINE INFUSION IN PATIENT WITH ACUTE ASTHMA EXACERBATION

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Takotsubo cardiomyopathy or stress induced cardiomyopathy is characterized by transient left ventricular dysfunction, mimicking myocardial infarction in the absence of obstructive coronary artery disease or acute plaque rupture on coronary angiography. The exact mechanism of myocardial dysfunction in Takotsubo Cardiomyopathy is unknown however due to its association with physical and emotional stress it is postulated that it is caused by catecholamine induced micro-vascular spasm or due to direct catecholamine induced toxicity of myocardial cells. We present the case of a 51 year old lady who was known to have bronchial asthma and multiple myeloma, who presented with acute asthma exacerbation and was treated with beta-2 agonist nebulization and intravenous aminophylline. During her hospital stay she developed symptoms of worsening shortness of breath associated with jaw pain. An ECG was done that showed ST Segment elevation in the anterior precordial leads. The patient was electively intubated and shifted to the cardiac catheterization laboratory. Her cardiac catheterization revealed normal coronary arteries. A left ventriculogram (LV gram) was done that revealed apical hypokinesia, and basal hyperkinesia with an ejection fraction of 30%. The patient was eventually extubated the next day and managed with angiotensin converting enzyme inhibitors (ACE-I). She was then discharged on medication. An echocardiogram

done later revealed normal left ventricular systolic function.

2.50

REFRACTORY EPILEPSY: WHAT LIES BENEATH?

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Background: This case represents an unusual presentation of a life-threatening condition, namely, ventricular arrhythmia.

Case Presentation: A 30-year-old woman presented to the emergency room (ER) with recurrent seizures. She had been diagnosed with epilepsy 2 years ago and prescribed valproate which she stopped. She now presented with repeated episodes of seizures for the past 5 days. Each episode was preceded by prodromal symptoms and would last 1–2 min. She was now experiencing episodes every 15–30 min. In ER a normal physical examination was documented. An MRI of the brain was planned to investigate for structural CNS pathology. In the MRI recovery room she had prodromal symptoms followed by up rolling of eyes with generalised body stiffness. Polymorphic ventricular tachycardia (PMVT) was noted on the cardiac monitor. The rhythm terminated spontaneously within 2 min. She was given lidocaine and shifted to the coronary care unit. An ECG revealed some non-specific ST-T changes and normal QT interval. Echocardiogram revealed severe left ventricular systolic dysfunction. A normal coronary angiogram was also documented. A cardiac MRI was performed, which revealed severe left ventricular systolic dysfunction and mid-myocardial enhancement suggestive of non-ischaemic aetiology of the cardiomyopathy. Brain MRI, was found to be normal.

A retrospective history revealed that the patient had experienced an eventful pregnancy 6 years previously with disproportionate dyspnoea on exertion and pedal swelling. Long-standing untreated cardiomyopathy can manifest with malignant ventricular arrhythmias. The patient was discharged on heart failure medications, single antiepileptic, amiodarone and an implantable cardioverter defibrillator (ICD).

Conclusion: An estimated 20% of epilepsy cases are misdiagnosed and the commonest underlying diagnosis is cardiogenic syncope. For all clinical diagnoses, for example, epilepsy, thorough history-taking and physical examination are warranted.

Keywords: Arrhythmia, Epilepsy

2.52

PREDICTORS OF IN-HOSPITAL MORALITY AMONG STEMI PATIENTS UNDERGOING PRIMARY PCI AT THE AGA KHAN UNIVERSITY HOSPITAL, KARACHI

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Background: ST Elevation Myocardial infarction (STEMI) is an acute cardiac event which requires immediate revascularization through percutaneous intervention. In Pakistan, limited information is available on post-treatment outcomes in these patients. The aim of this study was to identify predictors of mortality among patients undergoing primary angioplasty (PCI) at the Aga Khan University Hospital, Karachi.

Methods: An analytical study based on retrospective review of hospital records was conducted at the section of Cardiology, AKUH. Information was retrieved for all STEMI patients presenting through ER undergoing Primary angioplasty at the Aga Khan University Hospital between 2010 and 2014. Patients'

demographic profile, co-morbid conditions & risk factors, time to presentation, and in-hospital outcomes were recorded. Multivariable logistic regression analysis was used to identify predictors of mortality at hospital discharge.

Results: A total 1089 records were reviewed, of which 603 were included as STEMI. Mean age of patients was 58.1 + 11.4 years; and predominantly comprised males (78.6%). 54% of patients presented with multi-vessel disease. Total ischemia time in our population was higher than previous estimates (median: 320 mins, IQR: 207-662.5 min). 58 (9.7%) in-hospital deaths were observed. Multivariable analysis identified four risk factors which include age (OR: 1.04, 1.01-1.07), female gender (OR: 1.93, 0.95-3.92), Kilip HF>2 (OR: 27.9, 9.66-48.8) and elevated troponin I at baseline (OR: 1.36, 1.10-1.68).

Conclusion: Our study identified four key risk factors associated with mortality in patients undergoing primary angioplasty. Ischemia time was found to be unrelated to mortality in our setting. Further studies evaluating the influence of these risk factors on long term cardiovascular outcomes in our population are encouraged.

Keywords: STEMI, Primary PCI, total ischemia time, In-hospital mortality.

2.53 FREQUENCY OF CONTRAST INDUCED NEPHROPATHY IN PATIENTS UNDERGOING PRIMARY PERCUTANEOUS CORONARY INTERVENTION AT TERTIARY CARE CENTER

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Objective: To determine the frequency of Contrast induced nephropathy in patients undergoing Primary percutaneous coronary intervention (PCI) in a tertiary care hospital.

Background: Contrast medium-induced nephropathy is a recognized complication in coronary diagnostic and interventional procedures and is associated with prolonged

hospitalization, adverse clinical outcomes and significantly higher in-hospital mortality. Patients with acute myocardial infarction treated with primary angioplasty are at higher risk of contrast medium-induced nephropathy than those undergoing elective interventions. In patients with acute myocardial infarction, several conditions may contribute to the development of renal dysfunction. By knowing the risk of CIN related to PCI would be greatest help in reducing the complications related to it in future.

Methods: The study design is cross-sectional. It will be done under the section of Cardiology, at Aga Khan University hospital Karachi after getting approval from ethical committee. The study will be completed six months after acceptance of synopsis. It will be done by non-probability consecutive sampling. All Patients with age b/w 18 to 75 years, of both genders admitted in the cardiology department, undergoing primary PCI will be included. However, Patients with chronic kidney disease. (Cr.>1.6), coronary anatomy not suitable for PCI and requiring emergency bypass grafting will be excluded.

Results: (currently under study)

Conclusion: The study aims therefore to determine frequency of contrast induced nephropathy in patients undergoing primary coronary intervention in an attempt to reduce the renal complications and perhaps, prolonged hospitalization.

Keywords: Contrast induced nephropathy, Primary percutaneous Coronary intervention

2.55 PROFILE OF STEMI PATIENTS UNDERGOING PRIMARY PCI AT THE AGA KHAN UNIVERSITY HOSPITAL, KARACHI

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Background: ST Elevation Myocardial infarction (STEMI) is one of the most common acute cardiac manifestations, which usually requires immediate revascularization through primary percutaneous coronary intervention (PCI). In Pakistan, limited information is available on patients presenting with STEMI, their risk profile and treatment outcomes following PCI.

Methods: This study is a retrospective review of hospital records conducted at the section of Cardiology, AKUH. Patient information was retrieved from hospital records for all STEMI patients presenting through ER who underwent Primary PCI at the Aga Khan University Hospital between 2010 and 2014. Information was collected on preformed questionnaires which included information on patients' demographic profile, co-morbid conditions & risk factors, time to presentation, and in-hospital outcomes.

Results: A total of 1089 records were reviewed, of which 603 were included as STEMI. Mean age of patients was 58.1 + 11.4, which included a majority (78.6%) of males. 54% of patients presented with multi-vessel disease. Average ischemia time was 320 minutes (IQR: 207-662.5 min), while door to balloon time was 115 minutes (IQR: 85-155 min). Common risk factors included hypertension (48.0%), diabetes (37.0), smoking (22.2%), and dyslipidemia (15.9%). Average length of hospital stay was 3 days (IQR: 2-4 days). At discharge, 90.3% of patients were alive whereas 9.7% in-hospital mortality was observed.

Conclusion: Our study highlights some common risk factors among patients presenting with STEMI. Ischemia time, door to balloon time and mortality were higher in our population compared to previous studies. Further studies are

encouraged to evaluate association of risk factors with cardiovascular outcomes in this population.

Keywords: Primary percutaneous coronary intervention, ACS, STEMI, profile.

2.56 MYOCARDITIS MIMICKING ACUTE CORONARY SYNDROME – THE ROLE OF CARDIAC MAGNETIC RESONANCE IMAGING IN THE DIAGNOSIS

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Myocarditis is an inflammatory disease of myocardium with a wide range of clinical presentation. Myocarditis may mimic acute coronary syndrome (ACS) and conventional tests lack enough specificity for adequate differential diagnosis. All the 3 cases reported here had myocarditis mimicking ACS with elevated troponin levels but normal coronary arteries on either invasive or CT angiography. Diagnosis is usually challenging in patients with ACS like presentation but normal coronary arteries. Cardiac magnetic resonance (CMR) has emerged as a leading imaging modality in the diagnosis of myocarditis, due to its ability to detect myocardial edema and necrosis noninvasively. CMR was used for confirming the diagnosis of myocarditis in all three patients presented here.

Keywords: Myocarditis, Troponin levels, Cardiac magnetic resonance imaging (CMR)

Clinical Trials

3.1 MOLECULAR PREVALENCE OF PLASMID MEDIATED QUINOLONE RESISTANCE GENE IN CLINICAL ISOLATE OF EXTENDED-SPECTRUM B- LACTAMASE(ESBL) PRODUCING GRAM NEGATIVE ENTEROBACTERIACEAE BACTERIA

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Objective: Quinolone resistance is usually caused by various chromosomal mutations, but has been more recently associated with plasmids which carry the qnr determinant.

Aim: The Prevalence of quinolone resistance gene in ESBL producing gram negative Enterobacteriaceae in Holy Family Hospital Rawalpindi. Analysis of Qnr-A Qnr-B and Qnr-S gene association with ESBL producing gram negative bacteria

Material and Methods: A total of 60 non-duplicate fluoroquinolone-resistant Enterobacteriaceae clinical isolates, comprising 24 Escherichia coli, 25 Klebsiella species and 11 Enterobacter spp were collected between July 2011 and October 2011 from hospitalized patients in Holy Family Hospital Rawalpindi. The presence of the qnr gene was screened by PCR using specific primers for qnrA, qnrB and qnrS in extracted plasmid DNA.

Results: A total 60 of these isolates, of which 18 % housed the qnrA gene only, 50 % qnrB and 32 % qnrS only. Approximately 44.78% of the

quinolone-resistant E.coli isolates harboured the qnr gene while 38.81% Klebsiella spp and 16.42% Enterobacter spp were positive.

Conclusion: The emergence of qnr-mediated quinolone resistance among clinical Enterobacteriaceae isolates is described in Holy Family Hospital Rawalpindi. Plasmid mediated Quinolone resistance is often associated with ESBL producing gram negative Enterobacteriaceae. Plasmid mediated Quinolone resistance is common, especially among hospitalized patient with E.coli spp and Klebsiella spp.

Keywords: QNR, ESBL, plasmid

3.2 TO OBSERVE THE INCIDENCE AND PATTERN OF THROMBOCYTOPENIA IN CARDIAC SURGERY PATIENTS

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Objective: To observe the incidence and pattern of thrombocytopenia in cardiac surgery patients.

Methods: All cardiac surgery patients were included in this prospective observational study from November 2014 to April 2015. A Performa was used to document demographics, platelet count (PC) at different intervals (preoperative and postoperative days 0 – 9), heparin doses, total cardiopulmonary bypass (CPB) time, cross clamp time and blood products transfused. Any thromboembolic complication and presence of infection were also recorded during their CICU stay. Frequency and percentage were computed for categorical observation while mean and

standard deviation were estimated for numeric variables.

Results: Total 177 participants were eligible for the study which included 130 (73.4%) males and 47 (26.6%) females. Average age of the patients was 59.21 ± 10.99 while weight was 74.53 ± 12.83 . Average preoperative platelet count of all the patients was 261.96 ± 70.15 . Total 167 (94.4%) patients developed postoperative drop in platelet count below 150,000 while 42.5% patients drop their PC to $>50\%$ of the baseline during the course of CICU. Maximum drop in PC was noticed on 2nd and 3rd day of surgery. Total nine patients (5.3%) developed severe thrombocytopenia ($<50,000$). Incidence of thrombocytopenia was high in patients who require longer cross clamp time and pump time.

Conclusion: The incidence of thrombocytopenia and its severity after cardiac surgery is very high in our study population. We were unable to find usual HIT pattern in which may signify that the incidence of HIT is very low in our population.

Keywords: platelet count, cardiopulmonary bypass, cross clamp time

Dental/Orthodontics

4.1

AGE ESTIMATION OF A SAMPLE OF PAKISTANI POPULATION USING CORONAL PULP CAVITY INDEX IN MOLARS & PREMOLARS ON ORTHOPANTOMOGRAM

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Objective: The objective of the present study is to assess the validity of coronal pulp cavity index (TCI) in the age estimation of a sample of Pakistani population.

Material & Method: A cross-sectional study was conducted at Aga Khan University Hospital dental clinics in which a total of 315 teeth of 80 Pakistani individuals were selected using convenience sampling technique and analyzed on Orthopantomogram. Coronal pulp chamber height and crown height of the unrestored mandibular premolars and molars were measured and coronal pulp cavity index (TCI) was calculated. Data were analyzed by using SPSS version 20. Paired sample t-test was used to assess bilateral symmetry of TCI. Pearson correlation test was applied to assess correlation between chronological age and TCI.

Results: The mean correlation coefficient between chronological age and TCI was found to be -0.27. The correlation in males ranged from -0.04 (for tooth # 36) to -0.72 (for tooth # 47) whereas in females, it ranged from -0.02 (for tooth # 44) to 0.41 (for tooth # 46). The highest negative correlation was observed for tooth # 47 in males ($r=-0.72$) whereas among females, the highest negative correlation was noted for tooth # 36 ($r=-0.61$).

Conclusion: This study shows that there is very weak correlation between age and TCI of any tooth in Pakistani population so it cannot be

accurately used for age estimation in the studied population.

Keywords: Forensic anthropology population data, tooth coronal pulp cavity index, chronological age

4.2

ASSESSMENT OF DIAGNOSTIC QUALITY OF OPG X-RAY AND FACTORS AFFECTING IT

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Background: Quality control and quality assurance systems together constitute the key quality system. It is mandatory for sponsors of clinical trials and contract research organizations alike to establish, manage and monitor their quality control and quality assurance systems and their integral standard operating procedures and other quality documents to provide high-quality products and services to fully satisfy customer needs and expectations. Our objective is to assure the quality of digital OPG done at our department.

Objective: The purpose of this study was to investigate the level of clinical image quality of OPG image and to analyze the parameters that influence the overall image quality.

Method: Random OPG images were taken from PACS which were performed between April to May 2016. The quality control assessment tools were defined as exposure, angulation, contrast density, labeling, focus, correct marker placement and artifact on the OPG radiograph.

Result: In all images the error rate of exposure is (0%), marking (6%), focus (area of interest 30%), angulation (10%), contrast density (25%)

and artifact is 17%. Out of 100 OPG's only 11% has errors which are clinically unacceptable. The most common error was unfocused radio graph, positioning error and correct marker placement whereas the least common error recorded was patient movement during exposure and correct labeling by the radiographer. **CONCLUSION:** The OPG images taken at radiology of AKUH generally have a normal to higher-level image quality. Principal factors affecting image quality were positioning of the patient and image density, labeling, and contrast. Steps are needed to be taken which would reinforce radiographers and ensure that proper position for the exam is maintained while pantomogram machine revolves around the patient. Also, standardizing objective criteria of image density, labeling, and contrast is required to evaluate image quality effectively.

Keywords: OPG, quality, rotation

Endocrinology/Diabetes

5.2 TYPICAL GRAVE'S OPHTHALMOPATHY IN PRIMARY HYPOTHYROIDISM

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Objective: Graves ophthalmopathy (GO) usually occurs in a close temporal relationship with hyperthyroidism. It is rare in patients with normal thyroid function (euthyroid GO) and in patients with hypothyroid forms of thyroid autoimmune diseases (hypothyroid GO).

Methods: A 52 years old man presented in our endocrine clinic with diagnosed primary hypothyroidism 3 months back during evaluation for glaucoma. He was taking levothyroxine 100 microgram daily. On examination, he was vitally stable; there was no goiter, and insignificant findings on general physical and systemic examination. Initial thyroid stimulating hormone level (TSH) was 7.5 uIU/ml (NR: 0.4-4) and free T₄ (FT₄) level was 1.24 ng/dl (NR: 0.89-1.76) with follow up thyroid functions returning to normal level, anti-thyroid peroxidase was 958 IU/ml (NR: <35) and anti-thyroglobulin was 60.3 IU/ml (NR: <40). He was later referred by an ophthalmologist to exclude Grave's eye disease, where he had presented with chief complaints of bilateral prominent eyes. On examination there was only bilateral exophthalmos with marked chemosis. Magnetic resonance imaging (MRI) of the orbits showed typical findings of GO.

Results: We present a middle aged man recently diagnosed primary hypothyroidism presenting again with eye symptoms typical of GO. After performing the MRI of the orbits he was started on steroids and asked to follow up.

Conclusions: Graves' ophthalmopathy is a rare condition to come across in patients with primary hypothyroidism. Patients with

hypothyroidism and Graves ophthalmopathy can be successfully treated with steroids in a similar manner as in patients with GO associated with hyperthyroidism

Keywords: thyroid associated orbitopathy, Graves ophthalmopathy, hypothyroidism

5.3 SPECTRUM OF WATER AND ELECTROLYTE IMBALANCE AFTER SELLAR, SUPRASELLAR AND PARASELLAR SURGERY

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Objectives: To determine and report the frequency of various water and electrolyte disturbances (WED) in patients after sellar, suprasellar and parasellar surgery (SSPS).

Methods: We conducted a cross-sectional retrospective study on 115 patients in the Aga Khan University Hospital after ethical approval. Patients 16 years of age or older undergoing pituitary or sellar surgeries were included. Data was collected on basic sociodemographic characteristics and clinical indication for surgery. Laboratory values were noted for serum electrolytes, plasma and urine osmolality, urine sodium and 24 hour fluid intake and output from immediate postoperative day till discharge and follow up. Medical management plan was also recorded. Diabetes insipidus (DI), syndrome of inappropriate antidiuretic hormone (SIADH), cerebral salt wasting (CSW), triphasic response and hyponatremia was recorded as per the diagnostic criteria. Data analysis was performed on Statistical Package for the Social Sciences version 19.0.

Results: Out of 115 patients there were 61.7% males, mean age 42.3 ± 13.86 years, 91.3% had pituitary adenoma (73.0% non-functioning) and 86.1% underwent transsphenoidal surgical approach. Transient DI occurred from Day 1 to 6, peaking with 57.4% on Day 2. Permanent DI and SIADH were very rare. The typical triphasic response and CSW was not observed in any of the patients. However, isolated hyponatremia occurred in 11% hyponatremia & 20.9% had DI with hyponatremia.

Conclusion: Transient DI is the most common postoperative WED after SSPS. Hyponatremia occurred in isolation and following DI. This is the first study describing postoperative WED spectrum after different sellar surgeries in Pakistan

Keywords: pituitary lesions, diabetes insipidus, hyponatremia.

5.4

UNUSUAL ASSOCIATION OF PARATHYROID ADENOMA AND METASTATIC MEDIASTINAL ATYPICAL CARCINOID

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Objective: Parathyroid adenoma, a common cause of hyperparathyroidism, is also a commonest manifestation of multiple endocrine neoplasia type 1 (MEN1). However, among many of its other associated tumors, atypical carcinoid tumors arising from the foregut tissues are very rare.

Methods: 51 year old male was seen after right parathyroidectomy and mediastinal mass resection for the management of postoperative hypocalcaemia. He had a background history of breathlessness for around 2 months. Examination was unremarkable. Pre-operative laboratory evaluation revealed a calcium (Ca) level of 12.7mg/dl, phosphate (PO₄) of 1.9 mg/dl, serum albumin of 4.8g/dl, alkaline phosphate of 94 U/L, and serum intact parathyroid hormone level (PTH) 413.8 pg/ml. Technetium (99mTc) sestamibi parathyroid scan showed right parathyroid increased tracer uptake. Further workup revealed large mediastinal mass which was diagnosed as atypical carcinoid after tru-cut biopsy. Serum prolactin level was 5.90 U/L. He underwent right sided parathyroidectomy and resection of the mediastinal mass and the histopathology confirmed it to be a parathyroid adenoma and atypical carcinoid tumor of the mediastinum with metastasis in the lymph node and parathyroid gland. His urinary 5-hydroxyindoleacetic acid (5-HIAA) was only mildly raised [7.9 mg/24 hrs. (2-7)]. Somatostatin Receptor Scintigraphy (SRS) revealed a well-defined focus in left hypochondriac region between inner border of spleen and left upper renal pole, consistent with SRS avid tumor. Currently, he is on everolimus therapy. **Results:** We describe an unusual case of parathyroid adenoma with atypical carcinoid of mediastinum with metastasis, which has never been found to be reported in the literature. **Conclusion:** Clinical manifestations of MEN syndromes are challenging. Some tumors cluster in a non-classic description. Although our patient is not diagnosed with MEN 1, its associated neuroendocrine tumors described in the literature rarely presents in isolation, remain clinically silent and therefore need aggressive workup with the aid of imaging and histopathology.

Keywords: parathyroid neoplasms, atypical carcinoid, multiple endocrine neoplasia

5.5

MICROCEPHALIC (MAJEWSKI) OSTEODYSPLASTIC PRIMORDIAL DWARFISM TYPE II WITH HYPERANDROGENISM

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Objective: Microcephalic osteodysplastic primordial dwarfism type II (MOPDII) is an extremely rare disorder which is often misdiagnosed. Hirsutism and amenorrhea is mostly associated with Polycystic Ovary Syndrome (PCOS), which may occur due to severe insulin resistance found as a feature of MOPDII. We discuss the possible link of MOPDII with hyperandrogenism and the pathophysiology behind it.

Methods: We present the history, physical exam findings and laboratory results of an 18 year old girl, known case of MOPD II, with complaints of increased body hair and amenorrhea.

Results: An 18 year old girl, known case of MOPDII, presented to us with complaints of increased body hair and amenorrhea for 5 years. Physical examination showed short stature, scoliosis and bowing of legs. Hirsutism was present in male pattern of distribution. CT scan and ultrasound of abdomen was done which failed to show any abnormality in the ovaries. Her lab investigations showed an extremely high testosterone level of 217ng/dl and a free androgen index of 49%.17-Hydroxyprogesterone (17-OHP) was 1.48ng/ml, dehydroepiandrosterone (DHEA) was

85.50mcg/dl, serum insulin was 89.75 uIU/mL and HbA1C was 8.3%.

Conclusion: Insulin resistance and consequent hyperinsulinism associated with MOPDII may leads to PCOS thus causing increased androgen production which may manifest as hirsutism and amenorrhea. However, such high levels of androgens in PCOS are highly unusual and merit a workup for a potential tumor.

Keywords: MOPDII, hyperandrogenism, PCOS

5.6

MIND THE GAP: EUGLYCEMIC DIABETIC KETOACIDOSIS DUE TO SGLT-2 INHIBITOR USE

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Around 1% of diabetic ketoacidosis (DKA) cases present with a normal blood sugar. Euglycemic DKA is seen with starvation, pregnancy, or alcohol ingestion. Sodium glucose co-transporter 2 (SGLT-2) inhibitors are agents for the management of diabetes and have been associated with euglycemic DKA from induced glycosuria. We report a case of euglycemic DKA related to SGLT-2 inhibitor use. Case A 63 year old type 2 diabetic presents with left leg ulcer for 3 weeks, fever for 3 days and copious vomiting that morning. Details of his home medications are not available. He denies alcohol ingestion. He is febrile and tachycardic and has a purulent wound on his left foot. He is diagnosed with probable osteomyelitis. Empiric antibiotics are started. Laboratory data shows a metabolic acidosis with blood pH of 7.1, bicarbonate level of 7 mmol/L and an anion gap of 31. His blood sugar is 250 mg/dL. Serum lactate is normal. There is no osmolar gap. Urine and serum ketones are present. Initial diagnosis is

starvation ketoacidosis from vomiting and 2 litres crystalloids are given but the anion gap metabolic acidosis persists. Repeat blood sugar is 222 mg/dL. The diagnosis is revised to euglycemic DKA. Insulin and dextrose infusions are started. The acidosis resolves and the anion gap closes within a few hours. Medication reconciliation reveals the patient is on canagliflozin for 2 months. Canagliflozin is stopped and basal long acting insulin is started. A bone scan confirms osteomyelitis of his foot and he is discharged on IV antibiotics.

Conclusion: Infection is a common trigger for DKA. Euglycemic DKA is rare and diagnosis requires a high index of suspicion. Induced glycosuria from SGLT-2 inhibitors may lead to euglycemic DKA

Keywords: SGLT-2 inhibitor, diabetes, anion gap metabolic acidosis

5.7 BURDEN OF ENDOCRINE DISEASES IN CHILDREN AT EMERGENCY AKUH

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Introduction: Endocrine diseases are not very common in children. The common endocrine emergencies in children are diabetic ketoacidosis, congenital adrenal hyperplasia, adrenal insufficiency, hypercalcemia, hypocalcemia, diabetes insipidus, syndrome of inappropriate antidiuretic hormone secretion, hypothyroidism and hypopituitarism.

Objectives: Our specific aim is to determine the frequency, clinical presentation and laboratory investigation of endocrine disease in children presenting in emergency department, AKUH.
Methods: This study is based on retrospective

chart review process from January 2009 to December 2014. The entire patient from 1 month to 16 years of age presenting first time in emergency room with suspected endocrine disorder. This includes age, presenting symptom, lab investigation and diagnosis of patient confirmed in ward.

Results: Total 149 patients were assessed through patient record. Of those 53.7% were female and the mean age of the children was 77 months. Urine for ketones (67.4%), Acidosis (66.4%), vomiting (55.7%), respiratory distress (43%) and fever (29.5%) were the five most common presenting complaints found in children during ED visit. Diabetic Ketoacidosis was identified as a final diagnosis in children i.e. 76.5% whereas Congenital Adrenal Hyperplasia was diagnosed in 16.8% children. There was a significant association had been observed in different presenting complaints and age category, like Ambiguous Genitalia, Acidosis, Urine for ketones, and Abdominal Pain has statistically significant presence with respect to age category.

Conclusion: Endocrine emergencies are rarely seen in children. But they are very important conditions as the signs and symptoms are very nonspecific and overlap with other non-endocrine conditions. So they are normally missed by emergency physician leading to high mortality and morbidity. To achieve a favourable outcome they must be included in the differential diagnosis of other disease.

Keywords: Endocrine, Disease, Children, Emergency room

Keywords: Endocrine, Disease, Children

5.8

DIABETIC KETOACIDOSIS IN TYPE 2 DIABETIC PATIENTS, A HOSPITAL BASED STUDY

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Background: Diabetic ketoacidosis (DKA) is a major complication of diabetes and occurs in both type 1 and type 2 diabetes. Comparison of different clinical and biochemical characteristics of DKA in type 1 and type 2 have been made worldwide but local data is lacking. An analysis and overview of the different clinical and biochemical characteristics of DKA that might be predicted between patients with type 1 and type 2 diabetes is needed.

Methods: We reviewed medical records of 296 admissions with DKA from January 2010 to February 2016. 234 admissions were analysed. Patients were classified as having type 1 or type 2 diabetes based on treatment history and were further classified into subgroups based on treatment at discharge and follow up. Comparison was made for clinical, biochemical characteristics at presentation, differences of symptoms, precipitating factors and response to therapy.

Results: Of 234 patients admitted with DKA, 128 had type 2 diabetes and 106 had type 1 diabetes. 57 admissions were for newly diagnosed diabetes. Patients with type I diabetes were significantly younger 31.6 years than type II patients 57 years with no significant difference in terms of gender. Type II patients were found to have significantly higher BMI than type I patients. Significantly higher rate of previous history of diabetic ketoacidosis

observed in type 1 (24%) as compared to type 2 diabetics (3%). Episodes of DKA tend to be more severe among type I patients than in type II patients. No significant differences in mortality, length of stay in hospital, admission in ICU and requirement of ventilator were observed between two groups of patients. 10 patients with newly diagnosed type 2 diabetes had DKA as their first manifestation of disease as compared to 47 patients with newly diagnosed type 1 diabetes. 181.2% (169) presented with altered mental status. Nausea was the second most common presenting symptom 45.7% (107). Patients with type 1 were younger with less comorbidities. Patients with type 1 were more acidotic. Mortality was observed in 6 patients in type 1 diabetes and 16 patients in type 2 diabetes. **Conclusion:** Substantially higher proportion of DKA occurs in type 2 diabetes as compared to type 1. DKA in type 2 diabetics can have worst outcome. Few patients with type 2 Diabetes can have DKA as first manifestation of diabetes with some patients requiring no treatment at follow ups.

Keywords: diabetes ketoacidosis (DKA), type 2 diabetes mellitus, type 1 diabetes mellitus.

5.9

CHANGING TRENDS IN MORTALITY AND PRECIPITATING FACTORS OF DKA IN TYPE 2 DIABETICS PRESENTING TO A TERTIARY CARE HOSPITAL, PAKISTAN

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Objective: The aim of our study was to explore the precipitating factors leading to DKA in adult

population affected by type 2 diabetes in Pakistan and to establish a correlation between these factors with hospital stay and mortality. We also explore the causes related to decreased mortality observed in our study as compared to a previous study done at the same institute.

Methods: We reviewed medical records of patients with type II diabetes admitted to our hospital during period of January 2010 to February 2016 with diabetic ketoacidosis. We looked at the precipitating cause and clinical outcomes in these patients.

Results: The results of our study are based on a sample size of 128 type 2 diabetic patients who presented with DKA. The mean age of our sample was 56.91 years with a standard deviation of 12.37 years. The gender ratio was roughly one to one with 68 male and 60 female patients. Infection was the most common precipitating factor leading to DKA in 53 patients (41.4 %) while myocardial infarctions, cardiogenic shock and noncompliance with diabetic medications also contributed significantly to DKA in our population (Table 1). Upon comparing mortality with precipitating factors, infection also came out to be the leading cause of death in our study population with 12 out of 16 deaths occurring in patients with infection as the precipitating factor for DKA (Table 2). All 16 deaths occurred in patients with moderate to severely impaired mental status. When predictors of mortality were compared, it was seen that hypertension, creatinine levels and lower levels of serum bicarbonate were very consistent in predicting mortality in addition to altered mental status, with the most number of deaths occurring in patients in whom the aforementioned factors were deranged. The mean hospital stay was 5.9 days with a standard deviation of 5.3 days. When we compared mortality and hospital stay, the results surprisingly showed a decrease in number of deaths with an increase in number of

days the patient stayed in the hospital (Table 3). Marked reduction in mortality (12.5%) was observed during this period in patients with type 2 diabetes admitted with DKA as compared to mortality observed in a study (21%) from same institute during period of 1991-1996.

Conclusion: Infections appear to be the most significant contributing factor in causing DKA and death. However, over the years mortality of type 2 diabetes patients with DKA has reduced at our institute however overall mortality still remains higher than that reported in other studies.

Keywords: Diabetic ketoacidosis, Type 2 Diabetes, type 2 DKA precipitating factors.

5.10 INVESTIGATING MOLECULAR INTERACTIONS BETWEEN ANTI- MULLERIAN HORMONE AND ITS TYPE RECEPTOR II

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Introduction: Anti-Mullerian Hormone is a member of TGF β superfamily that activates ser/thr kinase receptor for undertaking its biological role. Here we discuss its structural and interactive dynamics with its receptor that plays critical role in female reproductive pathophysiology.

Methods: Full length models of AMH and AMHR-II were constructed using iterative threading. The models were refined for structural parameters such as Ramachandran

Plot and steric clashes. Superimposition based on C α back bone was undertaken and RMSD deviations were measured in Å. Molecular docking simulations were conducted on basis of surface, geometry and charged complementarity. The best simulation had least free energy and minimal intermolecular clashes.

Results: The finally selected molecular models are structurally plausible as more than 85% of the residues are within acceptable limits of phi and psi angle ratio with negative free energy. Structurally, AMH is predominantly composed of β sheets, conversely, AMHR-II contain many trans membrane α -helices. In all molecular docking simulations, N terminal extracellular domain of AMHR-II was found interacting with the C terminal region of AMH. A minor deviation of less than 1 Å was observed amongst docking simulations, pointing to the plausibility of predicted conformation of intermolecular complex. Residues present in N-terminal antiparallel β sheet of AMHR (Asn66, Thr68, Gln69 and Asp70) established hydrogen bond with Trp494 and Gln496 of AMH, residing at C-terminus antiparallel β sheets. Additional, polar and non-polar interactions were also noticed in these regions.

Conclusion: Structural conformation of intermolecular complex presents segregated region that may be exploited for designing small molecules of therapeutic importance.

Keywords: AMH, AMHR-II, TGF β , Protein Modelling, Molecular Docking

5.11 CLINICAL EFFICIENCY AND COST EFFECTIVENESS OF MACROPROLACTIN SCREENING IN HYPERPROLACTINEMIC PATIENTS

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Background: Macroprolactin (MaPRL) is a biologically inactive compound which leads to falsely elevated prolactin levels. It is recommended that all sera with increased total prolactin concentrations be sub fractionated by PEG precipitation to measure the bioactive monomeric prolactin concentration to prevent misdiagnosis and unnecessary investigations. *Objective:* To determine clinical efficiency and cost effectiveness of PEG screening of hyperprolactinemic sera.

Methods: In this Retrospective cross sectional study patients with high total prolactin levels were screened by PEG precipitation. Relevant diagnosis of Macroprolactinemia and True Hyperprolactinemia was made based on their absolute PEG treated monomeric prolactin level. They were then contacted on phone and a detailed history of their clinical symptoms along with their radiological workups was inquired.

Results: Frequency of macroprolactin was 60.7% seen in 145 patients and true hyperprolactinemia was observed in 94 (39.3%) patients. More asymptomatic patients were reported in the macroprolactin as compared to true hyperprolactinemic group ($p < 0.05$).

Conclusion: Prevalence of Macroprolactinemia is significantly higher in our population as compared to previous studies. PEG tested hyperprolactinemic sera appears to reduce the need for radiological investigations in patients

whose hyperprolactinemic state is attributed to MacroProlactin. It also significantly reduces the cost burden on patients.

Keywords: Macroprolactin, Polyethylene glycol, Hyperprolactinemia

5.12

UTILITY OF BONE HEALTH SCREENING PANEL FOR DETERMINING DISORDERS OF PARATHYROID HORMONE GLAND: AN EXPERIENCE FROM PAKISTAN

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Aim: Parathyroid hormone (PTH) disorders are not uncommon and patients may be asymptomatic in early stages. Aim of this study was to assess PTH disorders using bone health screening panel.

Methods: We reviewed laboratory results of 534 subjects and medical records of 111 subjects tested with bone health screening panel (comprising of serum 25OHD, calcium, phosphorus, magnesium, alkaline phosphatase, creatinine, albumin and plasma PTH) from Jan 2011-Dec 2013 in identifying disorders of parathyroid gland secretion.

Subjects were classified into following clinical groups, primary hyperparathyroid (PHP), Hypercalcemia with inappropriately normal PTH (HIN-PTH) ($\text{Ca} > 10.2 \text{mg/dl}$, $\text{PTH} > 25 \text{pg/ml}$, $25\text{OHD} > 20 \text{ng/ml}$), Normocalcemic hyperparathyroidism (NCHP) ($\text{Ca} > 10.2$, $\text{PTH} > 87 \text{pg/ml}$, $25\text{OHD} > 20 \text{ng/ml}$), Secondary hyperparathyroid (sHPTH), functional hypoparathyroidism (FHP) ($25\text{OHD} < 20 \text{ng/ml}$, $\text{Ca} < 10.2 \text{mg/dl}$, $\text{PTH} 16-87 \text{pg/ml}$), and primary hypoparathyroidism (HPP). PTH nomogram by Harvey et al was applied to calculate max PTH in subjects with atypical presentations (NCHP

and HIN-PTH) to determine primary high PTH secretion (1).

Results: Majority of study subjects were females (65%) with mean age 44.5 ± 17 years. Means of iPTH of 534 subjects was high, vitamin D was insufficient, and other markers were in normal range. High creatinine was found in 7% subjects. PTH disorders were classified after excluding high creatinine ($n=497$). The compensatory response of parathyroid gland (sHPTH) to vitamin D deficient group was seen in 17.7% while 39%, 8%, 1% and 0.4% had FHP, NCHP, PHP and HPP respectively. Symptoms of generalized myalgia, bone and joint pains were predominant findings in 111 cases reviewed. Parathyroid adenoma, osteopenia/osteoporosis, fractures proximal myopathy and renal stones were seen with deranged parathyroid hormone levels.

All subjects with NCHP had higher PTH levels than calculated maxPTH. In subjects of HIN-PTH, 6 had low, 2 had equal and 2 had high measured PTH than calculated maxPTH.

Conclusion: A significant number of patients presents with biochemical variables that do not fit the classic description of primary and secondary disorders of PTH secretion and may present a diagnostic dilemma. In such cases PTH-nomogram can enhance diagnostic accuracy by distinguishing between normal and disease phenotypes.

Keywords: Parathyroid Hormone Gland, Pakistan, Hyperparathyroidism

5.14

REG IA GENE EXONIC POLYMORPHISMS OF TYPE II DIABETES IN THE PAKISTAN POPULATION

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Background: The expression of REG I gene has been reported in renewing islets by stimulating their growth and regeneration. We intended to study expression levels and genetic polymorphism in REG I α that may be linked to diabetes susceptibility.

Methods: Unrelated patients (n=36) of type II diabetes and non-diabetic controls (n=15) were recruited. Biochemical levels of FBG, HbA1c, TC, TG and Levels of REG I α were measured. Six exons with corresponding intronic regions of REG I α gene were amplified and sequenced to identify polymorphisms in all samples.

Results: Levels of REG I α protein were higher in type 2 diabetic patients at early stages compared to controls ($p < 001$). A positive correlation of REG I α levels with FBG ($r = 0.407$, $p = 0.001$) and HbA1c levels ($r = 0.444$, p was novel. SNP g.209T allele was found as risk allele for type II diabetes (males, $\beta = 0.258$, females, $\beta = 0.364$) after adjustment. SNP g.-243G increased the risk of type II diabetes in smokers (OR, 8.066 [2.346 to 27.733]). The SNPS g.-385C (OR: 0.114 [0.033 to 0.396] and g.2199A (OR: 0.219 [0.067 to 0.708]) decreased the risk of type II diabetes in smokers. No association of any SNP with BMI and remaining SNPS with diabetes was established.

Conclusion: REG I α may be used as a marker of type 2 diabetes in early stages of the disease. Allele g.209T with caution increased the risk of type II diabetes. The SNP g.-145G>A was novel and may be the representative of Pakistan population

Keywords: Diabetes, Association, Exone sequencing

5.16

FREQUENCY OF VITAMIN D TOXICITY AND OTHER NON-MALIGNANT CAUSES OF HYPERCALCEMIA: A RETROSPECTIVE STUDY AT A TERTIARY CARE HOSPITAL IN PAKISTAN

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Objective: To ascertain the frequency of causes of hypercalcemia in patients not known to have solid tumor malignancy and to determine the frequency of Vitamin D toxicity as a cause of hypercalcemia.

Introduction: Hypercalcemia is a common clinical problem; primary hyperparathyroidism and malignancy are considered as commonest causes of hypercalcemia. Frequency of hypercalcemia in different medical entities has been described but there is a general scarceness of literature in relative frequency of different etiologies when patient presented with mainly this condition.

As, vitamin D deficiency) has resurfaced as a significant public health problem in recent years, overzealous replacement of vitamin D has been observed. In Pakistan two depots intramuscular preparations are widely used one with 200,000 IU and other with 600,000 IU of vitamin D3. As there are no recommendations regarding dosing interval for these mega doses, the practice among physician vary widely with the conservative being 600,000 IU IM or oral every 3 months to very aggressive regimen of 600,000 IU IM weekly for up to 12 weeks. As a result it is not an uncommon occurrence to see patients with vitamin D toxicity

Methods: This study was a retrospective analysis. A list of patients, who were admitted at Aga Khan University Hospital (AKUH) with hypercalcemia from Jan 2008 to 31st December 2013, was generated by Health Information Management and Systems (HIMS) department. Any patients admitted under the care of Oncology physician were excluded from the search.

Results: Hyperparathyroidism was the most common cause of hypercalcemia comprising 41 (28.28 %) patients, followed by 25 (17.29%) patients with vitamin D (25-OHD) toxicity. In addition 11(7.59 %) patients were characterized as probable 25-OHD toxicity. Vitamin D toxicity and probable vitamin D toxicity together comprised 36 (24.83%) of the cases. One patient had both vitamin D toxicity and primary hyperparathyroidism. In 113 patients with solid tumor malignancy, 25-OHD levels were available in 35 patients and four of these were in toxic range. Other causes of hypercalcemia included multiple myeloma 18 (12.41%) patients, tuberculosis 6 (4.14%) patients, CKD 5 (3.45%) cases, sarcoidosis 4 (2.76%) and lymphoma 3 (2.07%) patients. In 29(20%) patients a cause of hypercalcemia could not be ascertained and were labeled as undiagnosed cases. PTH results were available in 17 such patients and in 15 of these the cause of hypercalcemia was PTH independent. However further workup was not available to reach to a definitive diagnosis. In one patient paraphenylenediamine poisoning was the cause of hypercalcemia.

Conclusion: Vitamin D toxicity once thought to be rare has emerged as second most common cause of hypercalcemia. Knowledge of the prevalent causes of hypercalcemia can result in prompt treatment and avoidance of unnecessary investigations.

5.17

PRIMARY ADRENAL NON HODGKINS LYMPHOMA: A RARE OCCURRENCE

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Background: Primary malignancy of adrenal gland is uncommon cause of adrenal incidentaloma. In patients with adrenal incidentaloma frequency of having primary adrenal carcinoma is ~2–5%, with another 0.7–2.5% having nonadrenal metastasis to the adrenal gland. Unilateral primary adrenal lymphoma is extremely uncommon and has been scarcely reported in literature.

Methods: We report the history, Exam findings and laboratory results of a 50 years male type 2 diabetic diagnosed with Primary adrenal lymphoma.

Case Presentation: 50 years Male known diabetic for 21 years, presented with progressively increasing pain in the Left upper quadrant of abdomen, decrease Appetite and Wt loss of 8 kilogram over 1 month. On examination he had Blood pressure 140/80 mmHg ,no postural drop, Pulsr rate 106 / min and he was afebrile. Past history was significant for Pulmonary Tuberculosis 2 yrs back for which he took antituberculous therapy. His lab work up showed sodium 135meq, potassium 4.5 meq; Lactate dehydrogenase 905 I.U/L ; Renin 364Uiu/ml; Aldosterone 5.79ng/dl ; Dehydroepiandrosterone sulfate 79.20ug/dl and Urinary Vinyl Mandelic acid 6.4mg/24hr; low dose Overnight Dexamethasone suppression test 3.20ug/dl; CT abdomen reported a heterogeneous enhancing soft tissue density mass in left adrenal measuring 7.1 x 5.6 cm and 9.5cm craniocaudally, with paraaortic lymphadenopathy. Patient underwent left adrenalectomy and histopathology showed diffuse large B-cell Lymphoma(DLBCL). Patient was referred to haematology for further management of lymphoma.

Conclusion: The most common histological type of adrenal non-hogkin lymphoma is diffuse large B-cell lymphoma, comprising 70% of

cases that usually present in advanced age, follows aggressive clinical course, is usually bilateral and has a poor outcome. Therapeutic modalities for adrenal lymphomas include combination chemotherapy and in some cases treatment with surgery and radiotherapy is necessary.

Keywords: primary adrenal lymphoma, Non hodgkin lymphoma, Adrenal mass

5.18 ANTITHYROID DRUG INDUCED AGRANULOCYTOSIS: A RARE BUT SERIOUS COMPLICATION CAN HAVE A VERY LATE PRESENTATION

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Introduction: Agranulocytosis is a rare but serious complication of thionamide therapy with a prevalence of 0.1 to 0.5 percent, and usually occurs within the first two to three months of treatment.

Case Report: In August 2009, a 20 years old lady was referred to the Endocrine Clinic for evaluation of her hyperthyroidism. She was 12 weeks pregnant, had thyrotoxic features, exophthalmos, grade 2 goiter with a bruit. Her TSH was 0.01 uIU/mL (0.4-4.2 uIU/mL) and FT4 was >6.0 ng/dl (0.93-1.7 ng/dl). With a diagnosis of Graves' disease she was started on Propylthiouracil. She had an uneventful pregnancy and delivery. Subsequently, she was switched over to Neomercazole which she could not tolerate and thus was kept on Propylthiouracil. She could not be weaned off her thionamide therapy. Radioactive Iodine treatment could not be opted since within last 6 years, she had three pregnancies and was either pregnant or breast feeding her young babies.

She had erratic follow-ups. On 2nd December 2015, she presented to the clinic with history of high grade fever with rigors and oral ulcers. Her Complete Blood Count (CBC) showed Agranulocytosis with White Blood Count (WBC) of $1.5 \times 10^9/L$ ($4.0-10.0 \times 10^9/L$) with Absolute Neutrophil Count (ANC) of $0.27 \times 10^9/L$. She was admitted, her Propylthiouracil was stopped, she was given Amoxicillin/Clavulanate intravenously, her blood and urine cultures, Malarial Parasite smear and Chest X-rays all was negative. She was given a stat dose of Granulocyte Colony Stimulating Factor (Filgrastim 300 mcg). Next day her WBC rose to $3.1 \times 10^9/L$ with ANC of $1.2 \times 10^9/L$ and her condition got better and within a week the WBC normalized to $5.1 \times 10^9/L$ with ANC of $2.9 \times 10^9/L$. She was given Radioactive Iodine Treatment and is currently Euthyroid after 3 months of Radioactive Iodine.

Conclusion: The counseling to get a CBC in the event of fever, sore throat or oral ulcers; should continue throughout the time period of antithyroid drug intake.

5.21 COEXISTENCE OF PAPILLARY AND FOLLICULAR CARCINOMA OF THYROID. RARE EXISTENCE OF THYROID COLLISION TUMOR

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Objective: The objective of this study was to report a finding of a collision tumor of papillary and follicular carcinoma of the thyroid. Thyroid collision tumors are rare occurring in less than 1% of all thyroid malignancies. Among collision tumors, coexistence of medullary and papillary thyroid carcinomas is the commonest. Our finding of concurrent papillary and follicular

carcinomas is reported to be even rarer in literature.

Methods: We report history, physical exam, radiological, histopathological and laboratory findings of a 57 year old male diagnosed with a co-existing papillary and follicular thyroid carcinoma.

Results: 57 years male presented with swelling in front of neck for 5 day. On examination he had left sided thyroid nodule about 6×4 cm with no cervical lymphadenopathy. His thyroid functions showed TSH of 1.58(0.4-4.2), T4 of 7.83(5.1-14.1), T3 of 1.99(1.3-3.1). Ultrasound thyroid showed multiple bilateral nodules with largest nodule measuring 1.1×0.8 cm in right lobe and 2.3×1.2 cm in left lobe. His ultrasound guided fine needle aspiration of left sided nodule showed follicular lesion. Patient was planned for left lobectomy but his perioperative frozen section examination left lobe showed follicular carcinoma so he underwent total thyroidectomy.

His histopathology of right lobe showed Papillary carcinoma with a size of 2×1.5×1cm. He received postoperative radioactive iodine¹³¹ therapy and was started on TSH suppression thyroid hormone replacement.

Conclusion: Collision tumors are rare involving 2 or more histologically distinct neoplastic morphologies. There is scarce data available in literature regarding this phenomenon. Reporting such a case holds immense importance for increasing awareness among physicians and surgeons about the presentation, diagnosis and management for such a thyroid neoplasm.

Keywords: Follicular, papillary, collision tumor

5.22 EUGLYCEMIC DIABETIC KETOACIDOSIS IN A TYPE II DIABETIC STARTED ON EMPAGLIFLOZIN

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Background/Objectives: SGLT2 inhibitors are a newer class of anti-diabetic drugs which work by decreasing the absorption of glucose in the kidney by inhibiting sodium dependent glucose uptake. This increases the loss of glucose in the urine. This is a case documenting one of the rarer side effects of treatment with SGLT2 inhibitors especially empagliflozin; DKA, which usually presents as a triad of hyperglycemia, increased anion-gap acidosis and ketosis. We discuss the link of SGLT2 inhibitors with DKA and the pathophysiology behind euglycemic DKA.

Methods: We report the history, exam findings and laboratory results of a 42 year old, type II diabetic diagnosed with euglycemic DKA secondary to empagliflozin usage.

Results: A 42 year old male, type 2 diabetic, presented to the emergency room with nausea, vomiting and abdominal pain. He had recently changed his diabetes medications and started an SGLT2 inhibitor (empagliflozin) along with metformin, pioglitazone, liraglutide and self-adjusted exogenous insulin. Diabetic ketoacidosis (DKA) was suspected in the wake of clinical examination and lab findings but glucose levels were below the cutoff for DKA; therefore, he was diagnosed with euglycemic DKA. He was successfully managed with IV hydration and insulin infusion.

Conclusion: With the widespread usage of SGLT2 inhibitors, the incidence of DKA is likely to increase and diagnosis may be missed in the presence of euglycemia. Therefore physicians need to be cautious about this side effect and the novel presentation of DKA in the setting of SGLT2 inhibitor usage. Patients should be counseled to immediately seek medical attention if they experience symptoms suggesting DKA e.g. nausea, vomiting, abdominal pain etc. DKA prone individuals

should not be prescribed SGLT2 inhibitors especially if the patient experiences repeated infections, dehydration, vomiting, diarrhea, trauma or is about to undergo a surgery.

Keywords: Euglycemic DKA, SGLT2 inhibitor, empagliflozin

5.23

THREE SIBLINGS WITH FAMILIAL NON-MEDULLARY CARCINOMA: A CASE SERIES

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Background/Objective: Although medullary carcinoma is traditionally associated with a genetic predisposition, increasing evidence is now accumulating about the heritability of non-medullary thyroid carcinoma as well. We present a diagnosis of familial, non-syndromic, non-medullary carcinoma of the thyroid gland in three brothers diagnosed over a span of six years. To our knowledge this is the first case series reported of familial non medullary carcinoma of the thyroid from Pakistan

Methods: We report the history, signs and symptoms, laboratory results, imaging and histopathology of the thyroid gland of three brothers with non-medullary thyroid carcinoma (NMTC)

Results: All three patients were in the age group of 52-58 years and were diagnosed with NMTC. Only patient 1 and 3 had active complaints of swelling and chronic urticarial respectively, whereas patient 2 was asymptomatic. Patient 2 and 3 had advanced disease at presentation with

lymph node metastasis. All patients underwent a total thyroidectomy with patients 2 and 3 requiring a neck dissection as well. No previous exposure to radiation was present in any of the patients. In addition, their mother had died from adrenal tumor, primary/secondary? and she also had a swelling in front of her neck which was never investigated. All three patients remained stable at follow-up.

Conclusion: NMTC is classically considered a sporadic condition. Our report emphasizes on a high index of suspicion, a detailed family history and screening of first degree relatives when evaluating patients with NMTC to rule out familial cases which might behave more aggressively. Patients diagnosed with Familial NMTC should be kept under close follow-up with regular evaluations to detect recurrences.

Keywords: familial, non-medullary carcinoma, thyroid

5.24

RECURRENT SUB ACUTE THYROIDITIS LACKING DIAGNOSTIC IMAGING FEATURES – ATYPICAL SCENARIO

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Background/Objective: A diagnosis of sub-acute thyroiditis is based on history and clinical features supported by laboratory investigations and imaging studies. However, presence of SAT with normal thyroid scintigraphy findings is exceedingly rare. We discuss the possible explanations for this anomaly and utility of imaging studies in such presentations.

Methods: We report the history, exam findings, laboratory results, and imaging studies of a 51

year old post-menopausal female with recurrent sub-acute thyroiditis.

Results: The patient had a history of recurrent SAT 10 years back and presented now with pain in her neck for one and half month, fever since three days, heat intolerance, sleep disturbances and restlessness. Physical examination revealed enlargement and marked tenderness over the thyroid. Thyroid profile showed TSH 0.023uIU/ml, FT4 2.31ng/dL, FT3 2.74 ng/dL. Tc-99m pertechnetate scintigraphy showed bilateral normal homogenous uptake in both lobes of thyroid. Patient was started on 1 tablet carbimazole 5 mg TID but she returned 2 weeks later with persistence of symptoms. Repeat labs showed TSH 0.008 uIU/ml, FT4 2.64ng/dL, and FT3 2.5ng/dL with ESR of 94 mm/hr. Carbimazole was stopped and prednisolone was started in tapering doses for 6 weeks. Improvement in symptoms with normalization of ESR to 08 mm/hour and FT4 to 1.04 ng/dl occurred after taking prednisolone for six weeks at follow up.

Conclusion: Our patient presented with typical clinical features of SAT and elevated ESR but lacked the characteristic imaging thus emphasizing upon diagnosis of SAT on the basis of history, physical examination and laboratory data even if thyroid scintigraphy findings are not in favor of disease.

Keywords: sub-acute thyroiditis, Tc-99m pertechnetate, normal thyroid scintigraphy

5.25

COMPARISON OF FREQUENCY OF INSULIN RESISTANCE IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE WITH NORMAL CONTROLS

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Background/Objective: To compare mean homeostatic model assessment of insulin resistance (HOMA-IR) in patients with and without chronic obstructive pulmonary disease (COPD).

Methods: A Case control analytic study was conducted in medical outpatient department of Medial Unit-II of Dow University of Health Sciences from April 2013 to September 2013. All patients with the diagnosis of COPD were included as cases. Controls were age match healthy individuals with minor illnesses. Age, weight, height and forced expiratory volume in one second to forced vital capacity (FEV1/FVC) ratio were documented. Fasting blood glucose and fasting insulin levels were done. Body mass index (BMI) and IR was calculated using the formulas. HOMA-IR was compared between cases and controls.

Results: Forty COPD patients were compared with thirty five age match controls. HOMA-IR was found to be higher in cases as compared to controls (2.85 v/s 2.00) with a p value <0.000.

Conclusion: COPD is one of the chronic debilitating diseases in our region with various extra-pulmonary complications. We found IR to be present higher in COPD patients compared with healthy controls.

Evaluating the pulmonary function as well as systemic metabolic parameters, may contribute to minimizing mortality and morbidity.

Keywords: BMI, Chronic obstructive pulmonary disease, HOMA-IR, Insulin resistance.

Gastrointestinal and Liver

6.1

MALAKOPLAKIA: A RARE CAUSE OF RECTAL BLEED IN CHILDREN

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Introduction: Rectal bleeding has frequently been attributed to polyps and anal fissures. Malakoplakia is a chronic inflammatory disorder seen mostly in the genitourinary tract, although other organ systems have also been known to be affected. Herein, we describe a case of rectal bleeding due to malakoplakia, a rare disorder that is not typically described in children..
Case Report: A 4-year-old boy presented with recurring episodes of bleeding per rectum for the last 2 years. On colonoscopy, multiple small, pale nodules were seen in the rectum on endoscopy while the rest of the large intestine appeared normal. The histological features of the rectum were strongly suggestive of malakoplakia.

Discussion: Malakoplakia is a rare chronic inflammatory disorder. The commonest site is genitourinary system followed by the gastrointestinal system. The exact pathophysiology of malakoplakia remains elusive, but is thought to be due to a defect in the bacteriocidal activity of macrophages. Grossly, malakoplakia appears as soft pale plaques or nodules. Histologically, it is identified by the presence of sheets of ovoid histiocytes (von Hansemann cells) with accumulation of granular, basophilic PAS-positive inclusions and calcified Michaelis-Gutmann bodies.
Treatment: Antibiotics that concentrate in macrophages (eg, quinolone, trimethoprim-sulfamethoxazole) are used to treat malakoplakia

Keywords: Malakoplakia, GI bleed, Pediatrics

6.2

ROLE OF PERCUTANEOUS CHOLECYSTOSTOMY TUBE PLACEMENT IN THE MANAGEMENT OF ACUTE CHOLECYSTITIS IN CRITICALLY ILL AND HIGH RISK PATIENTS

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Introduction: Acute cholecystitis is one of the commonest surgical emergencies. Standard of care is an urgent laparoscopic cholecystectomy. In patients presenting with uncontrolled medical illnesses or those unfit to undergo surgery, a percutaneously placed cholecystostomy tube along with antibiotic therapy can successfully control over 90% of acute infections. It is unclear whether these patients subsequently need surgery.

Objective: To evaluate the use of percutaneous cholecystostomy tube in patients presenting with acute cholecystitis but considered unfit for immediate surgery. The subsequent course of treatment including surgery and its outcomes.

Materials & Methods: This was a retrospective chart review of the adult patients who underwent percutaneous cholecystostomy tube placement from Jan 01, 2010 to Dec 31, 2014.

Results: Sixty-Eight patients met the inclusion criteria. Sixty-five (96%) had calculus acute cholecystitis, 3 (4%) had acalculus cholecystitis. Mean age of the patients was 58.5 years (S.D+/- 12). Forty-Four patients (65%) were males and 24(35%) were females. More than 60% of the patients were in the category of ASA III and IV. E. coli was the most common organism in bile culture. Three patients died during the hospital stay, most probably due to their underlying medical problem. Out of remaining 65 patients, 44 underwent interval cholecystectomy and 21 did not. Out of 44 who underwent interval

cholecystectomy, all were attempted as laparoscopic. Mean operative time was 130 minutes (S.D+/-58). Five (11%) patients were converted to open cholecystectomy, 2 (4.5%) developed CBD injury and 7(16%) developed surgical site infection. Out of 21 patients who were followed after tube removal, 3 (14%) developed recurrence of symptoms and 18 (86%) remained symptom free. Catheter problems occurred in 3 patients, which was solved by repositioning and flushing of catheters. Mean follow up of the patients was 19 months (S.D +/- 8).

Conclusion: Our results show that percutaneous cholecystostomy is an effective procedure and a good alternative for patients unfit to undergo immediate surgery due to systemic complications and underlying co-morbidity. Laparoscopic cholecystectomy after tube placement becomes technically more challenging as is seen by the increased rate of conversion, increased rate of bile duct injury and increased infection rate. Our results show that the recurrence of symptoms after tube removal are in a low range even for calculus cholecystitis, therefore percutaneous tube placement can be offered as definitive management to the patients who are high risk for surgery.

Keywords: Cholecystostomy, Laparoscopic Cholecystectomy, Cholecystitis

6.3 FACTORS ASSOCIATED WITH PREMALIGNANT LESIONS IN CHRONIC CHOLECYSTITIS

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Introduction: Presence of gallstones is associated with a number of changes in the gallbladder epithelium that involves progression from inflammation to hyperplasia, metaplasia, dysplasia and ultimately to cancer. Identification of factors associated with these early changes in patients with gallstones is therefore important, so that early intervention such as cholecystectomy can be performed to prevent gallbladder cancer.

Objective: To identify factors associated with premalignant changes such as hyperplasia, metaplasia and dysplasia in gallbladder mucosa in patients with Chronic Cholecystitis.

Materials & Methods: This was a retrospective case control study over a period of 10 years from 2004 to 2014. The cases were patients with histopathological proven premalignant lesions with chronic cholecystitis (n = 92). The controls were patients without premalignant lesions with chronic cholecystitis on histopathology (n = 184). Unmatched controls were randomly selected in 2:1 ratio. Univariate analysis was done to calculate the odds ratio (OR), 95% confidence interval and p-value. Multivariate regression analysis was done to identify variables having significant association independently.

Results: Ninety two patients with premalignant lesions were identified and compared to 184 controls. Premalignant lesions in gallbladder mucosa were found as; hyperplasia in 66% cases (n = 61), metaplasia in 28 % cases (n = 26) and dysplasia in 5% cases (n = 5). Mean age in both groups was almost same i.e., 47 ± 14 years. Seventy five % of sample population were female patients in both cases and controls. Mean body mass index (BMI) of both groups were not very different among cases and controls with more than 80% patients in overweight and obese category (BMI > 23). Among cases, 29% (n = 27) had a solitary stone as compared to 19% (n = 65) in control group.

Similarly mean stone size of cases was 11.86 ± 6.7 as compared to control group i.e., 10.80 ± 7.13 . Mean wall thickness among cases was 3.73 ± 1.12 mm as compared to 2.9 ± 1.60 mm in controls. After using multivariate regression analysis, wall thickness of more than 4.0 (OR = 2.070, p-value = 0.028) and single stone (OR = 1.685, p-value = 0.080) were found to be independent variables associated with these premalignant lesions in gallbladder mucosa. **Conclusion:** Premalignant changes in gallbladder mucosa appear to be significantly associated with thickening of the gallbladder wall and seem to be associated with single stone. In such a high risk group, prophylactic cholecystectomy can be recommended to prevent the progression of these early mucosal changes to cancerous lesions.

Keywords: premalignant lesions, chronic cholecystitis, gallbladder cancer

6.4 EVOLUTION OF LAPAROSCOPIC APPENDECTOMY: A 12 YEAR EXPERIENCE OF A TERTIARY CARE HOSPITAL

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Background: Laparoscopic appendectomy has gained tremendous popularity and acceptance in many countries but has not become the standard of care so far. The aim of this study is to assess the outcomes and trends of this procedure in our institute over a decade.

Materials and Methods: All adult patients who underwent laparoscopic appendectomy from Jan 2004-Dec 2015 were included in the study.

Patients' demographics, operative details, histopathology and complications were recorded in proforma.

Results: 831 patients were included in the study and trend showing a significant increase in number of laparoscopic appendectomies. 64% of patients were male, median age 28 years and median hospital stay 2 days. Mean duration of surgery is 67.47 (SD 25.86) minutes which has significantly improved over time. 7% of the cases were converted to open with decreased conversion rate in recent years. Negative appendectomy rate was 7.86% in our study which has decreased since advent of FACT. Total complication rate was 6.37%, there is rising trend in overall complications of laparoscopic appendectomy over time.

Conclusion: Laparoscopic appendectomy has become the preferred method of choice in our institution. Results showing improvement in terms of duration of surgery, conversion rate, negative appendectomy rate in addition to all previous known advantages of cosmetics, early recovery, decrease in hospital stay. Complications rate are increasing but it is reflection of the fact that more complex cases are now being attempted and completed laparoscopically.

Keywords: Appendectomy, Laparoscopic appendectomy, Conversion rate

6.5 *Dr Hassaan Bari, Dr Rizwan Khan, Dr Amir Shariff* *Department of Surgery, Aga Khan University, Karachi*

Introduction: The current treatment for acute cholecystitis consists of antibiotics followed by surgery. We conducted a study to audit our practices of perioperative antibiotic use in

patients with acute cholecystitis and to compare the outcomes after implementation of Tokyo guidelines.

Methods: All patients with histologically proven acute calculous cholecystitis managed at Aga Khan University Hospital during the year 2009 were enrolled in the study. Subsequently, the hospital staff was educated about Tokyo guidelines on various educational forums. The data were collected again for the year 2014 and compared with the previous data. The major variables included patient's demographics, antibiotics used and surgical outcomes.

Results: The study population consisted of 356 patients including 96 patients in 2009 and 260 patients in 2014. Mean age was 48.9 + 14 years and 52% were females. Comparison of the data from 2 years showed no difference in gender, ASA level, grade of acute cholecystitis and frequency of use of empiric antibiotics. However, there was significantly less use of combination therapy (43.8 vs. 69.8%, $p=0.00$), and metronidazole (37.7% vs. 66.7%, $p=0.00$) in the year 2014. Interval cholecystectomy was significantly less practiced in 2014 (8.1% vs. 16.7%, $p=0.03$) resulting in shorter hospital stay ($p=0.00$). Despite improvement in antibiotics usage practices, postoperative infection rates remained the same in both the groups (6.3% vs. 4.6%, $p=0.58$).

Conclusion: Our data suggests that implementation of Tokyo guidelines simplified and standardized the choice of antibiotics in patients with acute cholecystitis without compromising the outcomes.

Keywords: acute cholecystitis, antibiotics, tokyo guidelines

6.6

PHARMACOLOGICAL BASIS FOR THE MEDICAL USE OF CAPSICUM ANNUUM IN GASTROINTESTINAL DISORDERS

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Background and Objective: Diarrhea is the second most leading cause of death in children under the age of five years with one in nine child deaths globally. To combat this deadly disease, the antidiarrheal agents known to be most useful are opiate derivatives and bismuth subsalicylate, however, their long-term use is associated with adverse effects such as sedation, nausea, constipation and urinary retention. Therefore, various herbs are famous for their used in gut dysmotility. Green Chilli has an extensive history of being used for medicinal purposes such as dyspepsia, colic, cough and diarrhea. This study provides pharmacological basis to the medicinal use Green Chilli in diarrhea.

Methods: Isolated tissue preparations of rabbit jejunum and rat ileum were used for studying the possible mode of action of the gut modulatory effects of the crude extract of fresh Green Chilli using isotonic transducers coupled with PowerLab data acquisition system.

Results: When tested in isolated tissues, Capsicum annum fruit extract demonstrated gut modulatory properties. In rat ileum, C. annum fruit extract exhibited atropine-sensitive gut stimulant effects at dose range of 0.01-5 mg/ml. In rabbit jejunum, C. annum fruit extract showed phentolamine-sensitive spasmolytic effect on spontaneously contracting rabbit jejunum. When tested against induced contractions, C. annum fruit extract equally exhibited low K^+ (25 mM) and CCh-induced contractions while caused relation of high K^+

(80 mM)-induced contractions at little higher doses. Conversely, verapamil was more potent against high K⁺-induced contractions compared to its effect against low K⁺ and/or CCh .

Conclusion: These results indicate that Capsicum annum fruit extract has a promising inhibitory effect on the smooth muscle of the gut mediated predominantly through K⁺ channels and α -adrenergic receptors activation along with Ca⁺⁺ antagonist pathways. However, a mild atropine sensitive gut stimulant effect was also observed when tested in rat ileum. Such findings provide a rationale for its medicinal use as digestive aid and in diarrhea.

Keywords: Green Chilli, Antispasmodic, Antidiarrheal

6.7

THE ROLE OF 5-HT_{2A} RECEPTORS AND POST-RECEPTOR SIGNALING MECHANISMS IN VASCULAR HYPO-RESPONSIVENESS IN A RODENT MODEL OF CIRRHOSIS

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Background and Objective: Cirrhosis is characterized by a hyperdynamic circulatory state and altered vascular reactivity to circulatory and paracrine agents. Vascular hypo-reactivity to vasoconstrictors has been suggested to play a role in human and animal models of portal hypertension. The studies of 5HT_{2A} receptor stimulation and post receptor signaling mechanisms have revealed conflicting results.

Our study aims to investigate the role of 5-HT_{2A} receptors and post-receptor signaling mechanisms in vascular hypo-responsiveness in a rodent model of cirrhosis.

Methods: Cirrhosis was induced in Sprague-Dawley rats by administering CCl₄ at a dose of 1.5 mg/kg (subcutaneously), twice weekly for 8 to 10 weeks. The control rats were administered olive oil. At week 10, rats were dissected to isolate aortae, portal vessels and liver tissues. Aortic and portal vessels preparations were mounted in tissue bath assembly for the assessment of vasoconstrictor effects of 5HT_{2A} agonist. Treated and untreated tissues challenged with 5HT_{2A} doses were tested to quantify the mRNA levels of 5HT_{2A} using real-time PCR. Histology of Liver tissues was studied to confirm the presence of cirrhosis.

Results: In isolated aortae of control animals, α -methyl 5HT, a 5HT_{2A} receptor agonist, caused a dose-dependent (0.1-10 μ M) vasoconstriction with maximum effect of $53.4 \pm 9.75\%$ (mean \pm s.e.m) relative to phenylephrine (P.E, 1 μ M) contraction. In cirrhotic rat aortae, α -methyl 5HT also caused dose-dependent vasoconstriction at similar dose range with maximum contractile effect of $31.7 \pm 6.98\%$ at 10 μ M. Data of PCR analysis of receptors also supported the isolated tissue functional response findings in a way that expression of mRNA levels of 5HT_{2A} receptors were found lower in diseased aorta vs. control. Histological features of hepatic tissues confirmed the development of cirrhosis in diseased rats.

Conclusion: Preliminary data suggests altered sensitivity of 5-HT_{2A} receptors to agonist agent in aortic preparations of cirrhotic animals thus providing evidence for the contributing role of 5-HT_{2A} receptors in vascular hypo-responsiveness. However, further studies are required to strengthen this claim by increasing sample size and to study the post-receptor

signaling mechanisms in vascular hypo-responsiveness in cirrhosis.

Keywords: CCl₄-induce cirrhosis, α -methyl 5HT, vascular hypo-responsiveness

6.8

MANAGEMENT OF CHRONIC HEPATITIS B: KNOWLEDGE AND PRACTICES OF PHYSICIANS IN PAKISTAN

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Background: In Pakistan, approximately 4.5 million people are afflicted with CHB. The compliance with HBV management guideline is still unknown. This is the first study from Pakistan in which the knowledge and practices of treating physicians is compared with three standardized guidelines (APASL 2012 / EASL 2012 / AASLD 2009).

Method: A cross-sectional study was conducted during 2014-2015 at four tertiary care teaching hospitals in Karachi. The study participants were internists, gastroenterologist and residents who were involved in the management of CHB patients. All participants were offered to fill the study questionnaire.

Results: A total of 179 physicians (103 residents, 76 consultants) participated. Mean age of participant was 35 ± 9.3 years. Most of them followed AASLD (27.3%) and EASL (24.0%) guidelines. Entecavir, Tenofovir or Peg-IFN was considered as first line therapy by 43, 38.5 & 30.2% respectively. 17.9% preferred Entecavir with tenofovir for rescue therapy. 25.7% and 23.5% preferred Tenofovir or Entecavir as both first line and rescue therapy. Serum HBV DNA, ALT levels were used to monitor during oral

antivirals therapy by 45.3%. HCC screening was considered for all HBV cases by 51.4%, cirrhotic only by 31.3% using US (55.3%) and AFP (52.5%) every 6 months. Overall 40.2% participants have poor knowledge about consideration of liver biopsy, treatment initiation and antiviral prophylaxis. Significant association was found between grades of knowledge and gender, age group, designation and specialty ($p < 0.05$). Younger physicians, consultants (age 25-40 years) and those who were practicing gastroenterology/hepatology were more likely to have higher knowledge scores in compliance with the guidelines as compared to others. *Conclusion:* Our study highlighted the gaps in knowledge and practices in managing CHB patients according to guidelines. Efforts to improve knowledge, refresher courses and appropriate coordination between gastrointestinal and internal medicine physicians could enable management and follow-up of patients with CHB effectively.

Keywords: Chronic hepatitis B, compliance, guidelines

6.9

OBSERVATIONAL STUDY INTO ANESTHETIC RISKS POSED FOR PATIENTS UNDERGOING GASTROINTESTINAL PROCEDURES UNDER MONITORED ANESTHESIA CARE (MAC)/ CONSCIOUS SEDATION

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Objective: To study risks of anesthesia and sedation related adverse events (SRAE's) among

patient coming for gastrointestinal procedures (GI) under MAC or conscious sedation.

Study Design: Prospective, cross sectional observational analysis

Background: There is constant discussion regarding the safety of monitored anesthesia care (MAC) and conscious sedation. Many different types of gastrointestinal procedures e.g. ERCP, gastroscopy, colonoscopy are carried out under MAC (monitored anesthesia care).

The procedure carries with it risks because the patient do not have a protected airway i.e. tracheal tube; they lose oro-pharyngeal control of airway reflexes, they are receiving anesthetic drugs and already have multiple co-morbidities. Commonest risks are aspiration and cardiac arrest.

Materials and Methods: Based on statistical analysis our sample size was determined to be 100 patients undergoing conscious sedation for GI procedures. A protocol was approved by research & ethics committees, Urdu and English consent forms were drafted.

INCLUSION CRITERIA: Patients receiving MAC/conscious sedation for gastrointestinal procedures in the gastroenterology suite.

EXCLUSION CRITERIA: Patients receiving general anesthesia for gastrointestinal procedures in the gastroenterology suite.

A questionnaire was to be filled in by anesthesiologist providing the sedation and airway management to the patient. The questionnaire listed the different complications faced during the procedure and what interventions were taken.

So far data on nearly 50 patients has been collected. We are sharing our experience so far.

Results: 50 % of the cases were actually ASA III. 5.8% had emergency procedures done under (MAC). 'Intra operative chin lift' was the highest sedation related adverse event (SRAE) and was needed in 38.5% of cases. Nearly 16% patients had desaturation of SpO₂<85%.

6% of the patients suffered with 'vomiting' during procedure and just as much required assisted 'mask ventilation' during the procedure. 73% of patients had RASS (Richmond Agitation Score of Sedation) scores of 4 during the procedure. Only 6% had (suitable) RASS scores of 2.

15.4 % patients had three (3) co-morbidities while 13.5% had four (4) or more co-morbidities when they received sedation for GI procedures. Nearly 15.4% patients had three (3) or more adverse events sedation related adverse events (SRAE's) during their MAC procedure. 14% had four (4) SRAE's or more concurrent intra-op adverse events.

Conclusion: In our practice we are sedating considerably sicker sick patients who have multiple co-morbidities. We encounter adverse events, near misses and anesthesia complications on a routine basis. Even though overall the GI procedures are successful and without fatalities but absence of fatalities is not the proof of safe anesthesia practice. The sedation related adverse events (SRAE's) are nearly routine in our patients. Also, most of the patients are getting such high levels of sedation that are inconsistent with conscious sedation but in fact general anesthesia. This 'over-sedation' is an independent risk factor and harbinger of complications in recovery and can be classed as inappropriate and unsafe for intended purposes. Anesthesiologist working alone in a remote site, adds to the list of risks.

Keywords: MAC, gastrointestinal procedures, conscious sedation, sedation related adverse events.

6.10

HEPATITIS E AND ACLF: PREDICTORS OF MORTALITY IN ASIA PACIFIC REGION BASED ON THE AARC DATA

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Introduction and objectives: Acute hepatitis E (HEV) infection is a distinctive cause of ACLF in Asia-Pacific. However, most of available data has small sample size or are single center based experiences. We analyzed the APASLACLF research consortium (AARC) database to

determine factors predictive of 90 day mortality in patients with ACLF triggered by acute HEV infection.

Methods: AARC consists of 24 tertiary centers across Asia-Pacific and maintains an online database for patients diagnosed to have ACLF according to APASL criteria. All patients who had ACLF with acute HEV were reviewed for the current study.

Results: 208 patients with HEV induced ACLF were analyzed. Mean age was 44.6 years and 85% were male. Common causes of underlying chronic liver disease were alcohol (26.4 %), cryptogenic cirrhosis (26.4 %) and HBV infection (23.6 %). Overall, 59.4 % of patients survived and only one patient had liver transplantation. On univariate analysis, presence of the following at presentation was associated with mortality: jaundice, PSE, HRS, SBP, elevated leucocyte count, decreased platelets, elevated serum creatinine, high total bilirubin and INR. However on multivariate analysis, presence of PSE (5.84, 95 % CI 1.78–19.18, p 0.004), HRS (4.35, 95 % CI 1.32–14.29, p 0.01), total bilirubin at base line (1.05, 95 % CI 1.02–1.11, p 0.04) were associated with mortality.

Conclusion: Acute HEV is a leading cause of ACLF in Asia Pacific and associated with high mortality. Presence of PSE, HRS and total bilirubin at base line were associated with mortality. Disease specific models to predict both survival and mortality are needed.

6.11

IS TRANSARTERIAL EMBOLIZATION A VALUABLE TREATMENT OPTION FOR SPONTANEOUS RUPTURE OF HEPATOCELLULAR CARCINOMA: EXPERIENCE FROM A TERTIARY CARE HOSPITAL OF SOUTH-ASIA

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Introduction: Transarterial embolization (TAE) has been found beneficial in treatment of ruptured HCC in earlier studies. So far no data is available from Pakistan.

Objectives: To evaluate clinicopathological characteristics, outcomes of patients presented with spontaneously ruptured, unresectable HCC treated with or without TAE and to evaluate the factors associated with 30 days mortality.

Methods: This was a cross sectional study. Patients ≥ 18 years, presented with spontaneous rupture of unresectable HCC were evaluated. The outcome measures were control of bleeding, in-hospital mortality, 30-days mortality and factors associated with 30-day mortality.

Results: Out of 850 patients, 24 patients were diagnosed with spontaneously ruptured HCC. Mean age was 58.29 ± 15.26 years. The mean tumor size was 7.66 ± 4.22 cm and 87.5% had advanced HCC.

A total of 11(45.8%) patients were treated conservatively and 13(54.2%) underwent TAE. Control of HCC bleeding was achieved in 66.7% cases which was significantly higher for those who were treated via TAE as compared to those who were treated conservatively (92.3 % vs. 36.4%, p value 0.008). Overall median duration for which the patients remained alive after HCC rupture was longer for TAE group (39 days vs. 5 days, p0.03). In addition in-hospital mortality

(30.8% vs.72.7%, p 0.04) and 30 days mortality was also lower in patients treated with TAE (38.5% vs. 90.9%, p value 0.01).

The factors which were found significant on univariate and multivariate analysis were TAE and control of bleeding. Those who underwent for TAE had lower risk of mortality then conservative group (OR 0.25, 95% CI 0.07-0.90, p 0.03). Failure to control bleeding was associated with higher 30 days mortality (OR 2.14, 95% CI 1.24-3.68, pm 0.009).

Conclusion: Ruptured hepatocellular carcinoma is a life threatening complication requiring early diagnosis and treatment. TAE is an effective and well-tolerated treatment in the management of ruptured HCC.

Keywords: Ruptured hepatocellular carcinoma, Transarterial embolization, TAE, Pakistan

6.12

CONDITION ASSOCIATED WITH NORMAL ENDOSCOPIC FINDING IN DYSPEPTIC PATIENTS

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Background: Dyspepsia is a poorly characterized syndrome though to originate from anatomic or functional disorders of the upper GI tract. Dyspepsia encompasses a variety of symptoms including epigastric discomfort, bloating, anorexia, early satiety, belching or regurgitation, nausea, and heartburn. Rome III criteria define dyspepsia as 1 or more of the following 3 symptoms for 3 months within the initial 6 months of symptom onset postprandial fullness, early satiety, and epigastric pain or burning.

Endoscopy should be considered for patients in whom there is a clinical suspicion of malignancy. The most common structural disorders identified in patients with dyspepsia are erosive esophagitis and PUD, A potential advantage of a negative endoscopy in the evaluation of dyspeptic patients is a reduction in anxiety and an increase in patient satisfaction, yet there is little evidence to suggest significant improvement in outcomes by this approach.

Primary Objective: To observe the association of the conditions of patients with dyspepsia having normal endoscopic finding.

Secondary Objective: To compare the relations of comorbid associated with normal or abnormal endoscopic finding in patients with dyspepsia.

Methods:

Study Design: It's a retrospective study and the data is collected from endoscopic department. AKUH between 2013-2015

Sample selection:

Inclusion Criteria:

Age 18 years or above

All patient the upper dyspeptic symptoms

Exclusion Criteria:

Patient with Chronic liver Disease

Known case of Peptic Ulcer disease

Esophageal varies

Upper GI Endoscopy performed for other reasons (e.g., GI Cancers,)or any intervention

Data Collection Procedure: Ethical review committee (ERC) approval will be taken from Aga Khan University Hospital (AKUH). Its include all those patient who will present to AKUH with dyspeptic symptoms. Informed consent taken. Patient's data including age, gender, CBC, BMI, DM, TSH, symptoms, duration of symptoms, NSAIDs, PPI, h/o CLD, h/o esophageal varies, Peptic ulcer disease, gastric and oropharynx carcinoma(for PEG insertion) remarks.

Keywords: Dyspepsia, Endoscopy, conditions

6.13

POLYSPLENIA SYNDROME: WHEN THE ORGANS ARE NOT IN THEIR CORRECT POSITION- SITUS AMBIGUOUS

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We present a case of a 29 years gentleman who presented with recent onset constipation and moderately severe abdominal pain. He had similar complaints on two occasions in the last six month. He is married and have infertility. On examination is a good build young man whose general and systematic examinations were unremarkable. His complete blood count, liver function tests, creatinine, random blood sugar levels were all normal. Plain X-ray abdomen showed fecal loaded colon otherwise unremarkable.

CT scan showed multiple spleen, non-rotating small intestine, duplication of inferior vena cava, absent part of body and tail of pancreas.

He was managed by supportive treatment and rectal enema. He had uneventful recovery.

Later Doppler ultrasound of testis revealed small varicocele

Polysplenia syndrome is a rare disease which occur predominantly in female. This syndrome is associated with viscerotrial situs, cardiac abnormalities, multiple spleen (3-16 in numbers), pancreatic abnormalities. One noticeable finding is duplication of inferior vena cava, at times absent hepatic segment of IVC and prominent azygous vein. Awareness of this syndrome is needed in order to diagnose this condition. Some reports of genetic predisposition have been identified.

6.14

ABDOMINAL COCOON; A RARE ENTITY TO CAUSE INTESTINAL OBSTRUCTION

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18 year male with no actual history of interest, presented with intermittent colicky abdominal pain associated with vomiting and absolute constipation lasting for 3-4 days. This happens with him twice or thrice during last 1 year. He denies any weight loss, fever or GI bleed. Family history was negative for any GI malignancy. Examination revealed only mild generalized tenderness in abdomen with audible gut sounds. Base line workup including CBC and LFTs were normal. Workup for porphyrias was also negative. CT scan showed cluster of small bowel loops in the centre of abdomen within thick membranous sac. Features likely represent small bowel cocoon formation. No signs of bowel obstruction are seen.

Abdominal cocoon syndrome is a rare entity that is also labelled as sclerosing peritonitis or sclerosing encapsulating peritonitis. It is characterized by partial or complete encasement of small bowel by a thick rind of fibrous tissue and adhesions, causing clustering of the bowel. Occasionally, the large bowel, stomach, or other abdominal organs may be involved. It may be primary (idiopathic) or secondary to drugs (beta blockers, methotrexate) or local causes including trauma, surgery, sarcoidosis, tuberculosis or recurrent peritonitis. Treatment is usually conservative with bowel rest, nasogastric decompression and nutritional support. For symptomatic disease surgery is the curative option although tamoxifen, steroids, colchicine, azathioprine and mycophenolate mofetil has also been tried.

6.16 CONTRIBUTION OF ACTIVE H. PYLORI INFECTION AND SMALL INTESTINAL BACTERIAL OVERGROWTH IN CIRRHOTIC PATIENTS WITH MINIMAL HEPATIC ENCEPHALOPATHY

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Background: Minimal hepatic encephalopathy (MHE) in cirrhotics is associated with impaired quality of life, and is also an occupational health hazard. The role of active *Helicobacter pylori* (Hp) infection and small intestinal bacterial over-growth (SIBO) in precipitating minimal hepatic encephalopathy MHE is less well understood.

Objectives: To determine the frequency of Hp infection and SIBO in cirrhotic patients with or without MHE

Methods: This was a cross-sectional study conducted in the out-patients department of Aga Khan University, from November 2014 to October 2015. 90 patients who met the required inclusion and exclusion criteria were enrolled after written informed consent. These patients were subjected to critical flicker frequency (CFF) analysis and psychometric hepatic encephalopathy score (PHES) to detect MHE. They also underwent Urease Breath Test (UBT) and Hydrogen Breath Test (HBT) to diagnose active Hp infection and SIBO respectively. Patients tested positive were treated appropriately with antibiotics, with repeat UBT and HBT after 6 weeks of completion of therapy to document cure. CFF analysis and PHES were also repeated at the same time to detect improvement in MHE.

90 healthy subjects (age and gender matched) were also enrolled after written informed

consent, who underwent CFF analysis and PHES, followed by UBT and HBT.

Results: 55 were diagnosed to have underlying MHE. Among patients who had MHE, 28 were positive for UBT (representing active Hp infection) as opposed to 15 in the non-MHE group (p-value = 0.45). Similarly, in the MHE group, 17 patients were diagnosed to have SIBO (based on a positive UBT), while 11 were SIBO positive in the non-MHE group (p-value = 0.95). Overall, 43 patients were positive for UBT as compared to 6 age and gender-matched controls who were also positive (p-value <0.001). Likewise, there were 28 patients who were positive for HBT, while only 4 controls had SIBO (p-value <0.001).

Conclusion: There is no difference in the frequency of active Hp infection or SIBO in cirrhotic patients with or without MHE.

Keywords: Minimal hepatic encephalopathy, H. pylori infection, small intestinal bacterial overgrowth

6.17 ASSOCIATION OF HELICOBACTER PYLORI AND PROTOZOAL PARASITES IN PATIENTS WITH CHRONIC DIARRHEA

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Back ground & Aim: *Helicobacter pylori* (H. pylori) and protozoal parasites e.g. *Blastocystis* sp, *Giardia intestinalis* (G. intestinalis), *Entamoeba* species (e.g. *E. histolytica*, *E. dispar* and *E. moshkovskii*), infection are common in our population and share the feco-oral route of

transmission. The aim of this study was to compare stool microscopy with nucleic acid testing for protozoal parasites and determine any association of these protozoa with *H. pylori* in patients with chronic diarrhea.

Method: 334 adults aged 16-83 years with a mean age of 42 year \pm 15, 216 (68%) were male (161 patients with chronic diarrhoea and 114 diarrhoea-free volunteers who acted as controls) were checked for infection with these parasites by stool microscopy and DNA extraction for PCR using specific primers for each of the parasites..

Results: Stool microscopy identified *G. intestinalis* 19(6%), *Blastocystis sp* in 68(22%) and *Entamoeba* cysts in 66(21%). PCR for *H. pylori* was positive in 101 (32%), *G. intestinalis* in 45(14%), *Blastocystis sp* 119(37%), *E. histolytica* 20(6%), *E. dispar* 78(25%) and *E. moshkovskii* 41(13%), respectively. In patients with chronic diarrhea, 43% (43) were PCR positive for *Blastocystis sp* and *H. pylori* positive while 30% (65) were positive for *Blastocystis sp* but negative for *H. pylori* ($P=0.02$); 15% (15) were PCR positive for *G. intestinalis* and *H. pylori* while 14% (30) were positive for *G. intestinalis* but negative for *H. pylori* ($P=0.81$); 15% (7) were PCR positive for *E. histolytica* and *H. pylori* while 8% (9) were positive for *E. histolytica* but negative for *H. pylori* ($P=0.20$); 27% (13) were positive for *E. dispar* and *H. pylori* while 21% (24) were positive for *E. dispar* but negative for *H. pylori* ($P=0.42$); 12% (6) were positive for *E. moshkovskii* and *H. pylori* while 23% (26) were positive for *E. moshkovskii* but negative for *H. pylori* ($P=0.126$), respectively.

Conclusion: PCR of stool sample had a better yield than stool microscopy in detection of protozoal parasites. There is an association of *Blastocystis sp* infection with *H. pylori* infection, which needs further study.

Keywords: *Blastocystis sp* infection, *Helicobacter pylori*; diarrhea; coinfection

6.18

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

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Gall bladder tuberculosis as an isolated infection is an extremely rare entity even in the parts of world with endemicity. 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 and core biopsy, antrum biopsy via gastroscopy. 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

6.19

PRIMARY HEPATIC TUBERCULOSIS

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We are reporting a case of primary hepatic tuberculosis. The patient presented to the clinic with complaints of epigastric which progressed to right hypochondrium over a period of two years which remain undiagnosed and was not properly worked up till she was brought to tertiary care hospital. Here with help of MRI this revealed a hypotense lesion which showed granulomatous inflammation on biopsy. It was diagnosed as hepatic tuberculosis and was started on anti tuberculous therapy to which the patient responded well.

Primary hepatic tuberculosis represents an extremely rare clinical entity with only a few cases reported to date. Herein, we report a case of primary hepatic tuberculosis showing good response to anti tuberculosis therapy.

Keywords: Liver mass; TB; anti-TB; tuberculoma; tuberculosis

6.20

HAMARTOMATOUS POLYP

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Hamartomatous polyps in the stomach have been described as gastric lesions mimicking a submucosal tumor. However, most polyps of GI tract occur as isolated colonic lesions. Gastric polyps are incidentally detected in 2–3% of

upper gastrointestinal endoscopic examinations [1]. We report a case of gastric hamartomatous polyp in a patient in Pakistan with decompensated HCV-CLD. This is a rare histological type of gastric polyp, not associated with any syndrome.

Endoscopically, multiple tiny hyperemic spots in long linear fashion were suggestive of early GAVE formation. Large pedunculated polyp was seen in antrum of stomach which was removed by polypectomy snare and was sent for histopathology.

On histopathology, polypoidal lesion was seen, composed of cystically dilated glands.

Underlying small tubular glands were also identified. In areas there was ramification of the smooth muscle fibres within the lamina propria. Dysplasia/Malignancy was ruled out. Diagnosis of Antral polyp with features suggestive of Hamartomatous polyp was made.

6.21

MECKEL'S DIVERTICULUM: A CASE REPORT OF OVERT OBSCURE GI BLEED WITH COMBINE GASTRIC AND PANCREATIC HETEROTOPIC TISSUES

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Meckel's diverticulum is congenital anomaly of gastrointestinal tract that affect 2% of general population. It occurs due to incomplete obliteration of omphalomesenteric duct during embryonic period of life. It may remain asymptomatic or can manifest with lower GI bleeding or intestinal obstruction. Usually it presents before the age of 2 years and contain gastric ectopic tissue. We report here a case of

young male with meckel's diverticulum who came in massive lower GI bleeding and contained both heterotopic gastric and pancreatic tissue in it. A healthy 16-year-old boy, with no personal or family history of actual interest, arrived in ER with history of bleeding per rectum. He had history of such episodic bleeding P/R during 1 year.

After initial resuscitation, a CT abdomen with GI bleed protocol was done followed by conventional angiography, both of which were negative for any active bleed. Colonoscopy revealed altered blood throughout the colon as well as in terminal ileum. An upper GI endoscopy ruled out active bleeding source when examination was done up to jejunum. A meckel's scan was done which was positive for ectopic gastric mucosal uptake. Patient underwent surgical resection and histopathology confirmed the presence of both gastric and pancreatic tissue within the meckel's diverticulum.

6.22 CLINICAL CHARACTERISTICS OF INFLAMMATORY BOWEL DISEASE AT A TERTIARY CARE SETTING IN PAKISTAN

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Background: Inflammatory bowel disease (IBD), is a group of conditions with multifactorial etiology that have been associated with increasing morbidity and mortality in the developing countries in recent years. Data regarding the disease presentation and epidemiological characteristics is lacking for our population.

Aims: Study the epidemiological characteristics of this condition in patients that present to a tertiary care center in Karachi, Pakistan.

Methods: A retrospective cross-sectional study was conducted using a structured questionnaire to obtain data from patient records at Aga Khan University Hospital. All admitted or visiting adult patients suffering from either Crohns Disease (CD) or Ulcerative Colitis (UC) were included in this study.

Results: A total of 150 patients suffering from ulcerative colitis and 100 patients diagnosed with CD were included in the study. Both disease were seen in both genders with UC being seen equally while CD was more common in men. Most cases of UC were identified in the fourth decade of life with the commonest presentation being abdominal pain and diarrhea. CD, on the other hand, presented earlier with most cases arising in the early third decade of life. Patients presented with no particularly popular symptom. 44% of the cases of UC were of proctitis type followed by 24% of cases of unspecified type and 18% pancolitis. Upto 50% percent of UC patients suffered no complication with a very few presenting with anal fistula, perforation and toxic mega colon.

Conclusion: With this understanding of the disease presentation and outcome we can begin to develop new diagnostic and therapeutic strategies optimum for our setting to tackle these devastating diseases. A large scale prospective study is also recommended to study these trends in our population as data is severely lacking in this regard.

6.23

PLUMMER-VINSON SYNDROME AS THE SOLE INITIAL PRESENTATION OF CELIAC DISEASE

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Abstract: Celiac disease patients typically present with common symptoms such as abdominal pain and discomfort, bloating, diarrhea, and irritable bowel-like symptoms, but can also present with extra-intestinal complaints. We report here a case of young female who presented with history of dysphagia and found to have plummer vinson syndrome. Further workup revealed celiac disease as a cause of her iron deficiency anemia.

Case Report: A 25 year female, married, without any prior comorbidities presented with 5 years H/O Dysphagia which was more for solids than liquids. She feels food trapped in upper food pipe. Symptoms were progressively worsening, especially during last 2 months, associated with recurrent oral ulcers, regurgitation of sour fluid after meals, occasional loose stools. She also gave history of decrease appetite, failure to gain weight, exertional dyspnea and easy fatigue but denied any vomiting, abdominal pain, GI bleed, jaundice, genital ulcer, ocular symptoms. F/H was significant for HTN. On examination she was a thin lean, emaciated lady, appeared pale and dehydrated. There were multiple aphthoid ulcers in oral cavity with angular stomatitis, koilonychia and small, soft, mobile, nontender, B/L cervical LN. Abdominal examination revealed mild tenderness in epigastrium. Rest of the examination was unremarkable. Lab investigations showed microcytic anemia with iron deficiency. Upper GI endoscopy revealed a tight stricture near upper esophageal sphincter. Barium swallow showed an esophageal web in

upper esophagus. She subsequently underwent dilatation of web via endoscopy. After dilatation scope was negotiated upto duodenum where mucosa appeared fissured hence biopsies were taken which showed increased intraepithelial lymphocytes. Further serology for celiac disease was sent which showed high anti-tTG IgA antibody. Post dilatation her symptoms of dysphagia got resolved. She is doing well on gluten free diet.

6.24

CASE SERIES OF AUTOIMMUNE PANCREATITIS; TERTIARY CARE HOSPITAL KARACHI

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Autoimmune pancreatitis is a fibro-inflammatory autoimmune disorder affecting the pancreas and could also present as a systemic disease. Since it is a relatively new and rare entity, its recognition continues to rise worldwide. Yoshida et al. first described some patients who had characteristics of autoimmune pancreatitis in 1995, thus presenting autoimmune pancreatitis as a distinct entity. In a study conducted in Japan, 0.82 per 100000 people were diagnosed with autoimmune pancreatitis. However, the prevalence of autoimmune pancreatitis in most parts of the world is yet to be determined. There are two types of autoimmune pancreatitis. Type 1 pancreatitis which is a systemic IgG4 related disease and type 2 which is localized to the pancreas only. It is marked by focal or diffuse swelling of the pancreatic parenchyma accompanied by narrowing of the main pancreatic duct, lymphoplasmacytic

inflammation on histology, hypergammaglobulinemia and a favorable response to corticosteroid therapy. Autoimmune pancreatitis presents a diagnostic challenge in most cases since it shares many common features with pancreatic cancer and differentiating between these two is important to guide appropriate management. International Consensus Diagnostic Criteria (ICDC) for autoimmune pancreatitis is used to diagnose autoimmune pancreatitis and to differentiate it from pancreatic cancer. The common modalities to diagnose AIP in the ICDC are based on pancreatic parenchymal imaging, pancreatic ductal imaging (i.e., ERCP), serum IgG4 level, other organ involvement, histology of the pancreas, and response to steroid treatment. (Importance of our study...)

Here we will describe four cases of autoimmune pancreatitis that presented to Aga Khan University Hospital, Karachi, Pakistan. To our best knowledge, this is the first case series of autoimmune pancreatitis from Pakistan.

6.25 FREQUENCY OF HER2/NEU EXPRESSION IN COLORECTAL ADENOCARCINOMA

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Background: Human Epidermal Growth Factor (Her-2/neu) has strong therapeutic implications in certain cancers like breast and gastric cancer. Literature on its frequency in colorectal cancer (CRC) is scarce.

Aim: To investigate frequency of Her-2/neu expression in CRC and its correlation to histopathological type, grade and stage of the tumor.

Methodology: The study was conducted in National Institute of Liver and GI diseases (NILGID), Dow University of Health Sciences (DUHS) and at the Histopathology section of the Dow Diagnostic Reference and Research Laboratory (DDRRL) after ethical approval. Biopsies of CRC patients who were diagnosed during colonoscopy at NILGID were routinely grossed, processed and sections were stained with Hematoxylin and Eosin. Expression of Her2/neu was investigated using immunohistochemistry. Her2/neu positivity scoring was performed using three criterias: pattern of staining, intensity of staining & percentage of cells stained. Her2/neu positivity was correlated with various clinicopathological parameters.

Results: A total of 95 cases were studied. 78.9% cases showed expression of Her2/neu. Cytoplasmic Her-2/neu expression was significantly higher in low grade while membranous Her-2/neu expression was significantly more in high grade colorectal cancer (p-value=0.038). Advanced stage (cIV) of colorectal cancer was significantly associated with cytoplasmic Her-2/neu expression (p-value=0.017), strong & moderate intensity (p-value=0.006) and score 3+ (p-value=0.05).
Conclusion: Her2/neu is considerably over-expressed in colorectal adenocarcinoma in Pakistani population. Our findings indicate a strong association of cytoplasmic Her-2 expression with low grades and membranous Her-2 expression with high grades of colorectal cancer. Our findings may help in designing further trials involving Her2 directed therapy in CRC.

Keywords: Her-2/neu, colorectal adenocarcinoma, immunohistochemistry

6.26

IMMUNOMODULATORY EFFECTS OF PSYLLIUM EXTRACT ON HELICOBACTER PYLORI INTERACTION WITH GASTRIC EPITHELIAL CELLS

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Background and Aim: Natural plant product Psyllium has anti-inflammatory activity that can modulate the function of cytokines. We determined the effect of Psyllium husk extract on interleukin (IL)-8 and NF-kappaB (NF-κB) secretion by gastric epithelial cell in response to *Helicobacter pylori* (*H. pylori*).

Methods: Human gastric adenocarcinoma cell line (AGS) cells were pretreated with Psyllium extract in different concentrations before *H. pylori* infection. Cell culture supernatant was analyzed for IL-8 and NF-κB by ELISA. RNA from cells was used for Real-Time-PCR for messenger RNA expression of IL-8.

Result: Psyllium extract 5 and 10μg/ml markedly ($P<0.001$) lowered basal IL-8 by 64.71% and 74.51%, respectively and *H. pylori* stimulated IL-8 was also ($P<0.001$) lowered by 41.67% and 66.67%, respectively. Psyllium 5 and 10μg/ml also reduced ($P<0.0001$) *cagA* positive *H. pylori* induced IL-8 mRNA expression by 42.3% and 67.6%, respectively. Psyllium also reduced ($P=0.0001$) NF-κB in response to *H. pylori* strains confirming its role as anti-inflammatory agent.

Conclusion: *Isipaghul* extract has an effect on both basal and stimulated secretion of IL-8 by *H. pylori*. It decreased IL-8 expression mediated by *H. pylori*.

Keywords: Gastric epithelial cells, *Helicobacter pylori*, Psyllium, Interleukin-8, NFκB

6.27 RIGIFLEX BALLOON DILATION UNDER DIRECT ENDOSCOPIC VISION FOR TREATMENT OF ACHALASIA CARDIA

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Introduction: Achalasia cardia is a primary esophageal motility disorder characterized by aperistalsis of the esophageal body and incomplete or absent relaxation of the lower sphincter in response to swallows. Pneumatic balloon dilatation is the first-line nonsurgical therapy for achalasia. The principle of this procedure is to weaken the lower esophageal sphincter by controlled tearing of esophageal muscle fibers generated by the radial force of the balloon.

The procedure is always performed under sedation and traditionally under fluoroscopy. Demonstrated here is the technique of pneumatic balloon dilatation of the lower esophageal sphincter under direct endoscopic-guidance.

Methods: Over a 13 month period, from February 2014 to March 2015, all symptomatic achalasia patients presented to our center were consecutively enrolled. The diagnosis was established based on clinical, radiographic and endoscopic criteria. All dilations were performed with the Rigidflex balloon dilator (35-mm, inflated, 10-cm length; Boston Scientific, Natick, MA, USA) by a single expert gastroenterologist. The procedure was performed under conscious sedation after clear liquid diet for 24 hours and an overnight fast. A 35 mm balloon dilator was passed over the guide wire and positioned under endoscopic guidance with the LES positioned at the midpoint of the balloon. The balloon was inflated to 12 psi for

duration of 60 seconds. Patients were discharged after a 3-hour observation period.

Results: Seven patients (3 male and 4 female) with mean age of 34±15 with achalasia were enrolled in the study. Patients were followed up after 1, 3 and 6 month period. Only 1 patient developed reflux symptoms after 3 months period and need second dilatation. None of our patients developed perforation.

Conclusion: The results of our study showed that Achlasia balloon dilatation under direct endoscopic vision is equally effective and safe.

6.28

CLINICAL MANIFESTATIONS OF ADULT CELIAC DISEASE: AN EXPERIENCE FROM PAKISTAN

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Objective: The objective of this cross sectional study was to evaluate the presentation of celiac disease in adults.

Introduction: Celiac disease (CD) is a systemic autoimmune disorder triggered by dietary gluten in genetically susceptible persons. The prevalence of Adult celiac disease in Pakistan is not known.

Methods: This was a cross sectional and prospective study. All adult patients of either gender diagnosed as celiac disease on the basis of history, clinical presentation, positive serology i.e Ttg A and Ttg G (value >12 IU/ml detected by ELISA), histological findings compatible with celiac disease, obvious clinical and serological response to a gluten-free diet, and exclusion of other clinical conditions mimicking CD. Descriptive statistics were obtained by frequencies and percentages.

Results: Two hundred patients suspected cases of CD were evaluated. One hundred and fifty eight patients were diagnosed as the case of CD, 106 (55.5%) were female and 53 (33.5%) were male. The mean age at diagnosis was 29±12 years. Classical CD was seen in 99 (62.7%) patients, atypical CD with extra intestinal complaints in 50 (31.6 %) and silent CD in 9 (5.7 %). Duodenal biopsy, done in all patients, revealed Marsh type 1 in 01 (0.6%), type 2 in 30 (19%), type 3a in 95 (60%), type 3b in 25 (16 %), type 3c 07 (4.4%).

Conclusion: In conclusion, CD is one of the most common causes of chronic malabsorption in adults and has diverse presentations. Adults with unexplained extra intestinal symptoms should be investigated for CD

6.29

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

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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. The present study was designed to provide real-life data on HBV infection in an effort to improve the quality of treatment and public health practice in controlling the disease.

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 September 2015. 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.

Data collected from the case report form included demographic information, comorbidities, concomitant infections, the most recent laboratory tests and results, the presence of hepatic complications, previous and current antiviral treatments taken.

Results: A total 144 patients were analyzed. The median duration of documented HBV infection was 6 years. Upper gastrointestinal bleeding was the most frequent hepatic complication (14.6 %). Antiviral medications had been received by 41 % of patients. Nucleos (t) ide analogs (27.2%) were the major antiviral medications prescribed for HBV-infected patients (most commonly entecavir).

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

6.30

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

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Introduction: Gastric variceal bleeding is not only life threatening, also contributes to high rates of morbidity, recurrent hospitalizations.

Aim: 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 September 2015. 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 33 consecutive patients that had undergone NBCA injection for GV. The mean age was 51±10 years. The mean follow-up was 16±8 months and the most common cause for GV was hepatitis C related liver cirrhosis (51.5%). Child-Pugh score at presentation for was A-21 %; B-79 %, 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 3.8%. Mortality rate was 3.8%. No immediate or long-term complications of NBCA injection

occurred in any of these cases during the time of follow-up.

Conclusion: NBCA injection of GV is a safe and successful therapeutic intervention. Patients with very 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

6.31

PREDICTORS OF POOR OUTCOME IN HOSPITALIZED CHRONIC LIVER DISEASE PATIENTS

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Introduction: The tremendous global burden of Chronic Liver disease has been well documented with high mortality rate. Many prognostic models have been developed over the years to help classify the severity of Liver disease and direct the aggressiveness of medical care, (including CTP and MELD scores) but the subjectivity of the variables (ascites and encephalopathy), inter-laboratory variability, and lack of inclusion of comorbid conditions and complications of CLD limited their accuracy. Yet there is much to explore about the impact of comorbid conditions on the course and outcome of chronic diseases. The aim of this study was to evaluate patient parameters that are predictive of morbidity and mortality in patients admitted for decompensations of chronic liver disease beyond child and MELD scores.

Methods: This retrospective study analyzes patients who were admitted with decompensated chronic liver disease during January 2013 to

December 2014 at Aga Khan University Hospital, Karachi identified from medical record by using ICD coding, with an objective to assess patient factors predicting a higher risk of in-patient mortality, prolonged hospital day (>5days) and early readmission (within 14 days) in hospitalized Chronic Liver Disease Patients
Results: A total of 281 patients (399 admissions) were reviewed, out of which 64.8% were male. The mean age of patients was 54.3 ± 11.7 years, with a mean duration of CLD of 4.3 ± 3.84 years. Most common underlying cause for CLD was HCV (63.7%). HCC was found in 24.2% of patients. Presence of hypotension, tachycardia, tachypnea, hypoxia, renal impairment, ascites, encephalopathy, pneumonia, NSTEMI, coagulopathy, deranged electrolytes on arrival and repeated admission during last 3 months were found to be associated with high mortality. Length of stay was prolonged with concomitant presence of sepsis, PSE, renal injury, coagulopathy and hyponatremia. Number of admissions in last 3 months, older age, and presence of diabetes, CKD, ascites and hyponatremia were highly predictive for recurrent admission.

Conclusion: Besides conventional child and MELD scoring, patient related factors also affect the outcome, which need to be incorporated and a new score should be proposed which include these factors and can anticipate the prognosis even more efficiently.

Keywords: Chronic liver disease, outcomes, prognostic factors.

6.32 SURVIVAL RATES AND PROGNOSTIC FACTORS FOR UNRESECTABLE HEPATOCELLULAR CARCINOMA AFTER TRANS-ARTERIAL CHEMOEMBOLIZATION

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Background: Transcatheter arterial chemoembolization (TACE) is recommended as palliative treatment for unresectable Hepatocellular carcinoma (HCC). No data is available from Pakistan in this regard.

Aims: To estimate the survival of the patients with unresectable HCC treated with TACE and to analyze the prognostic factors affecting survival.

Methods: All patients diagnosed with unresectable HCC who underwent for TACE during 2000-2012 at Aga Khan University Hospital, Karachi, Pakistan were reviewed. Information was collected regarding demographic characteristics, baseline laboratory parameters, tumor characteristics and staging, response to TACE and survival. Survival at 1, 3 and 5 years and the predictors for survival were estimated.

Results: TACE was performed in 453 patients with HCC. Mean age was 56.4±10.1 years and 77.7% were males. Hepatitis C was the most prevalent (71.1%) etiological factor. Mean Childs and MELD score was 6.5±1.0 and 9.77 ± 2.27 respectively. Median AFP was 3368.4 ± 17511.9 IU/ml. The average maximum tumor size was 5.7±3.2cm, single or paucifocal HCC were found in 2/3 of cases. Predominantly HCCs were infiltrating (52.1%), advanced HCC (64.5%) with PVT in 9.3% cases.

Our 453 patients received, 664 sessions of TACE (range 1-5). Three hundred and ten (68.4%) received single session of TACE and 21.9% received two sessions of TACE. After first session of TACE, 13.6% achieved complete response, while 37.1%, 8.2% and 24.9% had partial response, stable disease and progressive disease respectively. Mean follow up was 9.27±13.93 months (range 2-111 months). The overall mean survival was 51.8 [CI 95%: 40.97-62.63]. The cumulative 1-year, 2-year, 3-year, 4-year and 5-year survival rates were 62%, 54%, 43% and 37% respectively.

Child's class B (Hazard ratio 2.54; 95% CI 1.44-3.63; p <0.0005), AFP >200 IU/ml (Hazard ratio 2.18; 95% CI 1.33-3.58; p 0.002), platelets counts (109/L) (Hazard ratio 1.003; 95% CI 1.00-1.006; p 0.02) and sessions of TACE (Hazard ratio 0.52; CI 95% 0.32-0.83; p-value 0.07) were the factors associated with a poor survival.

Conclusions: TACE was useful and well tolerated palliative therapy for unresectable HCC. Child's class B, AFP >200 IU/ml, platelets counts and sessions of TACE were the factors associated with a poor survival.

6.34 FREQUENCY OF HEPATITIS D VIRUS IN PATIENTS WITH HEPATITIS B VIRUS LIVER DISEASE

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Background/Objectives: Hepatitis delta virus (HDV) is a defective RNA virus dependent on Hepatitis B virus (HBV) infection for its replication and expression. All patients with HBV infection should be tested for the presence of HDV infection. It is estimated that approximately 5% of HBV carriers in the world

are HDV infected patients. Since HDV can only cause infection in the presence of HBV, it was thought that the widespread introduction of HBV vaccine would ultimately result in decreased prevalence of HDV. The aim of this study was to determine the prevalence of HDV coinfection with chronic hepatitis B patients.

Methods:

Study Design: Cross sectional study.

Duration of Study: Six months.

Data Collection Procedure: Data was prospectively collected from patients after taking a verbal consent and Permission from ethical review committee. Demographic information like age, gender, duration of disease and duration of treatment was entered in the performa. The blood for HDV antibody sent. 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 129 diagnosed patients of chronic HBV participated in study. Mean age in our study was 43.80 years with the standard deviation of ± 7.56 . 77 (59.7%) were male and 52 (40.3%) were female. Amongst 129 chronic HBV patients, 35 (27.1%) had HDV virus infection and 94 (72.9%) did not have HDV virus infection.

Conclusion: The results of the current study show a high prevalence rate of HDV-HBV coinfection in Pakistan that has been increased over time. Pakistan is an endemic country for HDV infection. Males are more infected than females. Ministry of health should pay attention to the risk factors responsible for the spread of this dual HDV/HBV infection.

Keywords: Chronic hepatitis B, HDV infection and coinfection.

6.35

WEIGHT LOSS: WHATS LYING UNDERNEATH SCLEROSING MESENTERITIS

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Introduction: Sclerosing mesenteritis is a rare and benign pathological condition characterized by chronic fibrotic inflammation of the adipose tissue of the mesentery of small intestine and colon. This condition with unknown etiology, lacks special and specific clinical presentation with typical signs, so easily misdiagnosed. Diagnosis can be challenging and complex, as clinical presentation ranging from asymptomatic to acute abdomen, require appropriate clinical, imaging and histopathological evaluation.

Case: A 59 years old man being a non-smoker, presented as outpatient with the history of significant weight loss of 30 Kg in last 3 months with no abdominal pain or discomfort. He had no significant past medical or surgical history with no prior history of medication intake. He underwent complete laboratory evaluation including blood picture, liver profile, thyroid and renal functions, all were normal except for ESR of 44 and stool for occult blood was positive. Esophagoscopy and colonoscopy performed showing gastritis and a polypoidal rectal mass. He then underwent CT scan revealing a rectal mass with a partly calcified soft tissue lesion involving the mesentery of small intestine. Biopsy of rectal mass was inconclusive followed by biopsy of the lymphnodes that again showed features of chronic nonspecific inflammation. Underwent exploratory laparotomy for definitive diagnosis, found to have the hard calcified nodules in the ant.abd wall, ascending colon mesentery, multiple small bowel mesentery and mesentery of transverse colon. no gross ascites, No liver, bowel or kidney involvement. The patient's

postoperative course was uneventful. Pathology examination proved to be consistent with sclerosing mesenteritis with dense inflammation and fibrosis with foamy histiocytes and lymphoid aggregates. Prednisolone was started along with methotrexate by the oncologist. Clinically he started to improve and gained weight. As clinically he remained stable rather improved so repeat CT scan was not performed.

Conclusion: Sclerosing mesenteritis is a rare idiopathic fibrosing inflammatory disorder that involves predominantly the small bowel mesentery. Diagnosis of the disease is a challenge to surgeons, radiologists, gastroenterologists and pathologists. Its clinical presentation is quite diverse and ranges from being asymptomatic to a debilitating disease. Proper evaluation of the patient regarding their clinical features, imaging and histopathology is required. Overall prognosis is usually good and recurrence seems to be rare. However long-term follow-up is needed to document the results.

Keywords: Weight loss, Sclerosing mesenteritis

Genetic Disorders

7.1 INCIDENTAL FINDING OF LYMPHATIC APLASIA IN A NEONATE

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We report a case of a healthy male infant with an incidental finding of bilateral lower limb swelling present since birth when admitted with symptoms of sepsis at Aga Khan University Hospital. Aplasia of lymphatics (Milroy's disease) was then diagnosed and compressive massage was done. Extensive research and studies report that primary lymphedema and syndromic occurrences are rare and lymph vessel maldevelopment remains to be the most immediate symptom in limb lymphedema. Poster being mailed

Keywords: Lymphatic Aplasia, Lymphedema, legswelling

7.2 A STUDY OF XMN I (C→T) POLYMORPHISM EVALUATION IN B- THALASSEMIA PATIENTS

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Introduction: β -thalassemia is the most common monogenic disorder in Pakistan. Several genetic factors influence its severity in patients, including prevalence of Xmn I polymorphism (substitution of C \rightarrow T) at position -158 upstream of G γ gene. In β -thalassemia patients, presence of Xmn I site is found associated with increased

levels of HbF and significant improvement of clinical features.

Methods: Genomic DNA was extracted from patients' peripheral blood specimens, followed by PCR amplification and digestion of amplicons using restriction enzyme Xmn I. Genotypes TT, CT and CC were scored by agarose gel electrophoresis.

Result: This cross-sectional study was carried out in the Molecular Pathology Section from April 2015 to May 2016. A total of 94 blood samples obtained from β -thalassemia patients were examined for Xmn I polymorphism. The percentage of females was 54%, and patients' median age was 3.4 Years. Out of 94 patients, 9 patients (9.5%) were genotype TT, 09 patients were genotype CT and 76 (80%) patients were positive for genotype CC.

Conclusion: Xmn I polymorphism is an important genetic marker for predicting severity of β -thalassemia disease in Pakistan. Our study showed that C allele is more common in the Pakistani population compared to T allele. Patients having T allele homozygous genotypes are likely to have increased HbF and better clinical prospects compared to CC genotype.

Keywords: Thalassemia, Xmn1, Polymorphism

Haematology and Oncology

8.1 INCIDENCE, COMPLICATIONS AND OUTCOME OF TUMOR LYSIS SYNDROME IN PEDIATRIC PATIENTS WITH HEMATOLOGICAL MALIGNANCIES

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Introduction: Tumor Lysis Syndrome (TLS) is serious complication of anticancer chemotherapy and responsible for substantial morbidity and mortality. Our study reports the incidence and outcomes of TLS in pediatric patients with hematologic malignancies.

Methods: Retrospective chart review of 317 pediatric patients with hematologic malignancies during January 2008 to December 2013.

Demographic features, clinical and laboratory parameters of TLS, with immediate and six month outcome were determined using a semi-structured questionnaire.

Results: Median age at diagnosis was 9 years, with the 79.2% patients being male. Laboratory TLS was present in 36(11.4%) patients, with 27(8.5%) developing clinical TLS and 13(4.1) requiring intensive care support.

Hyperphosphatemia was the most frequent metabolic abnormality (14.2%), followed by hypocalcemia (13.9%), Hyperuricemia (12.6%) and hyperkalemia (1.3%). Forty-five (14.2%) patients developed AKI. Patients developing TLS had a significantly higher white cell count at initiation of chemotherapy (142.0 ± 173.1 vs. 31.5 ± 58.0 ; $p=0.01$) and a higher incidence of AKI (58.3% vs. 8.5%; $p < 0.001$).

Conclusion: The incidence of TLS pediatric hematologic malignancies was 11.4% at our center. The main cause of death was sepsis. Hyperphosphatemia was the common metabolic derangement and hyperkalemia was the least common. TLS warrants intensive supportive

care to prevent further morbidity and decrease mortality

Keywords: Tumor Lysis Syndrome, Acute Kidney Injury, Pediatrics

8.2 RISK FACTORS ASSOCIATED WITH PAEDIATRIC THROMBOSIS: A FIVE YEARS RETROSPECTIVE INSTITUTIONAL ANALYSIS

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Introduction: Thrombosis is a rare disorder in paediatric age group as compared to adults. According to the Dutch registry, the annual incidence of venous thromboembolism (VTE) in paediatric population is 0.14 per 10000 children.

Objective: To evaluate the risk factors associated with paediatric arterial and venous thromboembolism over five years.

Method: A retrospective five years analysis was done from January 2011 to September 2015. Files coded with lower limb deep venous thrombosis, upper limb venous thrombosis, arterial thrombosis, Budd Chiari syndrome, pulmonary embolism, cerebral venous sinus thrombosis and renal vein thrombosis were reviewed for their associated risk factors. Frequencies were generated for quantitative variables.

Result: A total of 35 patients aged < 18 years were diagnosed with thrombosis. Male to female ratio was 1:1, 4 of them were neonate. The commonest site of thrombosis was lower limb (31%), followed by upper limb venous thrombosis (17%) and abdominal vein thrombosis (17%). Purpura fulminans was reported in two out of four neonates. Overall incidence of hospital acquired thrombosis was

(9/35). Catheter related, prolonged hospital stay and malignancy were found to be the most common associated risk factors.

Conclusion: The commonest risk factor of thrombosis in paediatric patients was iatrogenic (that is prolonged hospital stay and line related).

Keywords: Thrombosis, Risk factors, Paediatric

8.3

THE SAME PROBIOTIC THAT'S IN YOUR YOGURT COULD DETECT LIVER CANCER (GENETICALLY ENGINEERED BACTERIA COULD DETECT LIVER CANCER)

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Background: Bacteria can penetrate and grow in the tumor microenvironment, where there are lots of nutrients and the body's immune system is compromised. Because of this, scientists have been trying to develop bacteria as a possible vehicle for cancer detection.

Method: Research articles from 2014-2016 were selected and reviewed to find different views. In all the articles the same method was used that is by removing extract of DNA programming found in fireflies and transferring it to a harmless form of E. coli bacteria, the scientists altered these bacteria to produce a luminescent protein when feeding on liver tumor cells. This protein can be detected via a urine test. Findings: Literature revealed that by orally delivering these bacteria in mice scientists weren't able to get bacteria concentrations high enough to colonize the tumors all over the body, but the tumors in the liver got the highest dose from an oral delivery. This allowed the scientists to develop a diagnostic test for liver tumors. In tests in mice with colon cancer that has spread to

the liver, the probiotic bacteria colonized nearly 90 percent of the metastatic tumors.

Conclusion: Liver is often the first site to which cancer spreads when metastasized. Yet it is one of the hardest organs to detect tumors using CT and MRI scans. This means that tumors are detected when they are larger and late to treat. The ability to detect tumors as small as one cubic millimeter makes this the most sensitive diagnostic tools to date.

Keywords: Probiotic, detect, liver cancer

8.5

BETTER OUTCOME OF SPLENECTOMY IN YOUNGER PATIENTS SUFFERING FROM CHRONIC IMMUNE THROMBOCYTOPENIA (ITP)

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Abstract Background: Adult chronic immune thrombocytopenic purpura (ITP) is an autoimmune disorder manifested by thrombocytopenia from the effects of antiplatelet autoantibodies and T lymphocyte-mediated platelet cytotoxicity. Initially, most ITP patients are treated with medical therapy; if no lasting response occurs, they undergo splenectomy. The aim of this study was to explore the results of splenectomy in chronic immune thrombocytopenia and to analyze factors which can predict better response of splenectomy in patients undergoing surgery.

Material and Methods: The retrospective charts review comprised of adult patients over 16 years of age who underwent splenectomy for Idiopathic Thrombocytopenic Purpura at Aga Khan University Hospital, Karachi, from October 2005 to September 2015. Data was reviewed in January 2016 by a surgical resident.

Files of all 51 patients who underwent splenectomy for ITP during this period were retrieved. Preoperative status was assessed in terms of number of platelet count, time since diagnosis of ITP and medical options used till undergoing splenectomy for ITP. The outcome was the response to splenectomy as per the new definition of response set by the American Society of Haematology 2011 evidence based practice guidelines for Idiopathic Thrombocytopenic Purpura. Assessment of response in terms of platelet count was done up till 12 months post splenectomy. Secondly, factors were analyzed which can predict better response prior to surgery alongside possible complications associated with surgical procedure. SPSS 19 was applied for statistical analysis.

Results: A total of 51 patients was found eligible. Of them, 14 (27.5%) were males and 37 (72.5%) were females with an overall median age at the time of splenectomy of 32 years (range: 16-65 years). Out of 51 cases, 22 (43.1%) patients underwent open splenectomy, 22 (43.1%) laparoscopic and 7 (13. %) had started laparoscopically, but converted to open splenectomy. Complete response was achieved in 43 (84.3%) patients, whereas 2 (4%) had response and 6 (11.7%) had no response. Relapse rate after showing initial response at 1 year of follow up was 8.8%.

Conclusion: Splenectomy is a safe and effective option in refractory cases of immune thrombocytopenia. Young age at time of surgery is associated with good outcome, while resistant to prior type or numbers of medical therapy has nothing to do with the outcome. In our population Response to splenectomy in adult Idiopathic Thrombocytopenic Purpura patients was comparable to reported rates in literature with relatively lower morbidity and mortality.

Keywords: Idiopathic Thrombocytopenic Purpura, Splenectomy, Platelet

8.6

ANALYSIS OF 1P/19Q DELETION IN FFPE SPECIMENS OF OILGODENDROGLIOMA BY FISH PROBES

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Objective: Analysis of 1p/19q deletion in FFPE specimens of oligodendroglioma by FISH probes

Introduction: 1p/19q deletion is seen in approximately two-third oligodendroglioma patients. Co-deletion of 1p/19q has proven to be a powerful predictor of response to chemotherapy and overall survival.

Method: FISH probes targeting 1p and 19q regions were used to determine deletion status of 93 oligodendrogliomas patients having grades II or III disease. FISH was performed on 4 µm thick tissue sections using Abbott Molecular (USA) dual color probe sets [LSI 1p36/LSI 1q25 and LSI 19p13/LSI 19q13] according to the manufacturer's instructions. A total of 60 nuclei were examined. The ratio was calculated for 1p and 19q deletion by dividing 1p or 19q signals by their respective control signals; <0.8 was considered as abnormal for both targets.

Result: This study investigated 93 patients of anaplastic oligodendroglioma enrolled between 2013 and 2016 at the Aga Khan University Hospital. Thirty-five patients showed co-deletion of 1p/19q in which 17 cases belonged to grade II and sixteen patients had grade III tumor, two cases were between grade II and III. Out of

93 patients only two showed isolated 1p deletion, whereas 19q deletion was positive in 9 patients having either graded II or III tumor.

Conclusion: The assay confirmed 1p/19q deletions in glioma patients. 1p/19q deletion assay was 100 % sensitive and 100% specific

Keywords: Oligodendroglioma, 1p/19 deletion, FISH

8.7

CRIZOTINIB: AN EFFECTIVE AND WELL TOLERATED TREATMENT OPTION FOR ELDERLY PATIENTS WITH A POOR PERFORMANCE STATUS WHO HAVE ROS1 TRANSLOCATION POSITIVE NON-SMALL CELL LUNG CANCER: A CASE REPORT

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Introduction: Patients with advanced NSCLC have a worse prognosis and are treated with palliative intent. Elderly patients with poor performance status do not tolerate systemic chemotherapy well. The development of targeted therapies has provided an alternative for subgroup of patients with specific genetic mutations. These agents are better tolerated and improve progression free survival.

Case Report: 87-year-old female with ECOG performance status of 2 presented with progressive dyspnea and cough. A CXR showed a large right sided pleural effusion. A CT scan demonstrated a 4.5 cm lung mass in the right lung. She underwent a thoracentesis and the cytology was consistent with adenocarcinoma. A pleurx drain was placed for symptom control. A tissue sample was sent for molecular testing for

Epidermal Growth Factor Receptor (EGFR) mutation, ALK fusion oncogene and ROS-1 translocation. Her ROS-1 translocation came back positive. She was started on crizotinib 250mg BID which she tolerated well with minor side effects. The drainage from her chest tube progressively decreased and chest tube was discontinued. A CT scan done after 3 months of therapy showed decrease in size of the lung mass. It has been 18 months since she has been on crizotinib and her follow up scans continue to show good response to crizotinib.

Conclusion: Advanced age and poor performance status limit options for systemic chemotherapy. The evolution of targeted therapies has improved the outlook for these patients with specific driver mutations due to increased progression free survival while providing good quality of life.

Keywords: Non-small cell lung cancer, Crizotinib, ROS1 Translocation

8.9

QUALITY OF LIFE OF A PATIENT WITH CARCINOMA: A PALLIATIVE CARE PHILOSOPHY

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Introduction/Purpose/Background: Palliative care have a significant impact on patient's lives suffering from terminal illnesses. WHO clarifies the goals of palliative care as the achievement of the best possible quality of life for the patient and their families (as cited in Kim, Fall, & Wang, 2005), which includes physical, psychological, social, sexual, spiritual and peaceful end of life care. Those who end up into terminal illnesses due to carcinomas are in a

strong need of such spiritual support. This paper talks about the significance of palliative care philosophy for the patients with carcinomas. *Method:* Syntheses of 10 studies from the year of 2009 to 2015 were systemically reviewed. *Results/Findings:* Terminal illnesses cause distressing symptoms that increase suffering and decrease patient's quality of life. Palliative care is not just for the imminently dying, nor should be hospice. Palliative concepts are disseminated from diagnosis of the disease till the bereavement of family. It's a multidimensional care which addresses all forms of suffering. Initially, primary focus is to intervene and manage patient symptomatically which will optimize patient's functional status. One of the key element of palliative care is the focusing on a specific management goal: promoting quality of life for patients and families. As disease progresses, all domains of health must get addressed simultaneously. Anticancer treatments such as chemotherapy and radiation that improve patient's quality of life without aiming of enhancing its life expectancy also possess a palliative intent. Consequently such managements also possess number of adverse effects. Health care professionals should be vigilant in observing such adverse effects and intervene on the first place to prevent further deterioration.

Recommendation/Conclusion: As a health care member we need to consider the goal of these palliative care interventions as to relief symptom, improve psychosocial wellbeing, and enhance quality of life. In a nutshell, palliative care is comprehensive care for the patient with terminal illnesses and their families, primarily focusing on promoting quality of life.

Keywords: Palliative Care, Quality of life, Oncology

8.10

HYPNOSIS: A TREATMENT MODALITY IN PALLIATIVE CARE

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Introduction: Hypnotherapy is one of the most common and effective form of complementary therapy recognized for its therapeutic application in oncology patients. It is a psychotherapeutic technique which changes perception, sensation, affect, mood, cognition or behavior.

Objective: The aim of this case study is to highlight hypnosis as an effective treatment modality in palliative care to uplift patient's social, psychological and spiritual well-being and to discuss barriers in application of hypnotherapy for symptomatic management.

Methods: A case study was observed for the outcomes of hypnosis on oncology patient. Comprehensive literature review of 10 research articles from 2013 to 2016 was conducted by using Science Direct, SAGE, and American Psychiatric nurses Association.

Results: Hypnosis enhances patient's coping skills, manages stress and anxiety, decrease pain, nausea etc. It can be effectively used to enhance quality of life, to manage the side effects of pharmacological therapy, major psychological problems and difficulty of compliance with medical treatment in oncology patient. Maslow's Hierarchy of Need in Palliative Care also explains that by focusing on basic deficiency needs of patients, they can actualize their important end of life dreams. It helps patient to be more prepared to face their final days.

Conclusion: In order to reduce common manifestation of cancer, it is recommended to health care team to incorporate hypnotherapy into palliative care plan. It has relatively low risks in supportive cancer care to treat common

manifestation like pain. Adding hypnosis into the standard care of cancer will help patients, family and caregivers by decreasing distress and pain.

Keywords: Pain, Hypnosis, Palliative care

8.11

TO OBSERVE RISK FACTORS AND PATTERNS OF HOSPITAL ACQUIRED VENOUS THROMBOEMBOLISM IN A TERTIARY CARE FACILITY

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Background: Hospital acquired venous thromboembolism (VTE) refers to VTE occurring as a consequence of hospitalization within 3 months. The risk of VTE associated with hospitalization depends not only on the reason for admission but also on co-existing patient related factors. A systematic review reported incidence of VTE of about 2.6 to 12.8% in surgical patients in Pakistan.

Objective: To determine risk factors and patterns of hospital acquired VTE in a tertiary care facility.

Material and Methods: The study was conducted at Aga Khan University Hospital, Pakistan from October-December 2015. Adult patients (more than 18 years old) of both genders who developed VTE during hospital stay or had a history of hospitalization within 3 months were included. Patients' data was retrieved through ICD coding version 9.0. Data for patient characteristics, risk factors and type of thrombosis were obtained.

Result: A total of 80 patients were included with the diagnosis of VTE. Male to female ratio was

1:1 with a mean age of 47 years. Out of 80, 6 (7.5%) patients developed VTE during hospital stay. Risk factor identified was mainly immobilization (50%) in this group. Three out of 6 patients develop post-surgical VTE. Mainly these patients have lower leg DVT (50%) and received low molecular weight heparin (66%) during hospital stay.

Conclusion: The incidence of hospital acquired venous thromboembolism is high in surgical patients because of immobilization after surgery in our hospital.

Keywords: VTE, Thrombosis, Risk factors

8.12

PREVALENCE AND TREND OF INFECTIOUS DISEASE MARKERS IN BLOOD DONORS AT A HOSPITAL BLOOD BANK

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Background: Human blood is a life-saving therapeutic option in many conditions. However, transfused blood may be contaminated with different human pathogens especially transfusion-transmissible infections such as HIV, hepatitis B, hepatitis C and syphilis. TTIs are significant problem in Pakistan, but there exact burden is still unknown due to poor use of screening tests or their high cost, limited access to a health facility and nonexistence of surveillance system. This study will contribute towards national data and help us in identifying the trend of infections in our blood donors. Furthermore, the results of study will help us in developing strategies to minimize the risk of transmission of the most prevalent infection.

Material and Methods: This was a retrospective cross sectional descriptive study covering a period from 1st January 2005 to 31st December 2014. The study was conducted at the Blood Bank of The Aga Khan University Hospital. Total of 246037 blood donors of both sexes were included in the study. All blood donors were screened for hepatitis B (ECLIA), hepatitis C (ECLIA), HIV (I & II through ECLIA), Malaria (Immunochromatography) and Syphilis (VDRL). Data for positive screening result was collected from blood bank information system. Statistical package for social sciences 21 was used for data entry and analysis. Prevalence of HbsAg, Anti HCV, HIV, syphilis and malaria was calculated in blood donors

Results: Years 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 Total No: of Donors
21412 22916 24720 23637 24958 25108 24815
25604 27332 25535 246037 Anti HCV 1.2%
1.7% 1.7% 1.8% 2.1% 2.0% 1.8%
1.5% 1.4% 2.0% 1.7% HbsAg 0.9%
1.3% 1.5% 1.3% 1.3% 1.2% 1.4%
1.2% 1.1% 1.4% 1.3% Syphilis 0.3%
0.38% 0.3% 0.4% 0.4% 0.5% 0.4%
0.5% 0.5% 0.4% 0.4% HIV 0.03%
0.06% 0.1% 0.02% 0.07% 0.03% 0.08%
0.03% 0.02% 0.02% 0.05% Malaria None
0.01% 0.01% 0.06% 0.05% 0.05% 0.05%
0.06% 0.02% 0.04% 0.04% The mean prevalence for Anti HCV, HbsAg, anti-HIV, syphilis and malaria was 1.7% , 1.3%, 0.05%, 0.4% and 0.04% respectively.

Conclusion: Anti-HCV is the most prevalent infectious disease marker (1.7%) detected in our blood donors followed by Hepatitis B (1.3%). The trend is static over the years showing that both Hepatitis C and B continue to pose a risk for transfusion in our population

Keywords: TTIs, blood donors, prevalence

8.13 CEREBRAL VENOUS SINUS THROMBOSIS IN A PATIENT WITH UNDIAGNOSED INHERITED FACTOR VII DEFICIENCY: A CASE REPORT

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Introduction: Inherited factor VII (FVII) deficiency is one of the rare inherited bleeding disorders, with an approximate prevalence of about 1 in 500,000 in its severe form to one in 350 in the heterozygous state. In Pakistan inherited FVII deficiency is one of the commonest rare bleeding disorders in part due to traditional consanguineous marriages. Factor VII deficiency presents with a wide clinical heterogeneity characterized by poor correlation of factor level with bleeding. Clinical features are variable ranging from mild or even asymptomatic forms to lethal cerebral hemorrhages. Paradoxically, besides bleeding FVII deficiency is also associated with thrombosis, both venous and arterial thrombosis has been reported in approximately 3 to 4 percent of patients with FVII deficiency. Here we report a case of Factor VII deficiency and cerebral venous thrombosis and a review of management of such cases.

Case Report: In September 2015, a 40 years old female (gravidity 0, parity 0) with no known co-morbid presented to emergency with complaints of jerky movements in the left arm and headache for three days. Her past history was unremarkable apart from irregular menstrual cycles without menorrhagia for which she was taking tablet Norethisterone 5 mg thrice daily for 21 days every month for past three months. There was no family or personal history of abnormal bleeding. Examination revealed decreased power of left upper limb only. Contrast enhanced computerized tomography (CT) scan of brain was done as a part of initial workup of abnormal limb movement and headache showed deep cerebral venous sinus

thrombosis involving all sinuses more marked on the right side extending into the right internal jugular vein without intracranial haemorrhage or infarct (figure 1).

Other routine laboratory workup showed haemoglobin 13 gm/dl, white blood cell count $14 \times 10^9/L$, platelet $337 \times 10^9/L$ and no abnormality detected on peripheral smear. Coagulation studies revealed prothrombin time (PT) 27 seconds (sec) (control 9-14sec), INR 2.6 (control ratio ≤ 1) and activated partial thromboplastin time 25 sec (control 25-35sec). Liver function and renal profile was normal. ANA and anti-DNA test was negative. Anticardiolipin IgM was 2.26 MPL unit /ml (normal range ≤ 7 MPL unit /ml). In view of incidental finding of prolong PT in the absence of bleeding symptoms, PT mixing study was ordered that showed correction of PT with normal plasma (immediate and after incubation at 37C for 2 hours) and aged serum. Subsequently FVII level was checked and found to be 14%. The findings were suggestive of FVII deficiency.

For cerebral venous thrombosis the patient was started on subcutaneous injections of low molecular weight heparin (LMWH) Enoxaparin 60mg twice daily to which she responded well with improvement of her presenting symptoms. Anticoagulation was monitored clinically and with anti-Xa assay. No FVII levels were repeated during follow-ups as there were no bleeding symptoms at all. During hospital stay and subsequent follow-ups in anticoagulation clinic she remained well with normalization of left arm movement. Until the follow-up in December 2015 no bleeding was reported and anti-Xa remained in therapeutic range. The patient gave her informed consent prior to her inclusion in the study.

Discussion: A thrombotic manifestation in a patient congenitally predisposed to bleeding always represents an exceptional event. To date, occurrence of thromboembolic events in FVII-deficient patients have been reported in several individual cases and few case series and in most of these cases thrombosis was related to replacement therapies, surgical interventions and delivery or heritable thrombophilia factors. In this case an oral contraceptive pill was

considered to be an associated thrombotic risk factor.

The type of underlying mutation of FVII like Arg294Val and Arg304Gln are also reported to be associated with thrombotic event. In our case amino acid sequencing and nucleic acid sequencing could not be performed due to non-availability of these tests at our setup. International consensus guidelines for treatment modalities of the thromboembolic events in rare bleeding disorders are lacking. In addition sparse information is found in literature related to the clinical management of thrombosis in inherited FVII deficiency. Use of LMWH by Klovaite J. et al. for a FVII deficient patient with vena porta thrombosis was also associated with bleeding. On the other hand LMWH was found to be safe anticoagulation alternative in our patient. However, optimal doses and safety remain to be defined. In the same way the safety profile of new direct oral anticoagulants needs to be investigated for treating thrombosis in rare bleeding disorders.

To conclude, we have reported the concomitant occurrence of CVST and a hemorrhagic disorder. This case supports previous observations and demonstrates that a risk of thrombosis should be considered in the presence of inherited FVII deficiency. However the choice of anticoagulant treatment and prophylaxis needs to be defined.

Keywords: inherited factor VII deficiency, thrombosis, cerebral venous sinus

8.14 FREQUENCY OF ADULT TUMORS AT A TERTIARY CARE HOSPITAL AS RECORDED BY AKUH-TUMOR REGISTRY

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Introduction: Incidence of cancer is on a rise due to better diagnostic modalities and longer life span. Cancer registries contribute towards

patient care by providing information on cancer subjects, the treatment they receive and their outcome. This data is vital in identifying areas of need and help direct resources. The purpose of this study was to identify the most common malignancies presenting at AKUH as captured by AKUH-Tumor Registry between 2009 till 2013.

Method: Data was retrieved using software CNExT to analyze cancer trends in adult patients (17 years and above) between 2009-2013.

Results: Total 17,911 cancer cases presented between 2009 till 2013. The top five malignancies were Breast 2818 (15.73%), Head and Neck 2123 (11.85%), Hematologic 1750 (9.77%), Genitourinary 1676 (9.36 %) and Gynaecological 1274 (7.11 %). The trend from 2009-2013 of each of these five cancers is as follows: Breast 18.99%, 14.65%, 14.88%, 14.28% and 15.45% respectively; Head and Neck 10.02%, 11.06%, 12.27% 12.95% and 11.66%; Hematologic 11.81%, 11.81%, 9.21%, and 8.98% and 7.53%; Genitourinary 9.56%, 9.94%, 8.56%, 9.97% and 9.34% and Gynaecological 7.59%, 7.27%, 6.29%, 7.27% and 7.21% . As observed, breast cancer is the most frequent in all the five years followed by Head and Neck cancers. There is a slight trend towards increasing frequency of Head and Neck cases over the years. This may be related to increase use of Gutka. Genitourinary and gynaecological malignancies did not show much difference in their trends.

Conclusion: This study helps identify the leading cancers and their burden on AKUH.

Keywords: Adult tumors, CNExT, AKUH-Tumor Registry

THALASSEMIA: INFLUENCING ADOLESCENT'S PSYCHOLOGICAL HEALTH

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Objectives: To manage the psychological health of an adolescent with major thalassemia.

Methods: In a tertiary-care hospital of Pakistan, I encountered a major thalassemia child. Rigorous management of disease process significantly altered his psychological well-being resulting in delayed growth and milestones. He was 17-years old, but looked like a 10-year old child, still bedwetting, studying in 4th grade which was way behind the mental age of 17-year old. Besides, frequent hospitalization, multiple blood transfusions, and painful medications served as barrier towards social inclusion. Moreover, progressive illness and medication administration during school timings caused stigmatization and discrimination in his peer group resulting in low self-esteem. Therefore, I approached and communicated to help him ventilate his distressing thoughts and feelings. I focused more on his strengths and successes to boost his self-confidence level and ultimately improving his self-esteem. To overcome the issue of frequent absenteeism from school, I explained to the family that academic studies must be continued at home so that he could easily cope up with his other classmates. To enhance compliance towards drug therapy, I taught about the importance of treatment in preventing the complications of thalassemia.

Results: Communicating therapeutically, boosting self-confidence, providing a sense of satisfaction, and recommending mind-stimulation techniques to overcome his

academic and social problems could remarkably help manage the burden of disease process.

Conclusion: This case-study clearly depicts that thalassemia can significantly affect an adolescent's psychological well-being. Pharmacological management would work in decreasing physical pain, but appropriate interventions should be done to decrease their psychological burden.

Keywords: Thalassemia, psychological, management

8.16 CONVENTIONAL CYTOGENETIC ANALYSIS OF ACUTE LYMPHOBLASTIC LEUKEMIA IN PAKISTANI PATIENTS

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Abstract Background: Cytogenetic findings at diagnosis constitute important, independent prognostic factors in both childhood and adult Acute Lymphoblastic Leukemia (ALL). Accordingly, cytogenetic analyses are considered essential for predicting outcome of many ALL patients. Presence of specific chromosomal aberrations is used to stratify ALL patients for specific therapeutic modalities.
Objective: To determine frequency of common cytogenetic abnormalities reported in ALL patients.
Methods: In this study, we evaluated karyotype results of bone marrow specimens obtained from 264 Pakistani ALL patients using conventional cytogenetic G-banding method.
Results: A total of 264 known cases of ALL were selected from January 2015 to April 2016. The male to female ratio was 1.5:1. Mean

Age was 17 years and it ranged between 1.0 and 75 years). Karyotypes were interpreted using the International System for Human Cytogenetic Nomenclature (ISCN) criteria. Out of 264 specimens 137 showed abnormal karyotype. Frequent abnormal karyotypes included hyperdiploidy (23%), Philadelphia t(9;22) 6.8% and t(1;19) 5.68%.

Conclusion: The cytogenetic abnormalities such as hyperdiploidy and t(9;22) were commonly identified in the patients, which are known to have prognostic significance and contribute to ALL's treatment outcome.

Keywords: Acute lymphoblastic leukemia, Cytogenetic analysis, Chromosomal abnormalities

8.17 OUTCOME OF RENAL TUMORS AMONG CHILDREN AT SINGLE CENTER IN A DEVELOPING COUNTRY

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Aim: To determine the outcome of renal tumors among children in our center and compare the results of treatment on the basis of management proposed by the National Wilms tumor study board (NWST) and the Societe internationale D'oncologie pediatrique (SIOP)
Patients and methods: This study includes 60 children who presented to the Aga Khan University Hospital (AKUH) with renal tumors between 1988 and 2015 (aged 0-15 years). The children were divided into those that were diagnosed with Wilms tumor and those that had other renal tumors. Wilms tumor patients were further divided according to the treatment strategies they received i.e. NWST and SIOP and

a clinical evaluation was preformed of all patients.

Results: Tumors mostly presented on the right side (65%) and often presented as an asymptomatic abdominal mass in half of the patient population. The diagnostic work up mainly involved CT imaging alone or in combination with an ultrasound abdomen. 39% of the children with Wilms tumor in the SIOP group presented with stage 3 diseases whereas in the NWST group the majority presented with stage 1 disease. Patients with other renal cancers mostly presented with stage 3 disease. In the SIOP group after the treatment 4(14%) patients had disease reoccurrence and 2 patients died due to disease and chemotherapy complications. In the NWST group, 2(9.5%) patients had disease reoccurrence and 1 patient expired. Overall survival of Wilms patients was >80%. In the other tumors group, 1 patient of Rhabdoid tumor expired 2 patients with renal cell carcinoma developed disease complications.

Conclusions: In contrast to nonWilms tumors, Wilms tumors are curable in the majority of the patients even with limited resource as in our country. The NWTS and SIOP treatment approaches are almost equally effective at our center however adherence to a single treatment is mandatory for effective treatments

Keywords: Renal tumor, National Wilms tumor study board(NWST), Societe international D'oncologie pediatrique (SIOP)

8.18

ANALYSIS FOR CYTOMEGALOVIRUS DNA IN BLOOD SPECIMENS OF CANCER PATIENTS ADMITTED TO THE AGA KHAN UNIVERSITY HOSPITAL

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Objective: To study presence of cytomegalovirus DNA in blood samples of neoplastic patients, and to compare CMV DNA positivity in non-neoplastic patients. Introduction Human cytomegalovirus (HCMV) is a ubiquitous herpes virus that leads to a life-long persistence. The frequency of infection ranges from 50% to 100% in the general adult population. HCMV causes severe and often fatal disease in immuno-compromised individuals including recipients of organ transplants, malignancies and AIDS patients.

Methods: CMV DNA in Blood samples was screened by real time PCR using an in-house developed method. Briefly, DNA from blood samples was extracted and amplified in a PCR mix containing primers and probes specific to CMV.

Results: A total of 58 patients admitted in the Aga Khan University Hospital were analyzed for CMV PCR. Out of 58 patients 41 were male and 17 female. Male to female ratio was 2.4. The mean age of the patients was 36 years, which ranged between 6 and 82 years. On the basis of clinical findings patients were divided into neoplastic and non-neoplastic groups. The neoplastic disorders included CLL, AML, ALL and osteogenic sarcoma. Out of 28 non neoplastic patients only 1 patient positive for CMV infection, whereas 6 out 30 neoplastic individuals were CMV DNA positive.

Conclusion: We found higher frequency of CMV positivity in patients with neoplastic diseases, which reflects chemotherapy induced immunosuppression

Keywords: CMV, PCR, DNA

8.19

DISTRIBUTION OF EGFR MUTATIONS METASTATIC NSCLC PATIENTS

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Objective: To identify EGFR mutations, linked to favorable outcome for tyrosine kinase therapy, in metastatic NSCLC patients.

Introduction Tumor cells of Non-small cell lung cancer patients harboring activating mutations in EGFR gene tend to do significantly better when treated with oral tyrosine kinase inhibitors, as compared to those with wild type EGFR.

Methods: EGFR mutations in tumor samples were screened by multiplex real time PCR (Roche Diagnostics, USA) according to the manufacturer's instructions. DNA from FFPE tissue, was amplified with primers and probes specific to 43 different EGFR mutations.

Results: Out of 114 patients, 75 were male and 39 females; male to female ratio was 1.9. Mean age of the patients was 60 years, which ranged between 5.5 and 85 years. EGFR mutation Del 19 was detected in 18 patients, whereas L858R mutation was found in 9 patients. In 2 patients compound mutation [S768I and G719X] was observed.. EGFR mutations were more common in male patients compared to females, In addition, none of the 43 mutations was detected in 84 tumors samples, indicating an overall

27% mutation positivity in Pakistani NSCLC patients.

Conclusion: According to our study, frequency of mutation positive samples (27%) was smaller compared to other South Asian countries. However, positivity in female patients was higher compared to male patients. A study with larger sample size may better portray general mutation distribution.

Keywords: NSCLC, EGFR, TKI

Health Education

9.1

A DETAILED ACCOUNT OF HEAT STROKE

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Introduction: Heat stroke is defined as hyperthermia or exceptionally high fever which occurs due to soaring body temperatures above 41.1°C (106°F) associated with pathophysiological changes that result in neurologic, multi-organ system dysfunction and death. Characterized by CNS dysfunction, it is also responsible for a number of organs malfunctioning of the body and is basically of two types. Various pathophysiological changes occur in the body which consequently leads to a heat stroke.

Methods: 19 articles were reviewed and relevant study was extracted out from Google Scholar (Search engine). Journal of Applied Physiology and The New England Journal of Medicine were the main sites. The symptoms were observed among the patients affected by heats stroke in Government Hospitals.

Result: The Iranian method has shown marked reduction in mortality among all other cooling techniques. The biochemical assay showed that TNF- α and IL-levels along with lipopolysaccharide LPS content due to gut leakage were elevated in patients with heat stroke
Conclusion: Heat stroke is a life threatening illness characterized by a rapidly increasing core body temperature (>40°C) which can progress to multiple organ dysfunction/ injury syndrome and subsequently death. Up to 30% of survivors may sustain permanent neurological damage with no recovery. The high mortality and neurological morbidity in heat stroke despite cooling and supportive treatment are largely due to the fact that the mechanisms

of multiple organs disorder syndrome MODS are not well understood and no specific treatment is available. This article discusses heat stroke and its management in detail.

Keywords: Heat Stroke, Hyperthermia, Multi Organ Disorder

9.2

WHAT WE FORGET IN NURSING: MISSING OF CARE

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Introduction: The impact of nursing care has been discussed since many years and we have improved in providing the quality care to our patients, families and communities. But the phenomenon which is discussed very less in routine discussion is the missing part in nursing care. This phenomena was first describe by Kalisch (2006) in her qualitative study, and since many researcher put forward and refined the concept more clearly to understand, but still this theme needs more discussion and understanding.

Aims: The aim of this paper is to examine the impacts of missed care with identified reasoning. In this paper I have describe that missing care or health care omission are very common in hospital setting that results in morbidity and mortality of patients, Turing patient q 2 hourly, assessing patient in ambulation, medication safety etc are few of basic and common examples of omitted care.

Methodology: Hence there is no separate study has been conducted but the extensive literature review has been done to understand the concept more deeply. With the help of Meta analysis of various literatures and studies we have tried to covered vast knowledge on said subject.

Results: The result indicates that due to missed care an institute may experience increased number of medication errors, patients' falls and dissatisfaction of their clients. Moreover I have

also found that mechanism to competing clients demand and providing skill based adequate staffing is one of the solutions to cater the missed care in nursing.

Conclusion: In conclusion, this paper helps to give a deeper insight to the concept of 'missed care' that is significant risk to patient safety if it's not improved.

Keywords: missed care, nursing, patients safety

9.3

KNOWLEDGE AND MISCONCEPTIONS OF ASTHMA IN LOCAL POPULATION: A CROSS SECTIONAL SURVEY IN 4 TEACHING HOSPITALS OF KARACHI

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Background: Asthma is a common chronic airway disease with worldwide prevalence of 21% in adults and 20% in children. About 80% of asthma related deaths occur in middle and low income countries. General public knowledge of asthma and their perception about the disease and its treatment remain unknown. A survey was conducted to determine knowledge and misconceptions of asthma among the local population of Karachi covering all socioeconomic classes.

Methods: Adults and adolescents in outpatient clinics in the 4 tertiary hospitals of the city were surveyed using a standardized questionnaire from February 2016 to April 2016. The 4 hospitals included CHK, JPMC, AKU and OICD. The questionnaire comprised of 26 questions answered with a true, false or not sure.

Results: Data from 400 participants (mean age 40.3 years, 53.5% males) was collected. About 19% of our participants thought that asthma is a psychological disorder while 45% considered it as an infectious disease. Nearly 57% believed that inhaled medications have significant side effects and 25% believed that syrups and tablets work as effectively as inhalers. In our study 66% considered steam inhalation to be an effective treatment for asthma. Misconceptions about diet and asthma were common. Over 42% considered milk as a common trigger for asthma, while 67% thought that patients with asthma should avoid rice in their diet. *Conclusion:* We conclude that in our population the knowledge is poor and misconceptions are common about asthma. Public education about the disease and its treatment is important.

Keywords: Asthma, Karachi, Misconceptions

9.4

HEAT STROKE: A MAJOR PUBLIC HEALTH CONCERN

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Introduction: Heat stroke is a condition marked by fever, unconsciousness, very high blood pressure, red hot and dry skin (without sweat), and rapid pulse. It is the result of failure of the body's temperature-regulating mechanism when exposed to excessively high temperatures > 105 degrees Fahrenheit. Heat Stroke is most serious form of heat injury and is considered as a medical emergency. Objective To identify the effects of hot weather on human health and take measures to prevent heat-related deaths.

Method: A comprehensive literature search was conducted through electronic medium to explore

relevant literature. Various databases i.e., Google search engines, Science Direct, JPMA and SAGA, Springer Link were used. In addition manual search was also done by accessing articles from DAWN News and Express Tribune, January 2011 till May 2016. Results The global mortality rate of heat illness until 2009 was 7,502 cases. Surveys conducted by Heatstroke Surveillance Committee - Japanese Association for Acute Medicine revealed that among all 2010 had highest number of heat illness patients transported to emergency medical services including most fatalities. According to medical officials Pakistan, 36,103 people have been affected, nearly 80,000 have been treated and approximately 1271 people have been declared dead. With the influence of global warming, it is predicted that incidence of heatstroke cases/fatalities will become more prevalent. According to WHO Fact Sheet N 226, between 2030 and 2050, climate change is expected to cause approximately 250,000 additional deaths per year, from malnutrition, malaria, diarrhea and heat stress.

Conclusion: Public health systems should be prepared for extreme events of heat stroke. Interventions like heat wave response plans, effective risk communication and prevention strategies and health alert warning systems can minimize morbidity and mortality. The emergency responses teams, housing authority and law enforcement should identify and serve vulnerable populations. More comprehensive measures should be adopted for children 4 years of age and elderly to prevent heat-related deaths.

Keywords: Heat stroke, public health, fever

9.5 LITERATURE SITUATION ON THE SUBJECT OF “MEDICAL EDUCATION”: A SURVEY OF SOME WELL-KNOWN HEALTH SCIENCES INSTITUTES’ LIBRARIES OF KARACHI CITY

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Introduction: Since, it has been mandatory by the Pakistan Medical & Dental Council (PMDC) that all the medical institutes must have the department of “Medical Education” in their institutes. But the question is that; is there sufficient literature available in the libraries of these institutes to run their programs according to the needs. Keeping in view the question; a survey based study is being conducted to know the existing literature situation in some renowned medical institutes of the Karachi city.

Objectives of the study: To know about the existing literature situation on the subject of “Medical Education” in the libraries of some well-known medical institutes.

What type of literature is being acquired to support the ME program in different institutes? To analyze the quantity of literature, acquiring on ME as compare to the other health sciences literature.

Scope: The survey study consists of only top 5-7 Medical Institutes from public and private sector of Karachi City, ranked by Higher Education Commission of Pakistan.

The quantitative information about the following types of literature is the part of study:

Printed books, journals and other literature available in the libraries

Online books and journals subscribed by the libraries

Online books and journals provided by the HEC digital library

Quantity of the Literature acquired on ME during the last 5 years?

Methodology: A survey is being conducted through questionnaire to know the literature situation in the libraries of some well-known medical institutions Interviews with some librarians, teachers and the students of ME. Data will be analyze on the following basis:
Format wise
Year wise (to know how much literature is contemporary)
A comparison of ME literature with other Health Science literature available in the libraries.
Results/Conclusion: According to the professional medical educationist the literature situation of Medical Education in Pakistan is not according to the requirement. Some big medical institutes in Karachi are still unable in providing the adequate literature. HEC is providing a large number of literature on Medical subjects including ME. Dow University (Ojha Campus) having largest ME books collection <300 in print format. Only 3 libraries (AKU, JPMC, ZU) are subscribing ME journals (<5) in print medium. Online ME literature situation is satisfactory. AKU is acquiring appropriate ME literature in online format (e-books <500 & e-journals 250) There is no separate budget allocation for ME literature in any institute. All selected libraries hold ME literature in English Language only. More Research and Development and Trainings are needed.

Keywords: Medical Education, Medical Education Literature, Health Sciences Libraries

9.6

ASSESSMENT OF DELIVERY SUCCESS OF VOICE MESSAGES TO SUPPORT A LIFESTYLE INTERVENTION FOR DIABETES PREVENTION AMONG WOMEN WITH GDM

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Introduction: Mobile phone usage is widespread across different geographic regions and socio-economic backgrounds with 139.2 million active mobile phone users in a total population of 180 million people. Given the reach of mobile networks, mobile health solutions have gained popularity in primary prevention of type II diabetes through supporting lifestyle changes.
Methods: The aim of this study is to determine feasibility of culturally competent voice messaging in a lifestyle intervention to prevent Type II diabetes All patients in the intervention arm were provided with a basic phone and SIM cards. All connections were part of a Private Automatic Branch Exchange system (PABX) that restricted outgoing calls except calls to main master number or helpline in case of any queries. Considering the literacy levels among our two contrasting patient populations from AKU and JPMC, we decided that voice messaging was the most suitable option. Themes for messages were as follows; diet, physical activity, Type II diabetes and breast feeding. A total of 36 messages were recorded in Urdu and is being sent three times a week to the intervention group. The cycle is to be repeated till all 36 messages have been sent within one year.

Results and Conclusion: Our anticipated results can be used to assess delivery success, quality of user experience, acceptability, new information learned and reported behavior change to see if m-health can be used an

effective tool to educate and curtail the increasing prevalence of Type II diabetes in Pakistan..

Keywords: mhealth, Type II diabetes mellitus, prevention

9.7 ASSESSMENT OF AWARENESS OF TECHNOLOGIST REGARDING RADIATION SAFETY AND INFECTION PROTECTION

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Objective: To assess the understanding level of technologist about infection control, radiation safety and improve their awareness about radio graphic equipment's and accessories which are factors that can cause transmission of infection and diseases.

Rationale: Our main purpose of research is to educate our radio-logical staffs about mode of transmission of disease and infection that are caused by radio graphic equipment and accessories and safety protocol of hospital. Through our research we assess the practices of technologist and staff. we highlight knowledge regarding • spill kit • usage of detergent • alcohol swab • hand washing or hand hygiene • personal protective equipment • radiation protection shielding

Method: We conduct this study during May 2016 to June 2016 at department of clinical imaging in Aga Khan university hospital. A questionnaire was developed to assess the knowledge of radiographers in different modalities which focused on: • knowledge of radiographers about infections • Routine practice of technologist against infections. • Radio graphic accessories/equipment's that are means

of transmission of infections. We categories our data into 3 groups according to their working experiences as follow • Juniors (newly joined up to 2 years) • Seniors (2 to 5 years) • Most seniors (5 to on wards)

Result: It was found out that majority of the technologists lacked awareness with regard to radiation protection 68% rather than infection control 73%. It was observed that the level of awareness in senior technologists was lowest 67% (radiation protection) and 77% (infection control). The junior technologists had and average awareness level in both the categories 58% (radiation protection) and 62% (infection control) while the amateurs had highest level of awareness in both the categories that is 77 % (radiation protection) and 81% (infection control).

Conclusion: General awareness sessions and seminars regarding radiation safety and infection control protocols should be conducted in the department. Strict supervision is required to ensure that practices are made safe and in accordance with the policy and protocol.

Keywords: radiation, infection, radiographer

9.8 ASSESSING KNOWLEDGE AND ATTITUDE OF HEALTHCARE PROFESSIONAL BEFORE AND AFTER AN AWARENESS SYMPOSIUM

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Introduction: Health care providers (HCPs) are at risk of occupational exposure to HIV infection. Knowledge on occupational exposure

and post exposure prophylaxis (PEP) is important for prevention of HIV infection.

Objective: To assess baseline knowledge and attitude regarding HIV and PEP among HCPs and observe the change after an education symposium.

Methods: This quasi-experimental study was conducted among HCPs from Karachi, Pakistan. After assessing the baseline knowledge by means of pretest, HCPs were reassessed with posttest after an intervention in the form of an education symposium.

Results: Among 364 participating HCPs, 14.2% received training on PEP. The mean score of participants' knowledge before intervention was 6.44 ± 1.84 , which improved to 8.82 ± 2.17 with significant improvement (p value < 0.001) in the attitude regarding PEP after the intervention.

Conclusion: There is a need of education and training on HIV and PEP for HCPs to protect them from occupational exposures.

Keywords: Post exposure prophylaxis, Health care providers, knowledge

9.9

NATURE, SCOPE AND USE OF COST EFFECTIVENESS ANALYSIS OF HEALTHCARE PROGRAMMES IN PAKISTAN

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Objective: Economic evaluation (EE) of healthcare programs is an emerging topic in Pakistan. However the resource base to conduct or apprehended cost effectiveness in healthcare is very limited. This paper attempts to fill this gap by providing a basic text in the field of

economic evaluation with special reference to situation in Pakistan.

Methods: A four dimensional criteria (available, relevant, complete and accurate) was developed for reviewing the EE contents in the textbooks and reading material on public health, which are used by the undergraduate and postgraduate medical students. A thorough literature search was carried out to find literature on methods of EE and to build the context of EE in Pakistan.

Findings: We find cost effectiveness as core competency and skill of medical doctors in undergraduate medical curricula. We could not find contents EE in the textbooks widely recommended by medical institutions in Pakistan. We find twelve articles on EE or costs of healthcare in Pakistan. Economic evaluation entails two rules: both cost and effectiveness should be included in the analysis, and there must be a comparison of at least two drugs or medical intervention. Economic evaluation has three types cost benefit analysis (CBA), cost utility analysis (CUA) and cost effectiveness analysis (CEA). *Recommendation and conclusion:* Economic evaluation plays an important role in efficient, compassionate and evidence based medical practice. We recommend that EE content should be included in the medical and public health curriculum in Pakistan on priority basis.

Keywords: Economic evaluation, cost effectiveness analysis, health economics

9.11

AWARENESS OF HEAT STROKE AMONGST LOCAL POPULATION IN KARACHI

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Introduction: In May to August 2015 people of Karachi suffered from heat waves, mortality rate was quite high on this region. **OBJECTIVE:** To increase awareness and knowledge of our population to prevent from effects of heat stroke. *Methods:* Cross-sectional study, conducted in United Medical & Dental College, from 25th May to 25th June 2016. Ethically approved (Ref: 25-05-2016-UMDC). Participants were asked to fill up the performa designed to evaluate the awareness and knowledge of heat stroke. Data was analysed by frequency, mean \pm S.D on SPSS 16.

Results: Out of 323 participants, 62.5% were male and 37.5% were female. Mean age was 28 year. In summers 18.6 % people can't tolerate heat, have excessive sweating 31.6%. Palpitation 38.4%, headache 44.6%, dizziness 37.8%, body ache 30%, diarrhoea 22.9%, decrease vision 22%, vomiting 26%, heat rashes 23.2%, unconsciousness 14.9% and high grade fever 31% sometimes. 22% manage high grade fever by self-medication, 15.2% take medical advice. People take lassi, beverages, fruit juice, tea, mostly drink water 2 lit/day. 32.8% wear thin clothes. For prevention they prefer; shady areas 19.8%, cold sponging and shower 15.5%, first aid to down temperature 2.2%. On ghabrahat

heaviness 50.8% quit work at moment, 8.4% take medical advice, 8.7% use self-medication, 22.6% don't know. Mean BMI was 24.44 ± 19.85 . *Conclusion:* This study shows the lack of awareness and knowledge about heat stroke among local population hence preventive measures along with proper education is required to decrease the morbidity and mortality from heat stroke.

Keywords: Heat Stroke, Awareness, Local population

9.12

MIDWIVES PLAY ROLE IN PREVENTING OF INDUCED ABORTION: THROUGH APPLICATION OF

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A 36 years old lady accompanied with her spouse, reported to a midwife working in an antenatal clinic of private maternity hospital. She was gravida 5, Para 3+1, suspecting of two months of pregnancy. She in a very tormenting manner said "I do not want to continue with this pregnancy, so please help me to get rid of this" (personal communication). She expressed this desire as her previous obstetric history revealed past three pregnancies, associated with Gestational Diabetic Mellitus (GDM) and Hypertension (PIH) which resulted cesarean section delivery. At present she appears as known case of Diabetes Mellitus and Essential Hypertension with 6 weeks of pregnancy. Therefore she appealed to midwife for induce abortion. Induced abortion is defined as a voluntary attempt to terminate pregnancy without genuine reasons. Women in developing countries when require facilitation regarding induced abortion, consult midwives for

information and advice as they are the forefront care givers in reproductive healthcare settings. This necessitates the effective and appropriate role from midwife. The present case study explain role of midwife that she can adopt through application of Leavell and Clark's Level of Prevention Model to save women who choose induced abortion as method to control their pregnancies. As she thought this is a best option to maintain her health that has been affected by complications of previous pregnancies (i.e. PIH, and GDM) in past.

Keywords: Abortion, Midwife role, Health Education

9.13 MANAGEMENT AND OUTCOMES OF WELL-DIFFERENTIATED THYROID CANCER: A TERTIARY CARE EXPERIENCE

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Introduction: Thyroid cancer accounts for more than 90% of all endocrine gland malignancies and for around 4% of all head and neck malignancies, there is a rise in incidence of thyroid cancer as seen in the previous years with a 2-4 fold increase seen since 1973. The bulk of thyroid cancers is of well differentiated type that includes 1-Papillary 2-Follicular carcinoma. This study was conducted to review the management and outcomes of well-differentiated thyroid cancer at our institute.
Methods: A retrospective study was carried out at the Aga Khan University Hospital, Karachi. A total of 64 subjects who fulfilled our criteria were included in our study from the duration of 2004-2009. Files were reviewed and their complete management and outcomes were

analyzed from the time of presentation to their last follow-up. The outcomes such as recurrence was computed using Fisher's exact test and data analysis was done using SPSS-19.

Results: 64 patients were reviewed in whom the most common cancer was the papillary variant, with slowly progressive thyroid swelling being the commonest presentation, work-up was done according to the American thyroid association guidelines and more than 2/3rd of the patients underwent thyroidectomy and 90% with further radio-iodine ablation. Recurrence was seen in 5 patients who further underwent curative treatment including surgery and radio-iodine ablation.

Conclusion: Our results are comparable to other studies carried out nationally and internationally. There is a need of long term follow-up in our patients which is seen missing.

Keywords: Thyroid carcinoma, Well differentiated thyroid cancer, Thyroid

9.14 PRE-TREATMENT MALNOURISHMENT AND POST OPERATIVE CHANGE IN BMI: NUTRITIONAL DYNAMICS IN HEAD AND NECK CANCER PATIENTS

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Background: 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 under go; surgery and radiotherapy leads these patients in to a vicious cycle of weight loss. The objective of the study was to access the incidence of pre-operative malnourishment, post-operative loss of BMI and its co-relation with site, size, stage and

mode of nutrition along with Critical Weight Loss in Head and Neck Cancer patients.

Methods: A retrospective cohort study 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 first clinic visit then post-operatively at 1 week, 1 month and at 6 months interval and BMI was then calculated to Assess Critical Weight Loss which was the main outcome of study.

Results: 62 patients overall were analyzed for the study out of which 82% were males and 18% were females. At the time of admission (15)24.2% of patients were prone to malnourishment. 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. Critical weight loss was seen in about 77% of patients Post operatively. At 1 week post-op no significant association was found for size, site, stage and mode of nutrition, however Critical weight loss at one month was significantly associated with size of tumor (p=0.048), and at 6 months with Size and Stage of tumor (p=0.015,p=0.002). When analyzed independently Critical weight loss was found to be significantly associated with Stage of tumor(p=0.040) and Mode of Nutrition(p=0.003).

Conclusion: The study suggests critical weight loss is significantly present at 1 month and 6 months post operatively. In oral cavity squamous cell cancer patients stage, size of tumor and regional metastasis are better indicators of Critical weight loss, entral nutrition being associated more with weight loss as compared to oral nutrition

Keywords: malnutrition, Head and neck cancer, Otolaryngology

9.15

MALT LYMPHOMA OF THE BASE OF THE TONGUE: A RARE CASE ENTITY

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Lymphoma is a malignant tumour arising from lymphoid tissue, with the majority of cases being in the lymph nodes, however, in 1/4th of cases, these tumours are found in extralymphoid tissue. Lymphoid tissue is also found in organs having mucosa, such as the digestive tract, salivary gland and in tracheal tissue. This collection of lymphoid tissue is known as mucosa-associated lymphoid tissue (MALT), and non-Hodgkin lymphoma involving this extralymphoidal lymph tissue is known as MALT lymphoma. It was first reported by Isaacson and Wright in 1983, however, it was not included as a working diagnosis in clinical use until it was reclassified as 'marginal zone B-cell lymphoma' in a 1994 Revised European American Lymphoma (REAL) classification. It is rarely seen in the head and neck region, and we report the sixth case of MALT lymphoma of the base of the tongue. A 61-year-old man presented with dysphagia and the feeling of a lump in his throat for 5 months.

Keywords: Maltoma, Head and neck cancer, Otolaryngology

9.16 THE DEVELOPMENT AND VALIDATION OF MNCH CLINICAL OBSERVATION SCALE – AN INSTRUMENT TO ASSESS CHANGES IN THE CLINICAL SKILLS OF HEALTHCARE PROVIDERS

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Introduction: This paper highlights the process undertaken to develop and validate a Maternal, Newborn and Child Health (MNCH) clinical observation scale. The scale has been devised to assess changes in the clinical skills of healthcare providers as a result of attending an eLearning program offered by the French Medical Institute for Children (FMIC), Kabul to various sites in Afghanistan and Tajikistan. Objective: To develop and validate the MNCH clinical observation scale to assess changes in the clinical skills of healthcare providers as a result of attending an eLearning program.

Methods: In stage I, the scale was developed by the research team after an extensive literature search. In stage II, the scale was reviewed by a group of experts for content, gender, language, research, and local relevance to establish content and face validity. The scale was assessed for its relevance and clarity and was modified accordingly.

Results: The MNCH clinical observation scale is divided into nine subscales: family planning, calculating estimated date of delivery, antenatal examination, postnatal assessment, breastfeeding, pre-eclampsia/eclampsia, postpartum hemorrhage, management of newborn, and management of birth asphyxia or respiratory distress syndrome. There are 49 items measured

on a four-point scale. There is also a section on demographic details of the participants.

Conclusion: The involvement of the experts resulted in the development of a validated MNCH clinical observation scale that will be used to assess changes in clinical skills of healthcare providers at various sites in Afghanistan and Tajikistan. The tool has also been converted into a mobile application.

Keywords: observation-scale, validity, Maternal, Newborn and Child Health (MNCH)

9.17 ASSESSING SCHOOLS READINESS AND DEVELOPMENT HEATH STATUS OF CHILDREN IN KARACHI, PAKISTAN

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Introduction: This study aims to assess the school readiness and developmental status of katchi (preprimary) and class 1 students in the government schools of three towns of Karachi (Malir, Jamshed, and Gulshan-e-Iqbal), Pakistan.

Method: School readiness and developmental status was assessed in 5911 children from 166 government schools using Early Development Instrument (EDI), a teacher completed checklist assessing five developmental domains: “physical health & well-being”; “emotional maturity”; “social competence”; “language & cognitive development”; “general knowledge & communication”. A child is classified as vulnerable on an EDI domain if the score is below 10th percentile for that domain and is further classified as vulnerable overall if child is vulnerable on one or more domains.

Results: Analysis was conducted on 4874 children (43.5% boys; 56.5% girls) meeting EDI validity criteria. In all the three districts children above mean age (7.06 ± 1.94 years) consistently

scored significantly higher on EDI domains. Overall vulnerability was found in 1291 (26.5%) children with boys (30.6%) being more vulnerable as compared to girls (23.3%). Vulnerability on one EDI domain was found in 657 (13.5%) children whereas 634 (13.0%) were vulnerable on two or more domains. The mean EDI score for all domains was significantly higher in children from Jamshed town ($p < 0.05$). Children whose parents were educated had lower vulnerability ($p < 0.05$).

Conclusion: The large number of students not meeting their age appropriate developmental milestones indicates need for community based targeted interventions.

Keywords: developmental health, vulnerability, school readiness

9.18

LEARNING ENVIRONMENT: STUDENTS' PERCEPTIONS USING DREEM INVENTORY AT AN OPTOMETRY INSTITUTE AT PAKISTAN

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Purpose: Educational environment is an important component of the curriculum and an indicator of the quality of its graduates. A number of factors are responsible for shaping the educational environment. The present study was undertaken to measure the educational environment of an optometry institute in Pakistan as perceived by its students.

Methods: This was a cross sectional survey conducted at Isra School of Optometry, Karachi, Pakistan using the Dundee Ready Educational Environment Measure (DREEM). The DREEM questionnaire was administered to all the students of the institute maintaining anonymity.

Global and domain scores for the institute and across different years were calculated using non-parametric tests.

Results: For a total of 78 students (90%) who returned the completed questionnaires, the mean DREEM score was 61.5% (123/200). The highest percent score was observed for "Student's Perception of academic self" domain (72%) and the lowest for "Student's Perception of teachers" (56.8%). There was significant difference in the perceptions of the students in different years of education.

Conclusion: Mean DREEM score was more positive than negative. The study highlighted strengths of the program and areas requiring improvement. Remedial measures addressing the areas identified would improve the quality of the educational environment and thus the program.

Keywords: Educational environment, Perception, Optometry

9.19

5D MODELING OF COMPETENCY-BASED CLINICAL SUPERVISION IN HEALTH PROFESSIONS

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Clinical supervision is diverse and multidimensional. Effective clinical supervision is expected to result in competent healthcare providers resulting in provision of improved quality of healthcare. However, the competency-based supervisory models are vulnerable by the complexity of outcomes. So what are the different dimensions to base today's competency-based effective clinical supervision?

Competency based clinical supervision is attracting attention with more discussions around it. A study was conducted at Aga Khan University; Karachi, Pakistan that proposed a five dimensional model which can be used for competency based clinical supervision in health professions. This is based on Social-cognitive Learning Theory.

First Dimension: Learner Self Efficacy

Second Dimension: Outcome Expectations

Third Dimension: Socio-Structural Factors

Fourth Dimension: Supervisor Competence

Fifth Dimension: Supervisory Relationship

The process of clinical supervision itself entails the monitoring process, the support process and the learning process. There is a dearth of literature in competency-based clinical supervision with respect to health professions. Another study is under way to determine the relationship of the factors that contribute to effective competency based clinical supervision in health professions. This further development is based on Kolb's Experiential Learning, Gagne's Learning Theory, Skinner Operant Condition Theory and Transformation Learning Theory. This study uses the five dimensions to build a theoretical based working model of competency-based clinical supervision in health professions.

9.20

FACULTY DEVELOPMENT IN PAKISTAN: A NATIONAL NEEDS ASSESSMENT OF MEDICAL COLLEGE FACULTY

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Background/objectives: The number of medical colleges in Pakistan has increased drastically in recent years and so have the number of medical

teachers. There is a dearth of information about faculty needs at both at the institutional and individual level despite prior studies.

This study aims to identify faculty development needs and how technology enhanced education activities can support faculty development in Pakistani medical colleges.

Methods: The study is a cross-sectional survey sent to faculty of medical colleges in Pakistan. Part-time faculty was not included to avoid sampling errors. The data for this study was collected by having medical faculty from medical schools fill a 14 item online anonymous survey developed on Google. A sample size of 379 was collected to achieve statistically significant results with a 5% margin of error and confidence level of 95%. Simple and comparative descriptive statistic methods were used for analyzing the data for this study.

Results: Our results revealed that the participants were mostly: women (60.3%); were from private medical colleges (69.8%), involved with undergraduate medical education (69.3%). The main barriers to faculty from attending capacity development programs were a lack of: protected time (54.1%), scheduled educational activities (45.7%) and funding (35.7%). Most respondents had not attended any form of on-line faculty development activity (62.1%), while rest had (37.9 %). Most of those who had attended online faculty development programs found them helpful (71%). The areas commonly requested for faculty development are assessment, curriculum development and educational research.

Conclusions: The results of the study will help in planning health professions education related faculty development initiatives in Pakistani medical colleges.

Keywords: Capacity building, Faculty Development, Health Professions Education

9.21 CONTRIBUTION OF INTERNAL MEDICINE RESIDENCY GRADUATES TOWARDS HEALTHCARE IN PAKISTAN

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Introduction: Only limited data is available about Pakistani physicians who are pursuing their medical career in the country after post-graduation. No data is reported about Pakistani physicians who choose to live and serve in their country. Aim of this study is to explore the future roles of graduating residents and their contribution to healthcare in Pakistan.

Methods: It was a Cross-sectional study conducted at Aga Khan University Hospital, Karachi from December, 2012 to December, 2013. From the database maintained by the department of medicine, information on demographic details, year of post-graduation, specialty choice, country and place of current practice, designation and workplace was obtained on all Internal Medicine graduates since 1989. Descriptive statistics were applied.

Results: Out of 155 graduating physicians, 55.7 % are practicing across Pakistan and 44.3 % are working abroad. Internal medicine is practiced by 36% of the graduates, followed by cardiology 16% and gastroenterology 12%. Out of 55.7% of graduates in Pakistan, 73.5% are employed at various institutions across the country and 26.5% are working at Aga Khan University Hospital in Karachi.

Conclusion: The internal medicine residency training at Aga Khan University Hospital prepares the graduating physicians for a variety of career options. Our study demonstrates that a substantial number of our graduates are working in various institutions across the country and

contributing to healthcare needs of the population.

Keywords: Internal Medicine Residency, Postgraduate medical education, emigration of medical graduates.

9.22 SHARING OUR SIMILARITIES AND CELEBRATING OUR DIFFERENCES: QUALITATIVE STUDY ON RESIDENTS AND NURSES UNDERSTANDING OF RESIDENT PERFORMANCE

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Background/objectives: Since the use of various assessor groups is a strength of 360-degree feedback procedures, it may be inferred that various performance dimensions may underlie MSF ratings, and these dimensions may differ among the assessor groups.

The study was conducted after ethical approval at Aga Khan University Hospital, in the context of residency training in internal medicine and sought to explore the performance theories as used by assessors when evaluating an outstanding, average and problematic resident.

Methods: A qualitative research design was used and data was collected from interviewing 14 nurses and 15 residents by 4 interviewers about their understanding of an outstanding, average and problematic performing resident. Datasets analyzed separately, and after analyses results were used to gain more in-depth understanding of performance theories between residents and nurses.

Results: Qualitative analysis revealed seven major themes related to performance theories,

namely; communication skills, patient care, accessibility, teamwork skills, responsibility, medical knowledge and professional attitude.

There were considerable overlaps, but also meaningful differences in the performance theories of residents and the nurses.

Communication skills and patient care were found to be the major themes identified by both groups of raters. Accessibility was a theme particularly noted by the nurses while residents identified medical knowledge.

Conclusion: Our findings suggest that different assessor groups may hold different performance theories. This may help explain assessor variability in MSF assessor ratings.

A better understanding of performance theories would help programme directors profile outstanding, problematic and average residents, help develop assessment criteria to enhance the performance of underperforming residents, and improve programme quality.

Keywords: Residents evaluation, Multisource feedback, performance theories

9.23 APPLICABILITY OF COGNITIVE APPRENTICESHIP MODEL IN WARD ROUND LEARNING

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Background: Workplace provides context for learning. Most learning at workplace is informal and takes place through engagement in work processes and activities. Cognitive apprenticeship provides sequencing of learning activities, which includes; increasing complexity, increasing diversity and global to local skills. We therefore would like to evaluate

the role of cognitive apprenticeship model in internal medicine ward rounds, which is a concrete situation of learning both for medical students and the residents.

Methods: We conducted a cross-sectional study at Aga Khan University Hospital (AKUH) Karachi. Our study subjects were trainees and medical students who have rotated through or are currently rotating through Internal Medicine at AKUH. They were included only if they spent at least 3 months in Internal Medicine.

Results/findings: Out of a total of 196 participants enrolled 101 (51.5%) were females. The sample had equal representation of residents and students. Around 80% (156) participants reported diversity in the team. 75.5% (148) participants reported that they are provided with tasks of increasing complexity as the rotation progresses. Coaching and scaffolding had major contribution to the perceived learning among all the competencies. The score for clinical skills contributed by all the methodologies was a significantly different between residents and students ($P=0.049$). Competencies that included clinical presentation skills, clinical skills, and diagnostic competencies, clinical problem solving skills, communication skills, counseling, professionalism, patient management skills, leadership skills and medical ethics were improved from all the methodologies that included modeling, coaching, scaffolding, articulation, reflection and exploration. Mean score of that the respondents gave to each of these competencies by all the methodologies were greater than 3.5 out of a total 5.0 points.

Conclusions: Cognitive Apprenticeship model is a well suited model from the perspective of trainees and can contribute to improvement in individual's perceived learning and skills during ward rounds.

Keywords: Teaching methods, Cognitive

apprenticeship, Medical Education, Ward Rounds

9.24

CONTRIBUTION OF INTERNAL MEDICINE GRADUATES TOWARDS HEALTHCARE IN PAKISTAN

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Department of Medicine, Aga Khan University, Karachi

Background: Only limited data is available about Pakistani physicians who are pursuing their medical career in the country after post-graduation. No data is reported about Pakistani physicians who choose to live and serve in their country.

Objectives: To study the number of physicians graduating from the internal medicine residency programme of Aga Khan University Hospital since 1989, their career choices and their contribution to healthcare across the country.

Methods: A cross-sectional study was conducted at Aga Khan University Hospital from December, 2012 to December, 2013. A standard questionnaire was administered to the graduates of the internal medicine training programme after obtaining their contact information from the database of the department of postgraduate medical education (PGME). The questionnaire covered demographic information, specialty choice, country and place of current practice, designation and workplace. Descriptive statistics were applied.

Results: Out of 155 graduating physicians, 55.7% are practicing across Pakistan and 44.3% are working abroad. Internal medicine is practiced by 36% of the graduates, followed by cardiology 16% and gastroenterology 12%. Out of 55.7% of graduates in Pakistan, 73.5% are employed at

various institutions across the country and 26.5% are working at Aga Khan University Hospital in Karachi.

Conclusion: The internal medicine residency training at Aga Khan University Hospital prepares the graduating physicians for a variety of career options. Our study demonstrates that a substantial number of our graduates are working in various institutions across the country and contributing to healthcare in Pakistan.

Keywords: Internal Medicine Residency, Postgraduate medical education, emigration of medical graduates.

9.25

BLENDED LEARNING: AN ALTERNATE APPROACH TO IMPROVE THE LEARNING AND ATTITUDE OF MEDICAL RESIDENTS FOR DERMATOLOGY

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Background: Blended learning (BL) is an emerging technology based teaching strategy. Currently studies have been conducted to evaluate its effectiveness. Dermatological disorders are common in medical practice, the future internists should get a better understanding of these as they encounter with them in their daily practice. The time given to teaching dermatology is usually very limited due to service and time management issues. Online teaching along with didactic component increasingly been used in educational settings to increase the exposure to common dermatoses. The purpose of study is to evaluate the effectiveness of BL pedagogy versus traditional

teaching among medical residents for Dermatology.

Method: This Quasi-Experimental study involved 46 medicine residents. The residents were divided into two groups using systematic sampling. One group studied through BL and other studied traditional approach. Course contents, objectives, outcomes remain same for both. The cognitive gain about dermatology, diagnostic skill and critical thinking were measured by a scenario based MCQS. The perceptions and attitudes of residents were evaluated using the Dundee tool and also through a focus group discussion. For the quantitative aspect, the descriptive and inferential analysis was performed using SPSS. Qualitative data were gathered and thematic analysis was performed.

Results: BL found to be significantly better and appropriate than TL in most of the areas of the educational environment. The gain in knowledge and diagnostic skills was found to be similar before starting the course but after the course found to be higher in BL groups. The results were statistically significant.

Conclusion: The current study findings suggested that residents are open to new learning methodologies. The BL is an effective, appropriate and user friendly method for teaching dermatology. It also indicates the ways to improve the use of BL in a resource limited settings.

Keywords: Blended, Traditional, teaching approaches

Infection and Immunity

10.2

ASPERGILLUS AS A RARE CAUSE OF NON-HEALING TRAUMATIC BREAST WOUND

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Introduction: Aspergillus is an opportunistic fungal infection in immunocompromised hosts with a very rare occurrence in breast tissue.

Case Report: We report a case of Aspergillus flavus, identified within a non-healing ulcer in the breast of an immunocompromised host. The patient was a 63-year old lady with diabetes mellitus and severe rheumatoid arthritis requiring oral prednisolone therapy. She had developed a pressure ulcer on her right breast secondary to an upper extremity cast placed for conservative management of a humerus fracture. This pressure ulcer failed to improve despite multiple debridements, local wound care and antibiotic treatment. Tissue biopsy from the debridement specimen revealed fungal hyphae without evidence of malignancy. Formal fungal cultures confirmed this to be Aspergillus flavus. She was started on oral Itraconazole along with local wound care. She later succumbed to gram negative sepsis and Disseminated intravascular coagulation (DIC). Extensive literature search to identify causes of non-healing traumatic breast wounds revealed a few case reports only.

Conclusion: Aspergillus can present with extensive soft tissue or breast involvement in immune suppressed individuals and should be considered in patients with a non-healing breast wound with a high index of suspicion.

Keywords: Aspergillus, breast wound, immune compromised

10.3

ROLE OF CULTURAL AND SOCIAL BARRIERS IN INCREASED BURDEN OF HEPATITIS B IN PAKISTAN: LITERATURE REVIEW

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Hepatitis B is a deadly infectious disease, which is increasing now days in Pakistan. This disease is also rooted in the poverty and illiteracy. There are huge discrepancies in health conditions between rural and urban areas and among different socio-economic strata, which have also played role in increasing the burden of this deadly disease. Furthermore, multiple social and cultural barriers are prevailing in the country might play an important role in increasing the burden of this disease in the society. Thus, it is important to review the literature on the burden in Pakistan and to study those social and cultural barriers causing rise in the burden of Hepatitis B. Thus, the objective of this review was to synthesize the findings regarding the burden of hepatitis B in Pakistan and to review the social and cultural barriers, which have resulted increased burden of the Hepatitis B in Pakistan. This would help Policy makers and Government of Pakistan to take some appropriate actions against the most common barriers, playing an important role in increasing the burden of the disease.

Keywords: Hepatitis B, Social, Cultural

10.4 ABDOMINAL TUBERCULOSIS VERSUS CARCINOMATOSIS

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Objective: To differentiate peritoneal tuberculosis from carcinomatosis on CT abdomen taking ascitic fluid cytology / omental biopsy as gold standard.

Materials and Methods: Retrospective review of CT and histopathology/cytology reports from February 2007 to February 2016, of all patients from radiology and clinical database. All CT abdomen were reviewed for features of TB and carcinomatosis. CT findings were correlated with final clinical diagnosis by using appropriate statistical tests. P-value less than 0.05 considered as significant.

Results: A total of 102 patients were identified with abdominal disease. Finally 98 patients were included in this study on the basis of inclusion criteria. Out of 98 patients, 62 came out disseminated TB and 36 diagnosed as malignant on cytology/ histopathology. CT features were significantly specific to differentiate abdominal TB from carcinomatosis ($p=0.004$). 90.5% of patients with abdominal tuberculosis showed smooth peritoneal thickening ($p=.000$), while 81.1% cases showed high density ascites ($p=.000$) which were highly significant and for lymph node necrosis ($p=.474$), terminal ileum/ iliocecal abnormality ($p=.059$) and primary mass on CT ($p=.175$) were insignificant. The accuracy and sensitivity of CT scan were found to be 100% and specificity was 83% in diagnosis of abdominal TB.

Conclusion: Contrast enhanced CT abdomen can be a useful tool for definitive diagnosis of peritoneal tuberculosis and can differentiate peritoneal carcinomatosis. Smooth peritoneal

thickening, high density ascites and lymph node necrosis are more associated with abdominal TB. CT can reduce the number of unnecessary omental biopsies and is a useful modality for management of patients with omental disease.

Keywords: Tuberculosis, carcinomatosis, computed tomography

10.5 CASE REPORT TITLE: POST NEUROSURGICAL PROCEDURE COLISTIN RESISTANT ACINETOBACTER BAUMANNII MENINGITIS SUCCESSFULLY TREATED BEYOND MULTI DRUG RESISTANCE!

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Nosocomial meningitis following neurosurgical procedures is becoming an important group of meningitis associated with critical implications. Most of its causative organisms are multi-drug resistant with Intrathecal Colistin being the only antimicrobial option. Here we report a case of nosocomial meningitis following neurosurgical procedure that was even resistant to Colistin. There is as such no well established treatment for such colistin resistant organisms, imposing new treatment challenges in the coming era. 55 years old male presented with intracranial infarct underwent decompressive craniotomy with external ventricular drain placement. During hospital stay developed fever with deteriorating level of consciousness, CSF D/R suggested meningitis with CSF C/S isolating Acinetobacter Baumannii sensitive only to Colistin. He was started on intravenous and intrathecal Colistin with intravenous Meropenem. Despite being on appropriate antibiotics patient remained febrile

with CSF persistently harboring *A. Baumannii* which eventually became resistant to Colistin. At this stage colistin and meropenem were continued and Amikacin was added both in intravenous and intrathecal forms to which patient had responded well. His fever subsided, conscious level improved with clearance of CSF as evident in three consecutive CSF cultures. Micro organisms are now heading from Carbapenem resistance towards colistin resistance with no established treatment options. From this we have concluded that intravenous and intrathecal Amikacin may have promising effect in the management of Colistin resistant nosocomial meningitis

Keywords: Nosocomial meningitis, *Acinetobacter Baumannii*, Colistin

10.6 IDENTIFICATION OF MOSQUITO VECTORS OF ARBOVIRAL INFECTIONS FROM AGA KHAN UNIVERSITY, KARACHI, PAKISTAN

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Introduction: Data on vectors for the arthropod-borne viral illnesses in Pakistan has been found to be limited. This study is a pilot study that was carried out to determine the prevalence of different Arbovirus mosquito vectors at the Aga Khan University (AKU), stadium road Karachi campus. This study is part of an on-going cross-

sectional study aimed to determine the role of Arboviruses in causing undifferentiated febrile illness in Sindh, Pakistan.

Methodology: Three types of mosquito traps were set daily from 7 p.m. to 7 a.m., from July to November 2015 at various locations within AKU. The traps were collected and processed at multi-disciplinary lab at AKU Medical College, where they were identified, analyzed and stored in eppendorfs and frozen at -80oC for retrieval in future for Polymerase Chain Reaction (PCR) assays by formally trained researchers.

Results: A total of 9257 mosquitoes were caught from various sites within AKU, of which 9188 (99.245%) were *Culex Pipiens* (47.86% Male; 52.14% Female), 57 (0.00615%) *Anopheles* species (49.12% Male, 50.88% Female) and 12 (0.00129%) were *Aedes Aegypti/Albopictus* (25% Male; 75% Female). The CDC Gravid Trap was the most successful Trap, accounting for 70% of all mosquitoes caught. The peak time for catching mosquitoes was September (n=2434) and October (n=3553) which corresponds with the period of maximum mean monthly temperature.

Conclusion: The predominant mosquito species at AKU stadium road campus is *Culex Pipiens*, followed by *Anopheles* species, and *Aedes Aegypti/Albopictus*. This implies easy availability of vector for Malaria, Dengue, West Nile Virus, and Japanese Encephalitis Virus. It remains to be seen what proportion of mosquitoes were infected with these viruses using PCR assays carried out on crushed mosquito extracts.

Keywords: Arbovirus, Mosquito, Febrile Illness

10.7

PUEPERAL SEPSIS

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Purpose: This paper highlights the root causes of puerperal sepsis in mothers after delivery and the ways to manage and prevent it.

Method: This is a literature review on root causes of puerperal sepsis and its management. According to WHO “ Puerperal sepsis is infection of the genital tract occurring at any time between the rupture of membranes or labor which usually more than 24 hours after delivery before the symptoms and signs appear”. Main causes of puerperal sepsis are endogenous and exogenous bacteria which can invade in the body through different mediums. To confirm the etiology of puerperal sepsis there are several diagnostic test as well as physical examination like blood cultures, urine midstream testing, vaginal swab etc. Based on etiological factors puerperal sepsis can be treated in different ways which includes; giving antibiotics, isolating the patient, blood transfusions and surgical procedures. To prevent puerperal sepsis proper teaching should be given to trained birth attendants, proper and sterile handling during delivery and teaching the client about the signs and symptoms of infection.

Conclusion: It is our prime duty to consider patient’s health under consideration. We as a health care provider should properly educate trained birth attendants about the handling of placenta and sterile techniques during delivery. Proper education should be given to client about hand and perineal hygiene, sign and symptoms of infection and seeking medical treatment on time.

Keywords: Sepsis, Hygiene, Delivery

10.8

NOSE PLUGS INSTEAD OF NOSE CLIPS:PROPHYLAXIS AGAINST PRIMARY AMOEBIC ENCEPHALITIS CAUSED BY NAEGLERIA FOWLERI

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Background: Naegleria fowleri is a free-living amoeba; it is a protist pathogen that is known to cause a fatal encephalitis in humans known as “primary amoebic meningoencephalitis” (PAM). The peak season for the cases admitted to the hospital is in the summers, and all the reported cases have a history of exposure to the warm waters. Mostly, PAM is reported in recent swimmers and people who perform ablution and/or nasal cleansing.

Objective: Much has been done for vaccination and treatment without any success in past 60 years, but the mortality has remained 99%. Here, we propose a prophylaxis for this disease by introducing a device “Naegleriopel.”

Methods: This device is made up of silicone, is noninvasive and requires insertion into the nostrils at times of swimming or water sports related activities. This device, made up of synthetic plastic or silicone, could be adapted to the contours of the interior of the nose.

Conclusion: Naegleriopel is expected to reduce the sporadic and seasonal incidences of PAM. It is expected to be more popular and cosmetically acceptable.

Keywords: Naegleria Fowleri, PAM, Device Innovation

10.9

A PROPOSED CASCADE OF VASCULAR EVENTS LEADING TO GRANULOMATOUS AMOEBIC ENCEPHALITIS

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Background: Granulomatous amoebic encephalitis due to *Acanthamoeba* is a chronic disease that almost always results in death. Hematogenous spread is a pre-requisite followed by amoebae invasion of the blood-brain barrier to enter the central nervous system.

Objective: Given the systemic nature of this infection, a significant latent period of several months before the appearance of clinical manifestations is puzzling. Based on reported cases, here we propose pathogenetic mechanisms that explain the above described latency of the disease.

Methods: Review of literature with details of the pathogenesis was explored and a model of infection was constructed. The sequence of event of *Acanthamoeba* in cerebral circulation was constructed.

Results: It was inferred that *Acanthamoeba* uses adhesion molecules and integrins to attach and invade the blood brain barrier and infect the brain. Also, there appears to be chemical chemotaxis that directs this protist towards the brain.

Conclusion: Knowledge of the pathogenetic steps involved in GAE could help manufacture drugs that could resist the CNS invasion after infection of soft tissue and skin by *Acanthamoeba* spp.

Keywords: GAE, *Acanthamoeba*, Blood Brain Barrier

10.10

"CELLS" ON CELL PHONES

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Introduction: Virtually everybody carries a cell phone. What rarely comes to mind is the type of "cells" (i.e. microorganisms) on these phones. Continuously used cell phones are rarely cleaned and the warmth of hand, provide optimal conditions to promote bacterial growth.

Objective: This pilot study aims at inspecting the kinds of cells found on student cell phones.

Method: From cell phones of students aging 6 to 20 years, samples were collected using sterile wire loops and inoculated on nutrient agar plates. These were kept at room temperature and observed for microbial growth. Gram staining was performed for each colony and micrographs were recorded. **Result:** Huge number of, varied size and shape colonies were observed, with colors ranging from white, yellow, orange, red, black and grey. Gram staining indicated both gram positive and gram negative bacteria, mostly, but not limited to rods.

Recommendation: Be aware that cell phones contain "cells" that could serve as a potential source of infection. Limit their use. Best practice would be to wash/sanitize hands at least after, if not before attending every call.

Future Direction: The specific identification of the types and nature of cells on cell phones will demonstrate their role in spreading infections. Effectiveness of different disinfection protocols need to be tested, in order to offer viable solution.

Keywords: Bacteria, Mobile Phones, Contamination

10.11

MICROBES ON LAPTOPS

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Introduction: Ignoring, that laptops are only infrequently cleaned; and the heat produced, can facilitate microbial growth, one would expect a laptop to be as clean as, perhaps, a home table.

Objective: We explored the presence of microbes on student laptops.

Method: Samples were taken from laptop keyboards of student aging 16 to 20 years, with sterile swab. As controls, table sample was also taken before wiping with disinfectant. These were streaked on nutrient agar and placed at room temperature. Growth was observed and preliminary identification was done through gram staining of each of the representative colonies from all samples.

Result: A larger number of bacterial, and presumably, even fungal colonies were obtained from the laptop samples, whereas the control sample showed minimal growth. These colonies ranged from white irregular to smooth yellow, orange and red, to greyish black bumps. Gram staining indicated mostly gram negative bacteria. Further identification is required to pinpoint the type of microbes and their pathogenic nature, if any.

Recommendation: Laptops surely contain more microbes than a regular table/workplace. Despite the uncertain pathogenic nature of these contaminations, caution is recommended to assure students' health and safety. Avoid eating with laptops; eat with family, instead. Clean keyboards frequently, with alcohol swab; and wash hands before and after using laptops.

Keywords: keyboards, bacteria, infection

10.12

BIOINFORMATICS UNCOVER THE EVOLUTION OF CHOLINERGIC SYSTEM AND M3-MUSCARINIC RECEPTORS IN ACANTHAMOEBA CASTELLANII: BIOINFORMATICS 3DMODELLING AND EXPERIMENTATION

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Background: Cholinergic signal transduction via muscarinic cholinergic receptors (mAChR) is seen in many multicellular eukaryotes to execute several metabolic and survival functions. Their role in the biology of the unicellular pathogenic eukaryotes, like *Naegleria fowleri* and *Acanthamoeba* specie has emerged recently.

Objective: Antimuscarinic agents that bind muscarinic receptor subtypes are increasingly being reported to be amoebicidal in pathogenic eukaryotes; therefore we hypothesized the presence of a muscarinic cholinergic survival system and a cholinergic binding receptor.

Methods: Methodologies used were, bioinformatics analysis, structure activity relationship, ligand binding prediction and growth assays.

Results: We show the evidence for the presence of key enzymes of cholinergic system like choline acetyltransferase (ChAT), Acetylcholinestrerase (AChE), as well as the expression of L8HM52, a primitive muscarinic binding G-proteins in the *Acanthamoeba*. The amino acid sequence of L8HM52 of a range 140-463 showed a structural homology to mAChR3 subtype and generated a template that modelled M3 subtype of muscarinic receptor. Ligand binding predictions showed N-Methyl Scopolamine as (anticholinergic agent) a ligand for L8HM52. We also show an evolutionary relation between L8HE56 and human mAChR3, which can be traced back to Rhodopsin superfamily. Growth assays showed proliferative response to muscarinic agonists and inhibition of growth was observed with muscarinic antagonists like atropine and dicyclomine.

Conclusion: If a muscarinic cholinergic survival system and the ligand binding site are expressed in *Acanthamoeba* and could be shown by structural bioinformatics and modelling, it could help in the understanding of evolution of these GPCRs in eukaryotes.

Keywords: Evolution of GPCRs, Autocrine, Non-neural Cholinergic transmission

10.13

EVIDENCE OF PRIMITIVE M1-MUSCARINIC GPCR IN UNICELLULAR EUKARYOTES: FEATURING ACANTHAMOEBA SPP

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Background: Acetylcholine affects the target cellular function via muscarinic and nicotinic cholinergic receptors that are seen to exist in humans. Both the cholinergic receptors are G-Protein coupled receptors (GPCRs) that perform cardinal functions in humans. Anti-muscarinic drugs, particularly the ones that target M1 subtype (mAChR1), have consistently shown to kill unicellular pathogenic eukaryotes like *Acanthamoeba* spp.

Objective: As the M1 receptor subtype has not been reported to be expressed in the above protists, the presence of an ancient form of the M1 muscarinic receptor was inferred. Bioinformatic tools and experimental assays were performed to find the expression of ligand binding site.

Methods: A search for sequence homology of amino acids of human M1 receptor failed to uncover an equivalent ligand-binding site on *Acanthamoeba*, but structural bioinformatics showed a hypothetical protein L8HIA6 to be a structural homolog of the human mAChR1.

Results: Immunostaining with an anti-mAChR1 antibody showed cellular staining. Growth assays showed proliferation and lethal effects of exposure to mAChR1 agonist and antagonist

respectively. With the recent authentication of human mAChR1 structure and its addition to the database, it was possible to discover its structural analog in *Acanthamoeba*; which clarifies the effects of anticholinergics observed in the past on *Acanthamoeba* spp.

Conclusion: With a narrow choice of drugs to treat fatal meningoencephalitis caused by *Acanthamoeba* spp, the discovery of an ancestral mAChR1 on *Acanthamoeba* could prove to be a potential therapeutic target in the future.

Keywords: Acetylcholine, Bioinformatic tools, mAChR1

10.15

LOW ANTIBIOTIC RESISTANCE IN STREPTOCOCCUS PNEUMONIAE ISOLATES AMONG HEALTHY CHILDREN FROM A LOW INCOME COMMUNITY FROM SOUTHERN PAKISTAN

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Background and Objective: Streptococcus Pneumoniae is the leading cause of morbidity and mortality in children worldwide. Pakistan has introduced PCV in its EPI program which makes pneumococcal, a preventable disease in Pakistan. However reduction in disease burden is dependent upon the prevalence of vaccine preventable serotypes and effective case management. There is lack of data on serotype distribution and antimicrobial susceptibility from healthy community children from Pakistan.

Methods: A cross-sectional study is being conducted in Matiari, Pakistan from Oct 2014 to Jan 2016. Isolates were obtained from the nasopharyngeal swabs of children 2-24 months. Pneumococcal isolates were identified by optochin sensitivity and bile solubility tests. Isolates were tested for antimicrobial resistance by the Kirby-Bauer disk-diffusion method.

Sequential monoplex and multiplex PCR serotyping was performed on DNA extracted from isolates.

Results: Among 991 nasopharyngeal specimens received, 802 (81%) were positive for *Streptococcus Pneumoniae*. *S. Pneumoniae* found to be very sensitive to antimicrobials especially Penicillin, Ceftriaxone and Vancomycin. Among the children with different age groups strains received from younger infants were more susceptible (99%) to oxacillin as compare to older infants (89%) $P < 0.05$. Among the most prevalent and virulent vaccine preventable serotypes i.e. 6B (5%), 23F (4%) & 19F (3%) and potentially preventable serotypes 6A (9%) & 19A (5%), antimicrobial susceptibility pattern remains same.

Conclusion: Low antimicrobial resistance against penicillin, ceftriaxone, and vancomycin has been seen in *Streptococcus pneumoniae* strains isolated from healthy children from southern Pakistan. This makes the case for continuing current empiric use of amoxicillin for pneumonia and third generation cephalosporins (ceftriaxone) for case management of pneumococcal sepsis and meningitis in Pakistan

Keywords: antibiotic resistance, *Streptococcus Pneumoniae*, Pakistan

10.16

DETERMINATION OF EVOLUTIONARY RELATIONSHIPS AND STRUCTURAL RESEMBLANCE AMONG VIRAL, BACTERIAL, FUNGAL AND HUMAN HELICASES

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Background: Helicases are molecular motor enzymes that untwine the nucleic acid lattice structure by utilizing the energy obtained upon

hydrolysis of Nucleoside Triphosphate. These proteins are categorized on basis of occurrence of ‘motifs’ and ‘unwinding mechanism’ into “superfamilies”. The objective of this study was to analyze the evolutionary relationships as well as Inter- and Intra-specie structural resemblance between helicases.

Methodology: The methodology includes employment of number of bioinformatics tools and databases. The helicase amino acid sequences were retrieved in FASTA format from NCBI database. These sequences of each helicase were then aligned and trimmed and subsequently used for the construction of phylogenetic trees via MEGA 6.0, and subsequently consensus sequences. The consensus sequences were used to derive template based 3D protein structures, which were then used to perform pairwise structural superimposition analysis.

Results: Phylogenetic analysis displays several interesting evolutionary relationships amongst inter- and intra-specie helicases. Intra-specie structural comparison of helicases revealed that bacterial helicases shared a moderate structural resemblance with each other. Similarly viral helicases also exhibited a moderate structural similarity. The inter-specie structural analysis showed that a low-to- average structural resemblances.

Conclusion: The resemblance is attributed to following reason: The helicase share common superfamily or evolved from a common ancestor, the helicase have common domains and motifs required for helicase activity. Since helicases play a crucial role in replication of organism’s genome, these characteristics can be exploited to devise broad-spectrum agents that can target and inhibit helicase in wide variety of pathogenic organisms.

Keywords: Evolutionary Relationships, Microbial, Helicase

10.17

NASOPHARYNGEAL CARRIAGE AND SEROTYPE DISTRIBUTION IN CHILDREN UNDER TWO YEARS OF AGE IN A RURAL COMMUNITY IN PAKISTAN AFTER INTRODUCTION OF 10 VALENT PNEUMOCOCCAL VACCINE

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Background and Objective: Streptococcus pneumoniae is carried normally in nasopharynx of children. PCV10 was introduced in Pakistan's Expanded Program of Immunization in April 2013 using a 3+0 schedule at 6, 10 and 14 wks of age. It is expected that carriage rate will decline for vaccine type (VT) serotypes. We describe here, carriage rates in immunized and unimmunized children <2 years from a rural community in Sindh, Pakistan with a previously reported VT carriage rate of 33% in children 3-12 months, prior to the introduction of vaccine.

Methods : Children < 2 yrs of age residing in the community were enrolled during Oct 2014 and Jan 2016. Nasopharyngeal specimens (NP) were collected and processed and pneumococcal serotypes were obtained using real-time sequential multiplex PCR assay. A child was defined as immunized if/he had received all three doses of PCV10.

Results: Of 991 children enrolled 443 children (45%) were fully immunized. Pneumococcal carriage was identified in 802 (81%) of enrollees. VT serotypes were responsible for 20% of the carriage. Most common VT serotypes were 6B and 23F. Three PCV13 specific serotypes 6A, 19A and 3 were responsible for 14% of the carriage (Figure 1). VT carriage rate in immunized was significantly lower than in non-immunized (15.6% vs. 22.3%. p-value < 0.01) (Figure2). The most notable difference was seen with VT serotypes 6B, 9V

and 19F (Fig 3). There was also some decrease, although not statistically significant, noted in potential cross-reactive serotype 6A (7.7% vs. 6.1 %).

Conclusion: Although beneficial effects of PCV10 on decreasing carriage are seen, vaccine coverage needs to be improved to transfer the benefits to larger population

Keywords: PCV 10 vaccine, serotype, Nasopharyngeal carriage

10.19

CHARACTERIZATION OF POPULATION SPECIFIC EPITOPES IN PAKISTANI COHORT

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Background: Rapid generation of mutation is a power weapon of HIV. HIV evolves rapidly under the host selection pressure to escape crucial steps in the antigen presentation pathway. Gag is a highly immunogenic protein of HIV and generates immunodominant epitopes. HIV gag protein harbour mutations specific to genetically diverse cohorts. These mutations are the result of specific pressure exerted by the cohort specific immunogenetic background in terms of their Human Leucocyte Antigen (HLA). These population specific mutations may allow the virus to survive in that particular host milieu. The aim of this study is to find out population specific mutations in HIV gag protein of Pakistani cohort, the role of these mutations in generation of population specific epitopes.

Methodology: So far in this analysis, 50 HIV-1 gag (p24 and p2p7p1p6 region) sequences,

retrieved from Los Alamos database, have been analyzed. Sequences were trimmed and aligned using MEGA software and analyzed for the unique pattern of mutations and their impact on epitope generation.

Result: In this study we found a population specific mutation in gag protein. At position 303 of amino acid, threonine (T) was replaced with valine (V) residue predominantly. This pattern of mutation has been also shown some association with patient high-risk profile and HLA types.

Conclusion: Population specific mutation at position 303, on p24 and p2p7p1p6 region of HIV gag Protein, in Pakistani cohort may produce unique epitopes and confers a potent escaping mechanism from the host T cell immunity.

Keywords: HIV, Gag, Epitopes

10.20

MOLECULAR DOCKING ANALYSIS REVEALS DIFFERENTIAL BINDING OF POPULATION SPECIFIC EPITOPES WITH THEIR RESTRICTING HLA TYPES

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Background: T cell immunity has been distinctly important in HIV infection control. Cytotoxic T-lymphocytes (CTL) recognize and lyse the HIV infected cell, which displays antigenic peptide on their surface. The display of antigenic peptide (epitope) on the infected cell surface involves sequential events called antigen presentation pathway. Human leucocyte antigen (HLA) directly binds to and displays the epitope on the infected cell surface. The aim of this study is to

determine if mutations in HIV gag protein can alter the affinity of peptide-HLA interaction.

Objective: Based on our previous study results that the V303T mutation can generate unique epitopes, we hypothesized that this mutation may also alter the peptide:HLA interactions. Since HLAs B*51, B*35, A*02, and C*04 had high population frequency in our cohorts, these HLAs were selected for the analysis.

Methodology: HLAs structures were downloaded from Protein Database (PDB). Three sets of epitopes each containing one V and T-version of epitope having a single C terminus point mutation, were constructed and docked against the HLAs B*51, B*35, A*02, and C*04 to check the effect of point mutation on HLA binding. Docking was performed by using PATCHDOCK online server.

Results: Overall, peptide/epitope DYVDRFFKV was found to form stronger interactions with HLA -A*02 and -*35, as compared to its T-variant, which formed stronger interactions with HLA -A*24, -B*51 and -C*04. Interestingly, some of the amino acids made interactions with Valine in the V-version, but formed no interaction with the Threonine in T-version.

Conclusion: Population specific mutation may influence epitope HLA binding.

Keywords: HLA, Peptide, Molecular Docking

10.23

DIAGNOSTIC VALUE OF PROCALCITONIN IN CRITICALLY ILL PATIENTS ADMITTED WITH SUSPECTED SEPSIS

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Background: Sepsis is the leading cause of mortality in critically ill patients. The diagnosis of sepsis is challenging, because clinical signs of sepsis and traditional markers of infection are often misleading. Procalcitonin (PCT) is a promising marker for identification of bacterial sepsis.

Objective: To determine the diagnostic accuracy of serum procalcitonin concentration in patients with suspected sepsis.

Methods: Patients suspected of having sepsis, admitted to the ICU of AKUH from Jan-Dec 2014 were included in the study after informed consent on day one of admission. Suspected sepsis was defined based on the 1991 ACCP/SCCM Sepsis Directory and the diagnostic criteria advanced by the 2001 International Sepsis Definition Conference. Serum PCT cutoff ≥ 0.5 ng/ml was taken for diagnosing sepsis. Diagnostic accuracy was measured in terms of sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) taking blood culture as gold standard. Different cutoffs were compared by using receiver operating characteristic curves (ROC).

Results: Mean age of the study group (n=103) was 46 ± 13 years, 60% being males. Mean PCT were 57.1 ± 35.9 ng/ml. Using a cutoff of 0.5ng/ml PCT exhibited a 93.75% sensitivity, 43.59% Specificity with 73.17%, and 80.95% PPV and NPV respectively. (p-value < 0.001). With respect to agreement with bacterial culture results PCT (72.8%) markedly exceeded WBC (69.9%) as a marker of sepsis. Applying ROC curve at a cutoff of 1.5ng/ml, PCT yielded sensitivity and specificity of 62.5% and 70% respectively. AUC was calculated to be 0.7.

Conclusion: Elevated PCT concentrations appear to be a promising indicator of sepsis in newly admitted, critically ill patients capable of complementing clinical signs and routine

laboratory parameters suggestive of severe infection.

Keywords: Procalcitonin, Blood culture, Sepsis

10.24

INCREASING USAGE OF RAPID DIAGNOSTICS FOR DENGUE VIRUS DETECTION IN PAKISTAN

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Objectives: Dengue virus (DENV) infections are endemic to Pakistan and have a clinical spectrum from mild dengue fever to severe dengue hemorrhagic manifestations. Early identification of DENV is important for appropriate management. We evaluated the trends in usage of DENV diagnostics in Pakistan.

Methods: Dengue virus testing (2012 – 2015) at The Aga Khan University Hospital, Karachi, Pakistan was evaluated. Test for DENV RNA by reverse transcription PCR (DEN-PCR), DENV antigen (DEN-Ag) by immunochromatic assay and for Human IgM against DENV (DEN-IGM) by ELISA were reviewed.

Results: Overall, of 33,577 specimens tested for dengue virus 11995 (35.7 %) were positive. These were; n = 1039, 28 % in 2012, n= 5791, 40% in 2013, n= 1027, 25 % in 2014 and n=4138, 36.4% in 2015. Most positives were in August – December of each year. Positive specimens as per DENV diagnostics used were: in 2012, it was 93% by DENV IgM and 7% by DEN-Ag tests; In 2013, it was 76% by DEN-IGM, 23% by DENAG and 1% by PCR; in 2014, it was 75.7 % by IgM, 24% by DEN-Ag

and less than 1% by DEN-PCR. In 2015, 47.6% cases were diagnosed by DEN-IGM and 51% by DEN-AG (and over 1% by DEN-PCR).

Conclusion: Between 2012 and 2015 testing based on DENV IgM changed from 93 to 48% IgM whilst usage of DENV-Ag and DENV-PCR changed from 7% to 52%. This combined usage of available diagnostics will lead to earlier diagnosis and more effective management of dengue infections.

Keywords: Dengue diagnostics, NS1 antigen, virus PCR

10.25

RAPID DIAGNOSIS OF PULMONARY TUBERCULOSIS IN CHILDREN BY XPRT MTB/RIF TESTING OF GASTRIC ASPIRATE AND STOOL SAMPLES

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Introduction: Rapid Diagnosis Of Pulmonary Tuberculosis In Children By Xpert Mtb/Rif Testing Of Gastric Aspirate And Stool Samples

Background: Childhood tuberculosis (TB) is difficult to diagnose as young children do not produce sputum making it difficult to appropriate specimens for testing. For Pulmonary TB, gastric aspirates are used to test for Mycobacterium tuberculosis (Mtb) but the method technically difficult and culture of Mtb takes weeks. Xpert MTB/RIF testing of alternate samples can reduce delay in diagnosis and management of TB.

Method: Patients suspected of pulmonary TB were recruited if that had a TB score ≥ 5 . Gastric

aspirate (GA) and stool samples were collected from 50 children. GA specimens were tested by MTB culture and Gene Xpert MTB/RIF assay. Stool samples were tested by Gene Xpert MTB/RIF. Performance of all tests was evaluated against a composite reference standard (CRS).

Results: We tested 27 male and 23 female children with mean age of 6 ± 4.2 years and a mean TB score of 7. Eleven MTB positive cases were diagnosed in GA specimens by Xpert, 10 by MTB culture and 6 by AFB microscopy. Ten cases were diagnosed positive by Stool Xpert. Against the composite reference standard (CRS), Xpert in stool had a sensitivity of 62.5% (95% CI= 35.9 – 83.7), specificity of 100% (86.7 – 100), PPV of 100% (95% CI = 65.5 – 100) and NPV of 84.2% (95% CI = 68.1 – 93.4).

Conclusions: These data show that stool Xpert can be a good choice for testing pulmonary TB in young children in a resource poor setting where invasive testing is difficult.

Keywords: tuberculosis, childhood, Xpert

10.26

PENICILLIN SUSCEPTIBILITY OF STREPTOCOCCUS PNEUMONIAE ISOLATED FROM BLOOD CULTURES IN KARACHI, PAKISTAN

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Introduction: Pneumoniae is the main cause of community acquired pneumonia and meningitis in Pakistan, and radical increase in rates of antibiotic resistance has been observed in the last few years. Invasive Pneumococcal Disease (IPD) has a high mortality. Penicillin remains the keystone of treatment for pneumococcal

disease (except meningitis). Therefore, determination of penicillin susceptibility of pneumococcal isolates is inevitable in patients with invasive pneumococcal disease, to inform appropriate therapeutic choices.

Objective: We determined the antibiotic susceptibility (AST) and minimum inhibitory concentrations (MICs) of Penicillin towards pneumococci isolated from the blood cultures of children and adults. *Methods:* All blood cultures received to the Aga Khan Laboratory from 2012-2014 positive for *S.pneumoniae* were identified through a laboratory database. Antibiotic susceptibility and MICs were entered and analyzed in MS Excel.

Results: Pneumococci were identified from blood cultures of 124 patients during period of 3 years (2012-2014). AST and MIC testing was performed for all isolates. However, based on MIC₅₀ and MIC₉₀ of 0.03µg/mL and 0.12 µg/mL respectively, 90% of the isolates would not be susceptible to treatment with benzyl penicillin. All isolates were susceptible to ceftriaxone. Disc diffusion testing showed 68.5% (n=85), 16.1% (n=20) and 88.7% (n=110) isolates sensitive to erythromycin, cotrimoxazole and chloramphenicol respectively.

Conclusion: We report a moderately high rate of penicillin non-susceptible pneumococci from blood cultures. Since high MICs predict worse outcomes of bacteremia, we recommend ceftriaxone as empiric therapy for pneumococcal sepsis and penicillin and ceftriaxone MICs to be routinely performed in all bacteremic isolates.

Keywords: Penicillin Susceptibility, *Streptococcus pneumoniae*, minimum inhibitory concentrations

10.27 PENICILLIN MIC OF STREPTOCOCCUS VIRIDANS AND BOVIS IN PATIENTS OF INFECTIVE ENDOCARDITIS IN KARACHI, PAKISTAN

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Background: Infective endocarditis is a microbial infection of the heart which despite the advances in medical, surgical and critical care interventions is associated with high morbidity and mortality. Positive blood culture is one of major diagnostic criterion for infective endocarditis. *Streptococcus viridans* are responsible for 50-60% of subacute infective endocarditis. They are a common cause of native and late prosthetic valve endocarditis. According to the AHA guidelines penicillin is the treatment of choice. However Penicillin resistance in vitro is increasing in frequency among the strains of viridans group streptococci and *S bovis*. In our study we have determined the penicillin MIC of streptococcus viridans and bovis in patients of infective endocarditis to determine the rate of resistance to penicillin. *Material and Methods:* Retrospective analysis of laboratory data was conducted (2012 to 2014). *Streptococcus* isolates from blood were identified using API streptococci. Penicillin MICs were determined by using penicillin Etest. The interpretation was done on the basis of the cutoff values provided by CLSI and European guidelines for management.

Results: 150 Streptococcal isolates were analyzed from 2012 to 2014, that were identified to be from patients of infective endocarditis. Species isolated were *Streptococcus viridans* (20%), *Streptococcus mitis* (15.3%), *Streptococcus bovis* (11.3%), *Streptococcus*

sanguis (7.3%), *Streptococcus mutans* (4%), *Gemella* species (2.6%), *Streptococcus oralis* (2%), *Streptococcus equinus* (2%), *Streptococcus sanguinis* (1.3%), *Streptococcus salivarius* (1.3%), *Streptococcus adjacens* (0.6%), *Aerococcus viridans* (1.3%) and *Abiotrophia defectiva* (0.6%). When categorized according to the CLSI (clinical laboratory standards institute) breakpoints, 1 isolate was found to be resistant to penicillin and 35 were intermediate resistant (23.3%). Majority of which were *Streptococcus bovis* (n=6). MIC 50 was 0.06 mcg/ml and MIC 90 was 0.25 mcg/ml.

Conclusion: Higher MICs to penicillin have been observed in patients with endocarditis. In such patients combination therapy is advised. High rates of penicillin resistance may contribute to high morbidity and mortality. In such cases early diagnosis and intervention is necessary for better outcomes.

Keywords: Infective endocarditis, *Streptococcus viridans*, Penicillin

10.28 IDENTIFICATION OF RECENT INFECTIONS AMONGST NEWLY DIAGNOSED TREATMENT NAÏVE PATIENTS WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV)-1 IN PAKISTAN

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Introduction: The prevalence of HIV has steadily risen in Pakistan, reaching an estimated 87,000 in 2012. In high risk groups it has

reached significant proportions particularly in people who inject drugs (PWID), men who have sex with men (MSM), and Hijra Sex Workers (HSWs, TGs). However, there is little information regarding early infection rates as most cases are diagnosed at an advanced stage. Here, we seek to determine the incidence of recent as compared with late infections in newly diagnosed HIV positive individuals.

Methods: This is a cross-sectional study with consecutive sampling involving PWIDs, and recruited with informed consent by Bridge Consultant Foundation (BCF). Newly HIV diagnosed, PWIDs and HSWs (according to national guidelines) registered with Community Home Based Care of people living with HIV program (CHBC) in Karachi. Blood was drawn, serum isolated and an ELISA based in Vitro quantitative limiting antigen (LAG) avidity enzyme immunoassay was performed using Maxim HIV - 1 Limiting Antigen Avidity EIA kit to distinguish between recent and long term HIV infections.

Results: Of the 161 study subjects there were 103 PWID cases (28.75 ± 6.96) and there were 58 TG cases (30.14 ± 7.93). Overall Age mean (29.25 ± 7.36). Avidity results showed that 135 samples had long-term infections, 24 had recent infections. Categorically, recent infections comprised 18 PWID (17.5%) and 6 TG (10.3%) cases whilst the remaining were classified as long-term infections even though all were newly diagnosed cases.

Conclusions: These data demonstrate that approximately 10-17% were recent infections it indicates that greater than 80% of the HIV positive cases had been diagnosed late. This brings to light the importance of improved monitoring systems for HIV in Pakistan

Keywords: HIV, Human Immunodeficiency Virus, Treatment Incidence ELISA

10.30 GENE EXPRESSION OF EFFLUX PUMPS IS INCREASED IN EXTENSIVELY DRUG RESISTANT ISOLATES OF MYCOBACTERIUM TUBERCULOSIS

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Introduction: Extensively drug-resistant tuberculosis (XDR-TB) is defined as tuberculosis (TB) caused by Mycobacterium tuberculosis (MTB) strains that are multi-drug resistant (MDR) and also resistant to a fluoroquinolone and to one injectable aminoglycoside or capreomycin. Whilst resistance in MTB has been associated with single nucleotide polymorphisms (SNPs), efflux pumps are thought to play a role in conferring resistance to MTB but little is known about them.

Methods: We studied XDR MTB (n=10) strains characterized by Whole Genome Sequencing (WGS), (<http://www.ebi.ac.uk/ena/data/view/PRJEB7798>). Phenotypic susceptibility testing was performed by MGIT 960 method. All XDR MTB strains were resistant to at least 7 drugs whilst one XDR MTB strain, X54 was resistant to all 10 drugs tested including, Streptomycin, Capreomycin and Ethambutol. The mRNA expression of genes Rv0194 was determined in XDR MTB strains as compared with the ATCC reference strain, H37Rv and sensitive MTB strains using the Relative quantification method normalized to 16S rRNA.

Results: The mRNA expression analysis showed, significantly higher ($p=0.0070$) transcriptional upregulation of Rv0194 from 70.77 to 736.73 in ten XDR MTB strains as

compared with 21.71 to 170.66 in nine sensitive MTB strains

Conclusion: The differences between XDR and sensitive isolates suggest that quantifying the expression levels of MTB efflux pump genes may be helpful to diagnose XDR-TB and decide whether combining efflux pump inhibitors to anti-tubercular drugs would be effective to treat resistant TB

Keywords: XDR, TB, Efflux pump

10.32 ALTERNATE EFFLUX PUMP MECHANISM MAY CONTRIBUTE TO DRUG RESISTANCE IN EXTENSIVELY DRUG RESISTANT (XDR) ISOLATES OF MYCOBACTERIUM TUBERCULOSIS

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Background: Extensively drug-resistant tuberculosis (XDR-TB) is caused by Mycobacterium tuberculosis (MTB) strains resistant to at least rifampicin and isoniazid, a fluoroquinolone and an injectable second-line drug. Resistance to anti-tuberculous drugs is mostly associated with single nucleotide polymorphisms (SNPs) in particular genes. However, efflux pumps are also thought to play a role and we investigated genomic variations in these amongst XDR-TB isolates.

Methods: Whole genome sequencing (WGS) data of XDR-TB strains (n=37) was analysed. Raw sequence files were examined for non-

synonymous (nsSNPs) mutations in the efflux pump genes *rra*, Rv1217-Rv1218, Rv1258 and Rv1634 using KvarQ software and compared with H37Rv reference genome.

Results: We found 5 (13.5%) of XDR-TB strains harbored nsSNPs (histidine to aspartic acid) at position 3273138 in the *rra* efflux pump gene. These 5 strains were phenotypically resistant to kanamycin, amikacin, rifampicin, ethambutol and ofloxacin, but were variably resistant to capreomycin and streptomycin. All five XDR-TB strains with nsSNPs in *rra* also had nsSNP in Rv1218c, but were variably wild type for Rv1217c, Rv1258 and Rv1634 efflux pump genes.

Conclusion: The understanding of the mechanism of efflux pump genes and their role in drug resistance, will enable the identification of new drug targets and development of new drug regimens to counteract the drug efflux mechanism.

Keywords: XDR, TB, Efflux pump

10.33

INCREASED IL6 AND CXCL10 IN SEVERE DENGUE INFECTION

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Introduction: Dengue virus infection is a major public health problem. Patient with Dengue may be asymptomatic or present with dengue fever (DF), dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS). T and B cell activation and cytokines and chemokines including IL6, TNF α CXCL10 are shown to be

critical in severe dengue infection as they alter normal fluid barrier function of endothelium and cause plasma leakage. Therefore, in this study we aim to investigate the association of IL6, TNF α and CXCL10 with dengue disease severity.

Methods: Patients with Dengue (n=58) and healthy controls (n=33) were recruited. Dengue virus infection was confirmed by Dengue PCR. Patients with dengue were further subdivided into those with dengue fever (DF, n=39), dengue hemorrhagic fever (DHF, n=15) and dengue shock syndrome (DSS, n=4). Sera was separated and subjected to ELISA for IL6, TNF α and CXCL10. Mann Whitney U test was used to compare the two groups.

Results: TNF α (p \leq 0.001) and CXCL10 (p \leq 0.001) levels were increased in patients with dengue as compared to EC. When dengue patients were sub-grouped according to severity, CXCL10 was shown to be increased in DHF as compared to DF (p=0.046) and IL6 was shown to be increased in DSS as compared to DHF (p=0.044).

Conclusion: The data presented in this study indicates that CXCL10 and IL-6 may be associated with the increase in disease severity in dengue virus infection.

Keywords: Dengue, IL6, CXCL10

10.34

PRIMARY AMOEBIC MENINGOENCEPHALITIS CASE FROM KARACHI, PAKISTAN AND ITS ASSOCIATION WITH PRESENCE OF NAEGLERIA FOWLERI IN PUBLIC WATER SUPPLY SYSTEM

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Introduction: Naegleria fowleri (N. fowleri), a free living amoeba causes acute fulminant fatal primary amoebic meningoencephalitis (PAM) in adults and children with history of exposure to aquatic activities. In recent years increasing number of cases of PAM has been reported from Karachi where majority of the cases had no history of aquatic recreational activities suggesting presence of N. fowleri in domestic water supply.

Method: Water samples were cultured for free-living amoeba and plates were monitored for amoeba growth every day. Positive water culture tested using real-time PCR for confirmation.

Results: In this study the presence of N. fowleri was demonstrated in the water tank of residential apartment and nearby mosque in the same catchment areas from where a clinical case was reported. We report presence of N. fowleri in domestic water supply and neighboring mosque from one of the confirmed case of fatal PAM.

Conclusion: Patient had no history of aquatic activity confirming that he caught this infection during bathing or ritual nasal cleansing from domestic water supply.

Keywords: PAM, Naegleria fowleri, water

10.35

POLYMORPHISMS IN PLASMODIUM FALCIPARUM PFATPASE6 GENE AFTER INTRODUCTION OF ARTEMISININ BASED COMBINATION THERAPY

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Introduction: Plasmodium falciparum malaria is one of the most important causes of mortality in the world. Artemisinin-based combination therapy (ACT) is now the best treatment option in endemic areas. There is a hypothesis that artemisnins act by inhibiting PfATP6. Important recent studies support the involvement of PfATPase6 in mechanism of resistance to ACT. The aim of this study is to monitor polymorphism in P. falciparum PfATPase6 gene after the introduction of combination therapy.

Methods: Blood samples from 127 patients with blood slide confirmed P.falciparum mono-infections were collected post ACT introduction 2009-2010. DNA was extracted using commercially available extraction kit. Single nucleotide polymorphisms in the PfATPase6 gene determined using PCR and sequencing based methods.

Results: The resistance associated mutations was observed in several loci in PfATPase6 gene. Single nucleotide polymorphisms were observed at position N683K (3%), N569K (5%), A630S (1%). Investigating molecular markers like PfATPase6 has allowed monitoring of parasite response to ACT therapy.

Conclusion: It is assumed that SNPs in PfATPase6 gene could provide early warning signs for emergence of ACT resistance

Keywords: p.falciparum, ACT, Pfatpase6 gene

10.36

K13-PROPELLER POLYMORPHISMS IN PLASMODIUM FALCIPARUM PARASITES FROM SOUTHERN PAKISTAN

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Introduction: Mutations in the Plasmodium falciparum K13-propeller domain have recently been shown to be important determinants of artemisinin resistance in Southeast Asia and Africa. For K13-propeller polymorphisms to be used universally as a tool for tracking artemisinin resistance and translated into a public health tool, global validation of these markers must be conducted. The aim of this study is to monitor polymorphism in P. falciparum K13-propeller domain after the introduction of combination therapy.

Methods: Blood samples from 15 patients with blood slide confirmed P.falciparum mono-infections were collected post ACT introduction 2010. DNA was extracted using commercially available extraction kit. Single nucleotide polymorphisms in the K13-propeller domain were determined using PCR and sequencing based methods. Sequences were assembled using DNA STAR software and data were analyzed using Mega 6 program.

Results: limited variability within the k13 gene in P. falciparum isolates was identified. None of the polymorphisms associated with artemisinin resistance in Southeast Asia was detected in the 15 P. falciparum isolates. Limited polymorphism is due to small sample size.

Conclusion: Study is ongoing we expect to observe polymorphism at position C580Y, R539T or Y493H in isolates which are exposed to ACT.

Keywords: K13-propeller, plasmodium falciparum, ACT

10.37

THE USE OF LINE PROBE ASSAY FOR IDENTIFICATION OF NON TUBERCULOUS MYCOBACTERIA-A PRELIMINARY REPORT

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Introduction: Conventional tests for the identification of Non-tuberculous Mycobacteria (NTM) require time, expertise and multiple levels of quality control in the laboratory. Results of conventional tests do not achieve 100% identification of strains. Currently NTM identification is recommended by molecular probe technology as appropriate therapy is dependent on correct speciation. We have used the Line Probe Assay (LiPA) for identification of mycobacterial strains and evaluated the turnaround time (TAT) and accuracy.

Objective: To evaluate turnaround time and accuracy of LiPA for identification of NTM in the laboratory. *Method:* Mycobacterial strains isolated from clinical samples were identified by using LiPA (Genotype Mycobacterium CM) from April 2015 to June 2016. For Quality control reference strains of M.kansasii (ATCC 12478), M.avium, M.fortuitum (ATCC 6841) and M.abscessus (ATCC 35751) were used. TAT was determined for each specimen as time from growth of NTM on solid medium to complete identification. Accuracy was defined as the correct number of control organism identified by LiPA.

Results: From April 2015 to June 2016, 194 NTM and 19 Quality control organisms were

tested with Line probe Assay. Eighty five percent (n=165) NTM were identified to species level while 14% (n=29) were not identified. All Quality control organisms were correctly identified showing an accuracy of 100% for the identified species types. TAT of LiPA for identification was 7-8 hours.

Conclusion: LPA is a fast and reliable method for identification of NTM. This technology should be applied for earlier identification of clinically important NTM isolates for timely institution of appropriate treatment.

Keywords: Non-tuberculous mycobactarie, Identification, Molecular probe

10.38

CLINICAL EXPERIENCE WITH PULMONARY NOCARDIOSIS AND ITS COMPARATIVE ANALYSIS IN IMMUNOCOMPROMISED AND IMMUNOCOMPETENT PATIENTS

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Background and Aims: Nocardia is genus of branching gram positive bacteria that usually affects immuno-compromised patients, but can also affect immuno competent patients. We wanted to study the clinically outcome differences caused by Pulmonary Nocardiosis in these both groups

Methods: It was a retrospective study. Patient admitted with pulmonary nocardiosis from January 2004 to December 2015 were reviewed. Total 56 patient were identified. Out of these 12 patients' record had missing data so those were excluded. At end 44 patients' files were reviewed. Those patient who were having malignancy, had undergone transplantation, had

immunodeficiency, were using immunosuppressants or was on steroid for past 2 months were considered immunocompromised. Diabetes mellitus and chronic renal failure were not considered immunocompromised states.

Results: Mean age of patients were 56 ± 16 years. 31 of them were males. 22 of them were immunocompromised patients. Overall most common presenting symptom was fever (82%), most common chest xray finding was Pleural effusion(48%). Mean TLC count was $12000 \pm 6000/\text{mm}^3$ while 53% had normal TLC at presentation. Mean Serum sodium at presentation was $133 \pm 5 \text{meq/dl}$. 70% of patients had hyponatremia at presentaion.

Microbiological data showed that all isolates were susceptible to Amikacin while Susceptibility was seen in 86% isolates for Cotrimoxazole. Ciprofloxacin and ampicillin were least susceptible drugs. There was no difference in clinical symptoms between two groups. Radiologically, Pleural effusion was most common presentation in immunocomprised(63% vs 33%) while consolidation was more prevalent in immunocompetent patients. There was no significant 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 significant 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 common findings. There was no significant difference among immunocompetent and immunocomporomised groups.

Keywords: Nocardiosis, Immunity, Hyponatremia

10.39

MOLECULAR DIAGNOSIS OF INFLUENZA VIRUS AT AKUH

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Background: Influenza is a viral infection that affects mainly the upper respiratory tract; nose, throat, and, occasionally, lower respiratory tract; the lungs. Infection usually lasts for about a week, and is characterized by sudden onset of high fever, aching muscles, headache and severe malaise, non-productive cough, sore throat and rhinitis. Three distinct Influenza viruses exist; Influenza-A which causes the typical syndrome, Influenza-B is similar clinically and Influenza-C causes an afebrile common cold-like syndrome. The Molecular Pathology laboratory at the Aga Khan University Hospital (AKUH) performs Reverse-Transcription Polymerase chain reaction (RT-PCR) based diagnostic test for detection of Influenza-A, Influenza-B and Influenza-A sub-type H1N1

Objective: To determine the rate of Influenza positive samples during 2015 and 2016

Methodology: Nasopharyngeal swabs from patients suspected with influenza were received and tested at the Section of Molecular Pathology, AKUH. RNA was extracted from nasopharyngeal swabs and tested for the presence of Influenza A, B and H1N1 RNA using the Real Star Influenza S&T RT-PCR Kit 2.0. The test consists of three processes in a single tube assay; Reverse Transcription of target RNA to generate cDNA, PCR amplification of target cDNA and Internal Control and simultaneous detection of PCR amplicons by fluorescent dye labeled probes

Results: In total, 76 samples were tested positive for Influenza virus from January 2015 till June

2016. In 2015, the number of samples tested positive for Influenza-A were 03, Influenza-B were 02 whereas 24 samples were tested positive for Influenza-A sub-type H1N1. In 2016, a similar trend was observed where the number of samples tested positive for Influenza-A was 15, Influenza-B was 05 and Influenza-A sub-type H1N1 was 27

Conclusion: Molecular based diagnostic techniques provide high sensitivity, rapid detection and allow early intervention and improve patient management and outcome.

Keywords: Influenza-A, Influenza-B, H1N1

10.40

DETECTION OF IGG ANTIBODY IN LYMPHOCYTE SUPERNATANT AS A DIAGNOSTIC BIOMARKER OF TB IN PAKISTANI CHILDREN

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Background: Mycobacterial Antibody Secreting Cells (MASCs) are terminally differentiated B-cells that release pathogen-specific antibodies in response to recent infection. In the field of vaccinology, ASCs have been found circulating in blood as early as 7 days after vaccination. We aim to evaluate the yield of the MASC assay in children confirmed to have pulmonary TB.

Method: Among a cohort of children (age 1-14yrs) being evaluated for pulmonary TB, we included children with Mycobacterium tuberculosis (MTB) detected by GeneXpert. 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 1 µg /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: Eight children with a median age of 12.5 yrs (IQR: 3.825) had GeneXpert positive respiratory samples. MASC results from six (75%) children had IgG levels greater than 0.35 O.D. The median O.D of IgG was highest at 72 hrs [Median 0.878; IQR:1.475], followed by 48 hrs [Median 0.679; IQR:1.535], and 24 hrs [Median; 0.575 IQR: 0.281].

Conclusion: This assay holds promise as a diagnostic biomarker for TB and may aid in diagnosis of childhood TB.

Keywords: TB, IgG, B cells

10.41 UNCOVERING THE TARGETS OF AMIODARONE IN ACANTHAMOEBA CASTELLANII: BIOINFORMATICS 3DMODELLING AND EXPERIMENTATION

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Background: Ion channels coupled to cell membrane receptors are seen in many multicellular eukaryotes to execute several metabolic and survival functions. Their role in the biology of the unicellular pathogenic eukaryotes, like *Naegleria fowleri* and *Acanthamoeba* specie has emerged recently.

Objective: Amiodarone, that binds K⁺ ion channels is being reported to be amoebicidal in pathogenic eukaryotes; therefore we hypothesized the presence of a homologous targets in *Acanthamoeba* spp.

Methods: Methodologies used were, bioinformatics analysis, structure activity relationship, ligand binding prediction and growth assays. We show the evidence for the presence of homology in targets of Amiodarone in humans and *Acanthamoeba*. Growth assays with Amiodarone is expected to show growth inhibitory effects.

Conclusion: Exploration of the targets of Amiodarone is expected to not only design better drugs for the treatment of diseases caused by *Acanthamoeba* but also would improve our understanding of the evolution of K⁺ ion channels coupled to receptors

Keywords: *Acanthamoeba*, Amiodarone, Protein homology

10.42 HOMOLOGY OF HUMAN TARGETS OF LOPERAMIDE WITH TARGETS IN PROTIST PATHOGENS: FEATURING NAEGLERIA FOWLERI AND ACANTHAMOEBA CASTELLANII

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Background: Loperamide is an anti-diarrheal drug prescribed for non-infectious diarrhoea in clinical practice. The drug is an opioid receptor agonist, calcium (Ca²⁺) channel blocker and calmodulin (CaM) inhibitor on human cells. It has been reported to exert anti-amoebic effects against pathogenic strains of *Naegleria fowleri* and *Acanthamoeba castellanii*.

Objective: The precise cellular targets and the pattern of cell death induced by loperamide in

the above protist pathogens remain to be established.

Methods: Bioinformatics, 3D structural modelling, ligand binding predictions and experimental assays, were used in this study.

Results: Bioinformatics shows that *N. fowleri* and *A. castellanii* do not express the opioid receptors, but do express near identical type of Ca channels and CaM, that are the known targets of loperamide in humans. 3D structural models showed homology to human targets of loperamide with a ~100% confidence. Ligand binding prediction showed identical residues for binding the ligand. By using naloxone, we show that loperamide effects are not mediated via μ -or other opioid receptors. The growth assays show that loperamide causes amoeba killings at different doses and in combinations with other Ca²⁺-CaM inhibitors. Imaging with Annexin V, Acridine orange and Propidium iodide showed apoptosis in *A. castellanii* at a dose of 100 μ g/ml and necrosis at higher doses of 250 μ g/ml.

Conclusion: Bioinformatics computational tools offer a real tool to explore novel therapeutic targets in pathogenic eukaryotes. Given that the non-opioid targets of loperamide are lethal to *N. fowleri* and *A. castellanii*, and it is an FDA approved drug, we propose loperamide and its structural analogs as potential anti-protist agents.

Keywords: anti-protist agents, Therapeutic targets in pathogenic eukaryotes, Ca channels and CaM

Miscellaneous

11.1 WHISTLE BLOWING: A NEED IN NURSING PROFESSIONALS

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Introduction: In recent years, there have been many researchers indicating the need of whistleblowing by nurses against increased wrongdoings and high incidents of poor care. Whistleblowing is an act of reporting incidents internally or externally that are unethical and illegal in terms of patient care. In UK and USA survey, it is estimated that 90 percent of the nurses have observed the incident of poor care but more than 50 percent have not blown the whistle against such wrongdoings. In Pakistan, literature and clinical experiences have also indicated the increased rate of wrongdoings which are underreported because nurses have failed to raise their voices. The purpose of this paper is to bring an insight about the causes that restrict nurses from whistleblowing, its potential consequences and strategies to promote the act of whistleblowing in nursing profession.

Methods: Three international online electronic databases were interrogated, between January 1, 2005 to December, 2012, to classify studies exploring the causes that restrict nurses from whistleblowing in LMIC. Of 1000 titles screened, 72 potentially relevant abstracts were obtained. Out of 72 abstracts, 50 abstracts were shortlisted. Full text of 50 articles was reviewed using data extraction sheet. A total of 15 full text papers were included in the final analysis.

Results: Systematic search and clinical experiences have shown that the most reported reasons that hold back nurses from whistleblowing are unbearable physical, emotional, professional and personal repercussions from which many nurses have suffered during previous episodes of whistleblowing. Consequently, silent organizational culture, poor patient health outcomes and loss of organization status have been identified as its potential consequences. To

address these consequences, strategies at individual, organizational and educational level need to be made so to promote the act of whistleblowing and to decrease the rate of poor care incidents. Moreover, in Pakistan this concept is less studied yet the need of the application of this concept in our context is much greater.

Conclusion: Health care settings in Pakistan should introduce some strategies so as to increase awareness about whistle blowing and encourage nurses to be whistle blowers against wrongdoings

Keywords: Nursing, whistle blowing, wrongdoings

11.3 AUDIT OF TEMPERATURE MONITORING AND HYPOTHERMIA IN PATIENTS RECEIVING ANESTHESIA IN A TERTIARY CARE HOSPITAL

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Introduction: Temperature monitoring is currently the standard of care in anesthesia [1]. It is imperative that temperature is measured during induction and maintenance of anesthesia [1,2]. Perioperative hypothermia is defined as a core body temperature <36°C at any moment in the perioperative period[3]

Methods: We conducted an audit of our anesthesia practice. We intended to measure our current practice against 'gold standard' laid down by guidelines from professional organizations [1,2]. Our Department carries out approximately 1200 cases per month. Based on that quantity, our sample size was 100 cases, that being a close approximation of our practices.

Results: Our survey showed that 91.9% (91) of our patients were hypothermic (<36.0 degree Celsius). The commonest technique for monitoring temperature was nasopharyngeal probe and it was used in 79.8 % (79) of cases.

One or two forms of patient warming devices were used in all cases 100% (99).

Highest group of hypothermic patients were found to be in the range :36.1 to 36.5 degree Celsius group. 12.09% (11) patients were found to have temperatures below 35.6 degree Celsius. Patients in the age group (21 to 40 years) were found to have highest drop in temperature. All patients above age of 60 years were found to suffer with hypothermia.

Conclusion: Hypothermia afflicts universally and nearly all patient receiving anesthesia in the Dept. of Anaesthesiology at our set up. This holds true despite taking measures to maintain normo-thermia and using patient warming devices. This is a worrying finding. This suggests a structural and logistical problem with the way our Operation Theatres are constructed and how the ambient temperature is controlled centrally.

Keywords: hypothermia, theatres, anaesthesia

11.4

IMPLEMENTATION OF DISEASE-BASED MEDICATION STANDARD ORDER SETS IN EMERGENCY DEPARTMENT (ED), TERTIARY CARE HOSPITAL, PAKISTAN- AN EXCELLENT WAY TO ACCESS MEDICATIONS WITH ASSURANCE OF PATIENT SAFETY AND IN AN EFFICIENT TIME

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Introduction: ED is a critical area all over the world & requires quick response from all health care professionals. Standard Order Sets (SOS) is a standardized list of orders for a specific

diagnosis. Order sets are tools that can improve utilization, efficiency of order entry & help to overcome potential medication errors.

Objective: To provide Safe & time efficient care to critical patients.

Methodology: Eight pre-selected mnemonics with therapeutic dose ranges as SOS were defined in CPOE system after mutual discussion with EDPHT and physicians which is mostly used regimen in ED. Pilot was started from 8th July to 8th October 2013. Physicians entered all pre-defined sets. Medicines as pre-filled sets are placed in pharmacy & PHT dispense these sets rather than filling them one by one after processing the order.

Results: Paired t-test had been used with estimated confidence interval (C.I) for mean differences (with 95%). We had found highly significant time reduction in medication entry & dispensing time of individual medication entry & dispensing respectively. 0 of 8 selected regimen, from physician end over all mean difference was found to be 47.3sec, (C.I 44.8-49.7), P value <0.001. While from pharmacy end it was found to be 49.5 sec, (C.I 46.9-52), P value <0.001.

Conclusion: SOS is an excellent way to ensure safe & time efficient medication administration to critically ill patients. In this study we found highly significant results which suggested that the use of SOS should be routinely employed.

Keywords: Medication standard order sets, Patient safety and efficient time, Emergency department (ED).

11.6

THE USE OF 3% HYPER TONIC SALINE (HTS) IN THE EMERGENCY DEPARTMENT (ED) PEDIATRIC PATIENTS WITH SEVERE BLUNT TRAUMATIC HEAD INJURY - A COLLABORATIVE PILOT STUDY

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Objectives: The study aim to investigate the association of the Glasgow Coma Scale and the Length of stay in pediatric patients who presented with severe traumatic head injury and resuscitated with 3% HTS in the ED.

Methods: Cross-sectional Study, conducted at Aga Khan University Hospital, a level 1 trauma center from 2008 to 2013. Data was collected using convenient sampling technique. The sample size of the study was calculated by using prevalence of traumatic brain injury for children age 2-16 years from prior study (PakNEDs, AKU data) i.e.12%. With 95% level of confidence.

Results: Based on pilot, Out of 199 we had used 3% HTS in 80 (40.2%) patients. 60 (74 %) were male with average age 5 years, average LOS of this group were found to be 5.6 Hours in ED with initial GCS 2-15, (average 10.83) & Average LOS at the time of discharged from ED/ inpatients wards were 4.46 days with GCS 14. Most frequent surgical interventions in this group was craniotomy i-e 35%, seizure was found in 6 % of patients.

Conclusion: Based on retrospective analysis, If these results would be confirmed in a prospective, randomized case control study, The 3% HTS may become the agent of choice for the management of severe blunt traumatic head injury. This will help in disseminating the findings in the health care centers across

Pakistan in the emergency management of the pediatric traumatic brain injuries.

Keywords: 3% hypertonic saline (HTS), Severe blunt traumatic head injury Severe blunt traumatic head injury, Emergency department (ED) Pediatric patients.

11.7

ENHANCING NURSES' AWARENESS ABOUT MEDICATION ERRORS/NEAR MISSES THROUGH PHARMACIST LED TRAINING AND AWARENESS SESSIONS

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Objective: Enhancing awareness about medication errors/near misses through sessions for Emergency department nurses by Emergency department (ED) pharmacist.

Background: 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, it's necessary to develop knowledge of the medication-use process. An educational session by Emergency Pharmacist to all RNs is one of the proactive approaches to reduce medication error.

Methodology: After mutual collaboration between ED pharmacist & ED Quality Improvement Committee, pharmacy has provided medication error prevention sessions to all ED medications RNs quarterly in 2014 with 20 participants per session, delivered detailed understanding of 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 and voluntary reporting of near misses /medication error. RESULT: In each session, participants were evaluated by pre and posttest, with most scoring 80% and above in the quizzes from average baseline 47% showing significant understanding of the topic.

Conclusion: We've concluded that these sessions are serving as a good learning opportunity to enhancing knowledge about medication errors & 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, Medication nurses, Emergency department

11.8

AN EXPERIENCE OF MANAGING HIGH INFLUX OF PATIENTS AFFECTED BY INTENSE HEAT WAVE AT THE EMERGENCY DEPARTMENT OF A TERTIARY CARE TEACHING HOSPITAL IN PAKISTAN- A WAKE UP CALL FOR FUTURE CHALLENGES.

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Objectives: To share an experience of pharmacist's participation in managing high patient influx related to intense heat wave at the

Emergency Department (ED). Background High mortality rates have been reported in heat waves all around world. In 2015, 2000 deaths reported in Pakistan due to heat wave with 1360 deaths from Karachi. In June 2015, > 400 patients were seen in ED triage with waiting of 80 patients. Hospital occupancy between June 22nd and 23rd was 94%. 12 patients were intubated in a single night. It was challenging situation for Pharmacy to manage all those patients with limited resources and staffing.

Methodology: To manage high influx of patients, pharmacy had ensured uninterrupted supply of medications even when stocks in local markets were dried out. These include bulk stocks of large volume parenteral like lactated ringer solution, 0.9 % normal saline drips, Rehydration salts, intravenous electrolyte admixtures, antibiotics, anesthetics for intubation and other supportive medicines.

Results: We retrieved 125 cases of heat related emergencies from 21st June till 1st July 2015 for review. Out of 125, 73 were male and 52 were female (n=125). Most affected age group was in between 60 to 70 years (40%) while 30 intubations were carried out. Around 23% of patients had electrolyte abnormalities with hyponatremia and hypokalemia were significant ones.

Conclusion: Role of pharmacist is remarkable in terms of flawless provision of all necessary medicines. Pharmacy profession should take a lead in developing plan to deal with such mass casualties in upcoming years.

Keywords: Intense Heat Wave, Emergency Department (ED), Emergency Department Pharmacists

11.9 TELEPHONIC PATIENT FOLLOW UPS BY OUT PATIENT DEPARTMENT PHARMACY – A PILOT STUDY TO ASSESS PATIENT’S SATISFACTION LEVEL TO THE MEDICATION COUNSELING PROVIDED

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Backgrounds: Aim of this project is to assess post counseling response of patients at ambulatory care pharmacy of tertiary care hospital.

Purpose: In modern years, pharmacist’s role has expanded from dispensing medications and pharmacists have opportunity to minimize the drug related problems. Patients on high alert medications/ poly-pharmacy are particularly at risk for committing medication related errors. Unfortunately in developing countries, pharmacist’s role in such an important sector is underutilized.

Methods: In pilot, those patients on polypharmacy/ high alert medications who visited ambulatory Pharmacy at Aga Khan University Hospital, Karachi were selected. From 20th to 31st December 2014, pharmacist made phone calls to preselected patients after taking their consent. Pharmacist asked about their satisfaction on counseling and services provided during visit and counseled patients. Data collection sheet includes patient’s demographic information, their responses to call and satisfaction to counseling provided during visit.

Results: Total 115 patients were selected on aforesaid criteria from an average of 60 patient visits/day at pharmacy. Eighty one (71%) patients responded to phone calls directly

compared to 29% times where patients’ attendants responded on patients’ behalf. Almost 71(88%) respondents were satisfied to counseling provided to them. All respondents 115 (100%) appreciated this effort.

Conclusions: Patient’s satisfaction response was remarkable. Further we are planning to take follow ups of the same category from their initial visits. This initiative would not only enhance the role of pharmacist in society as health awareness provider but also improves patient’s adherence to therapy.

Keywords: Telephonic Patient Follow Ups, Patient’s Satisfaction, Medication Counseling

11.10 FACTORS ASSOCIATED IN DELAYED ADMINISTRATION OF ANALGESIA IN EMERGENCY DEPARTMENT: A SYSTEMATIC LITERATURE REVIEW

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Background: Pain is the most common complain for the patients who visited to the emergency department (ED), however delaying in the pain management in this setting is very common.

Objective: To estimate the factors associated in delaying administration of analgesia in ED for adult patients.

Methods: This paper is a critical appraisal of evidence based practice in factors which delayed the pain management and administration of analgesia in ED. The literature search was carried out through several electronic databases like Cumulative Index to Nursing and Allied Health (CINAHL), Pub Med, Mosby’s Nursing Consult, Eastern Mediterranean Health, Journal Consult, Pakistan Journal of Medical Sciences,

Medline, Up-To-Date, and Science Direct. The searched articles were only those published in the English language and published during 2003 – 2013. Relevant clinical studies and review articles were found using the terms includes “factors”, “analgesia”, “emergency department”, “factors associated in delayed administration of analgesia”, “delayed pain management in ED”, “delayed pain management in adult”, “quality of care”, and “analgesia management in ED”. A comprehensive search was also conducted in Google scholar using the same key words as mentioned above.

Results: Out of 15 relevant studies reported different factors which delayed the analgesic administration in the ED. Data suggest that overcrowding, patient-nurse communication, patient-physician communication relationship, poor pain assessment by ED nurses, patients not ask for pain medication, inadequate analgesia due to lack of education, delays in treatment from triage, and patient’s high expectations for pain relief.

Conclusion: Pain is a subjective feeling and the most frequent complain in the ED patients. There are several factors which hinder to manage pain in the emergency department such as overcrowding in the ED and incompetency of the nurses to assess pain is the most frequent factor.

Keywords: emergency department, delay pain management, quality of care

11.11

TP53 PROTEIN OVEREXPRESSION IN ORAL SQUAMOUS CELL CARCINOMA (OSCC): CORRELATION WITH HISTOLOGIC VARIABLES AND 5 YEARS SURVIVAL IN PAKISTANI PATIENTS

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Introduction and objective: Alteration of TP53 gene in oral squamous cell carcinoma (OSCC) is believed to be associated with reduced overall survival (OS), the 5 year prognosis in our study and the disease-free survival (DFS). The aim of this study is to determine whether TP53 protein over expression in OSCC is a prognostic indicator of survival in Pakistani cancer patients along with its correlation with risk factors including smoking, chewing habits, histological variables like grade & stage of the tumor in a high risk population.

Methods: A total of 140 patients of OSCC were part of our study. TP53 protein over expression was investigated by means of immunohistochemistry.

Results and Discussion: Overexpression of p53 protein was observed in 94 patients (67%) using a threshold of 10% stained tumor nuclei. Patients with p53 negative tumors had improved OS when compared with patients with p53 positive tumors. This difference was statistically significant ($p=0.036$) in univariate Cox regression analysis however, it lost its worth in the multivariate analysis.

Conclusion: This work supports that patients with p53 overexpression had a significantly poor overall survival compared to p53 negative patients. However, p53 overexpression was not associated with patient’s disease free survival.

Keywords: oral squamous cell carcinoma, TP53, Overexpression

11.14

ADAPTION AND VALIDATION OF VOICE HANDICAP INDEX - 10 IN URDU

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Introduction: The Voice Handicap Index (VHI) is a self-assessing instrument which is valid for assessing level of handicap associated with dysphonia. Its shortened version, VHI-10, is accepted as a powerful representation of the VHI, and provides researchers and clinicians with a valuable outcome measure for voice disorders.

Objective: To translate voice handicap index-10 in Urdu language and validate it.

Method: Urdu version of VHI-10 was designed following WHO guidelines and was completed by 100 individuals, including 50 patients with hoarseness (case) and 50 individuals without any voice issues (control). All individuals were asked to self-assess the severity of hoarseness on a 4-point scale (Normal, mild, moderate or severe). Prospective instrument validation was performed.

Results: The mean age of the case group was 52 (SD=15.33) including 41 males and 9 females and for control group it was 46.48 (SD= 16.96) including 39 males and 11 females. In the case group there were 7 (14%) cases of vocal cord paralysis, 21 cases (42%) of carcinoma larynx and 22 (44%) cases of vocal cord nodules. Significant difference was seen between the mean scores of the case group (Mean=22.94, SD=5.70) and control group (Mean=0.12, SD=0.38). Reliability demonstrated to Cronbach's alpha of 0.961 and significant correlation was found between VHI-10 total score and patient's self-related dysphonic severity ($r=0.984$; $P<.001$). 23 patients filled the questionnaire twice before receiving treatment

and Pearson's correlation test showed high test-retest reliability ($r=0.87$; $P<.001$). The total postoperative scores of VHI-10 in 22 patients (Mean=11.91, SD=10.54) were lower than the preoperative scores (Mean=24.23, SD=4.90) and the difference was significant ($P<.001$).

Conclusion: The translated Urdu version of VHI - 10 is a valid and a reliable tool and it can be used to as an outcome measurement tool in Urdu speaking population

Keywords: Voice handicap index, Outcome measurement tool, Dysphonia

11.16

ACCURACY AND ADEQUACY OF PRE-OPERATIVE BRACKETING WIRE LOCALIZATION FOR THERAPEUTIC EXCISION OF MALIGNANT BREAST LESIONS AND IN ACHIEVING TUMOR FREE MARGINS

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Objectives: To determine the accuracy and adequacy of pre-operative bracketing wire localization i.e. using 2 or more needles, for therapeutic excision of non-palpable malignant breast lesions.

Methods: Retrospective review of records of patients who underwent bracketing for malignant breast lesions at AKUH from 2004 to 2016.

Results: 76 patients underwent bracketing for excision of both benign and malignant breast lesions. 62 patients underwent breast conservation surgery for a diagnosis of IDC, ILC, DCIS and metaplastic carcinoma with the help of bracketing. 93.5% underwent stereotactic wire localization, 4.8% underwent sonographic localization whereas 1.6% was localized with

the help of both. Presence of radiopaque marker within the excised specimen and grossly adequate margins around the lesion guided the surgeon to decide about further margin excision. 95.2% (n=59) had negative margins of the breast lump and 2 patients (3.2%) had close margins. 1.6% (n=1) patient had invasive tumor at the margin. None of the re-excised tissue in 2 patients with close margins showed any evidence of tumor in the final report except the patient with positive margin who underwent second procedure of margin excision followed by mastectomy.

Conclusion / Recommendations: Our study showed that bracketing is a beneficial procedure in terms of achieving clear histologic margins without significant increase in the rate of re-excision. It completes the armamentarium for management of T2,T3 lesions subjected to Neoadjuvant chemotherapy. Pre-operatively, the surgeon should have a clear discussion with the radiologist about the location of needles and the accuracy should be confirmed with the help of specimen radiography during surgery.

Keywords: bracketing, malignant, breast lesions

11.17

EXPLORING THE EXPERIENCES OF THE ELDERLY PEOPLE WHO ARE BROUGHT TO LIVE IN SHELTER HOMES IN KARACHI, PAKISTAN

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Objectives: The study aimed to explore the experiences of the elderly people who are

brought to live in shelter homes in Karachi, Pakistan. It also aimed to identify the reasons which compelled the elderly people to reside in these shelter homes. This study intended to answer the following questions: 1. What circumstances and experiences compel the Pakistani elderly population to reside in shelter homes? 2. What are the challenges faced by the elderly, based on their experiences in life? 3. How do they cope with such a situation?

Methods: 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 from two different shelter homes in Karachi, Pakistan. Data was collected through a semi-structured in-depth interview. The interviews were audio recorded and transcribed precisely. The data was coded, categorized manually, and analyzed using the guidelines given by Miles and Huberman (1994).

Results: Content analysis of the data revealed five major themes: circumstances of leaving home, experiences, challenges, coping with challenges, and decision to live in a shelter home. Under the first theme, the analysis discovered that the elderly were experiencing lack of physical, psychological, emotional, and financial support from their family and children. It also indicated that migration of children for better career and employment opportunities, entrance of women into the workforce, and insensitive behavior of children, left the senior citizens neglected and helpless. In the second theme, majority of the participants experienced loneliness on the death of their spouse and children, being unmarried and childless, and also encountered helplessness due to lack of money, homelessness, dependency, and loneliness. In the theme of challenges the findings uncovered that unemployment and family disputes as the major challenge, the elderly had to face making

them dependent, distressed, helpless, and lonely resulting in both their apparently willing and forceful decision to reside in shelter homes. In theme four, the participants reported a strong faith in religion and its practices which assisted them to cope with the stressors and life challenges. The final theme revealed that relocation was the last option for them as their children did not want to keep them. Further, the informants described painful thoughts with respect to leaving their own homes where they have lived their entire life

Conclusion: The study indicated the emerging notion of institutionalization of the elderly in Karachi, Pakistan. The findings indicate the need for further investigation of the identified areas in this study through qualitative and quantitative researches. There is a dire need for increasing public awareness through the social, electronic, and print media, and providing capacity building training to Health Care Providers (HCPs) for the care of the elderly. The lobbying group can act as a catalyst in persuading the government officials for the execution of a policy on retirement, day care centers, and subsidized provision of health services for the betterment of the elderly.

Keywords: elderly, shelter homes, qualitative study

11.19

DREAM OF A CONDUCTIVE LEARNING ENVIRONMENT: ONE DREEM FOR ALL MEDICAL STUDENTS

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Objective: To assess the educational environment prevalent in the Aga Khan University Medical College (AKUMC) using the Dundee Ready Educational Environment Measure (DREEM) tool and to compare medical students' perception of educational environment on the basis of year of study, gender and pre-medical educational background.

Methods: A cross-sectional survey of students from all five years of the undergraduate medical program at AKUMC using DREEM was carried out from June 2014 till March 2015. The average scores of DREEM scales and subscales were compared on the basis of gender and educational background using Mann-Whitney U test. Kruskal Wallis test was used to compare the responses on the basis of year of study, with significance set at <0.05 .

Results: Total DREEM score of females and students with higher secondary school (HSC) background was significantly better as compared to males and students with British General Certificate of Education (GCE) background, at $p<0.0001$ and $p=0.017$ respectively. Female medical students were satisfied with the atmosphere of teaching, learning and element of social self-perception. Year-wise comparison showed significantly better DREEM scores of fourth year students.

Conclusion: The comparison of DREEM scale and sub-scale scores on the basis of year of study, gender and educational background provides valuable information to curriculum

planners and decision makers at AKUMC with regards to strengths and areas of improvement

Keywords: Dundee Ready Education Environment Measure (DREEM), learning environment, medical students

11.20

TO REVIEW THE PROVISION OF CLINICAL INFORMATION FROM ER FOR CT SCAN EXAMINATIONS

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Introduction: There is an important role of electronic request generated by primary physician of a patient with a brief description about patient history, clinical status and identification. It is helpful for technologist to perform scan and equally importance for radiologist to report properly, for further treatment of patient.

Objective: To review if adequate clinical information & data is provided by ER on electronic request form for CT head & neck, KUB, pelvis & chest.

Method and Material: We collected 100 request forms during month of March 2016 to May 2016 at Aga Khan university hospital in the department of clinical imaging. Different parameter which were included were medical record number , physician contact number , mode of transport, risk of fall, any special instruction, provisional diagnosis, allergies and contrast.

Result: According to this study 90% information are relevant to the desired imaging protocol (e.g. contrast, risk of fall, transportation, physician contact), but the information about the patient's

allergies are not mentioned. Special instructions were not provided especially there was no mention of contagious disease. Patient identification, physician contact, contrast administration were mentioned in 100%, risk of fall was mentioned in 97% , Transportation was mentioned in 98%, Brief description was mentioned in 95%, Diagnosis was mentioned in 70 % , Special instructions were mentioned in 20 % , and Allergies was mention 0% on electronic request form.

Conclusion: There are some areas of inadequacy in filling of online request by a physician. This mean there is need of more communication with doctors. This will help in proper reporting as well as improve safety for patient.

Keywords: electronic request, diagnosis, procedure

11.21

TECHNOLOGY ENHANCED LEARNING IN UNDERGRADUATE MEDICAL EDUCATION: A NEEDS-ASSESSMENT STUDY AT AGA KHAN UNIVERSITY MEDICAL COLLEGE

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Introduction: Students of today are regarded as digital natives and therefore, learn differently, with greater reliance on technology and digital resources. In undergraduate medical education, technology is used to augment and enhance curricula. The Aga Khan University has integrated some technology in learning however, less than a handful of such courses exist. For successful integration of technology across the curriculum, overall institutional readiness is

critical. Such readiness includes students' and faculty preparedness and willingness to embrace new technologies and new teaching and learning methodologies.

Objective: We conducted a needs-assessment study at Aga Khan University Medical College to identify the needs and readiness of the key stakeholders for adoption of technology enhanced learning (TEL) in the undergraduate medical education (UGME) program.

Methods: A mixed method study design involving a questionnaire, focus group discussions and in-depth key informant interviews was employed. Study participants included students from all five years of the undergraduate program, faculty members and key academic leaders. Quantitative and qualitative data sets were analyzed. *Results:* The study revealed that 96% of students reported access to laptops and were between 'moderately confident' to 'quite confident' about their own information and communication technology (ICT) literacy. Faculty members and students and both felt the need to incorporate TEL in the existing undergraduate curriculum. The key first step being appropriate faculty development.

Conclusion: Incorporating TEL in the UGME curriculum is the way forward, but it is a policy decision that needs support from academic leadership for success.

Keywords: Technology-enhanced learning, Medical Education, Curriculum

11.22 SEVERE ANAPHYLACTIC REACTION AFTER ADMINISTRATION OF ASPIRATION PROPHYLAXIS IN PREOPERATIVE PERIOD

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Introduction: We are reporting a case of severe anaphylactic reaction in a young female who received aspiration prophylaxis preoperatively. The likely agent was intravenous ranitidine. Patient required intensive care and developed severe lactic acidosis. She responded very well to fluid and phenylephrine boluses and later on Norepinephrine infusion. Successfully treated and shifted to ward.

Case: Our patient was a 27-year female admitted with diagnosis of right ovarian endometrial cyst and was scheduled for Laparoscopic ovarian cystectomy. She had no prior co-morbid condition. Her preoperative assessment including laboratory workup was unremarkable. For the questionable history of gastro-esophageal reflux disease she was prescribed to have aspiration prophylaxis two hours before coming to operative suite. The regimen constituted three drugs, which were syrup sodium citrate 30 ml, Injection metoclopramide 10 mg and ranitidine 150 mg intravenously. Soon after starting the treatment patient reported difficulty in breathing and suddenly became unconscious. On monitoring, she had unrecordable BP while heart rate was 150 beats /min. Peripheral cyanosis was also there. Auscultation of chest revealed bilateral harsh vesicular breathing with SpO₂ 84%. Patient was intubated and responded well to fluid boluses and increments of phenylephrine intravenously. After initial management and stabilization of hemodynamic variables she was shifted to intensive care. Immediately after arrival in intensive care patient became hypotensive, developed tachycardia and peripheral cyanosis. Patient was managed with fluid and 100 micrograms phenylephrine boluses. Meanwhile

arterial and CVP line were also passed and norepinephrine was started immediately. Patient started to improve clinically after the fluid resuscitation and norepinephrine infusion. Our working diagnosis was severe anaphylactic reaction, either due to the metoclopramide or ranitidine as both were administered intravenously simultaneously. After exploring the past medical history we came to know, that patient had history of minor allergic reaction to seafood. After fulfilling all the criteria patient was extubated within 12 hours of ICU admission. She was shifted to special care unit and then to ward from where she was discharged to home. Critical Care team also advised her to follow allergy clinic for further management plan, however she didn't attend allergy clinic.
Conclusion: The incidence of anaphylactic reaction to H₂ receptor antagonists has been reported as 0.3%–0.7%. Ranitidine is routinely prescribed as pre medication but anaphylactic reactions can be devastating with it. Extreme caution and vigilance is required during intravenous administration..

Keywords: Anaphylaxis, preoperative period, Aspiration

11.23

XERODERMA PIGMENTOSUM: MULTIDISCIPLINARY TEAM APPROACH FOR THE TREATMENT OF DISEASE

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Introduction: Xeroderma pigmentosa (XP) is a rare autosomal recessive disorder of DNA repair which lead to variety of malignancies. XP is a life threatening disease. However, with early diagnosis, the innovation of techniques to protect XP patients from ultraviolet (UV) and interaction with support groups and affected patients and families; the patients can live a better and healthy lifestyle.

Objective: The literature review aim to highlight the influence of modification of environment such as protective clothing and sunscreen use, Medical care i.e. use of Vit D and life style factors such as social support and ongoing environmental assessment can minimize the ocular and cutaneous symptoms .

Method: A maximum 10 literature articles (from 2010 to 2016) were reviewed utilizing the authentic resources (Science Direct, ePub, Sage).

Results: The goal is to minimize the exposure of UV radiation. The patient suffers from XP ensure full photo protection. They should wear fabric made up of polyester and rayon material and large brim sun hats. Moreover application of sunblock SPF30 every 2-3 hrs. and interaction of XP support groups and affected families help patient and their families in these circumstances.

Conclusion: Early identification of disease results in reduction of skin cancer and improvement in life expectancy. Multidisciplinary team approach is useful for this patient. Due to good UV protection and improved medical care, XP patients are living longer and increasingly more open lives.

Keywords: ultraviolet rays, environmental factors, supportgroups

11.24

PREVALENCE OF PERSISTENT POST-SURGICAL PAIN IN A TERTIARY CARE HOSPITAL OF A DEVELOPING COUNTRY: A CROSS SECTIONAL SURVEY

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Introduction: Persistent post-surgical pain (PPP) is pain that lasts for 3 months or more after

surgery. Research has shown significant prevalence of PPP after many surgical procedures. However, little is known of its prevalence in Pakistan. Research in this area will guide us in making strategies for its prevention.

Objectives: To assess the prevalence of PPP after total knee replacement (TKR) and total abdominal hysterectomy (TAH) and its characteristics. *Methods:* Written informed consent was obtained. Patients with history of chronic pain, taking regular analgesics or having a language barrier were excluded. A pain nurse called the patient after three months and one year and filled out the questionnaire. Frequency and percentages were computed for qualitative observations and analyzed by chi-square test.

Results: 201 patients were included, 119 (59.2%) underwent total abdominal hysterectomy, and 82 (40.8%) had unilateral total knee replacement. Three months after the surgery 28 (13.9%) patients reported having pain, 15 post-TAH (12.6%) and 13 (15.8%) following TKR. Twenty (71.4%) complained of pain at the operative site only, while 8 (28.6%) had pain in the area surrounding it. Average pain score was 2.63 ± 0.87 . At one-year follow-up, out of the 15 patients who had pain three months after TAH, two (1.7%) reported persistent pain, nine had no pain, while four patients did not respond. Of the 13 TKR patients, three (3.7%) reported pain, five reported no pain, and 5 did not respond.

Conclusions: The prevalence of PPP in our tertiary care hospital was found to be lower than that reported from other centres. PPP was found in 12.6% of patients after TAH and in 15.8% after TKR three months after the procedure. At one year the frequency decreased to 1.7% after TAH and 3.7% after TKR.

Keywords: Postoperative pain, persistent post-surgical pain, total knee replacement

11.25

POSTSURGICAL CHYLOTHORAX OF UNCLEAR ETIOLOGY IN A PATIENT WITH RIGHT-SIDED SUBCLAVIAN CENTRAL VENOUS CATHETER PLACEMENT

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Introduction: Central venous catheterization (CVC) is routinely done in anaesthesia and intensive care units. A rare complication after venous catheter is chylothorax. It occurs due to injury to the duct during catheter placement or secondary to venous thrombosis

Case history: A young male underwent decompressive craniotomy for intra cranial bleed. A right-sided subclavian central venous catheter was placed intra operatively. He was transferred to intensive care unit (ICU) due to low GCS. On second postoperative day, he started developing tachypnea, increased peak airway pressures, decreased breath sounds and dull percussion note on right side. Chest X-ray revealed massive pleural effusion on right side. Under ultrasound guidance 1400 ml of milky white fluid was aspirated. The fluid sample was sent for triglyceride levels that are high and consistent with diagnosis of chylothorax. A duplex scan was negative for venous thrombosis. Further subsequent X-rays did not show re-accumulation of fluid. The case illustrates the importance of unusual development of chylothorax on right side and we also discussed steps of management according to current available literature.

Conclusion: Right-sided chylothorax is rare complication after central line insertion. Treatment is conservative and includes stopping enteral feed that can increase chyle production.

Keywords: Chylothorax, Central Venous Catheter, Pleural Effusion

11.26

ANALYSIS OF ELECTRONIC PORTAL IMAGING SYSTEM IN RADIOTHERAPY AT AKUH

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Introduction: In Radiation Oncology patient treatment setup verification is an essential component. In our section Electronic portal imaging devices EPID use for daily imaging. The portal images analyzed online on computer before the treatment by Radiotherapist RTT, if there is need of any adjustment in patient setup, they retake the image and treat after verification. RTT take the images every week during course of the treatment (usually 4 to 6 weeks of course). Radiation Oncologist RO review and verify the images offline within 3 days. If there is a need of any changes in setup doctor left the comment on image and request RTT to adjust setup retake the image.

Objective: The aim of our study was to analyze inter-observer agreement among radiation oncologists and RTT in the evaluation of EPID for multiple sides.

Materials and Method: EPID data of 4 weeks for 30 patients were independently reviewed, displacement of each EPID image with respect to the digital reconstructed radiographs (DRRs) was quantified using manual EPID registration based system on bony land marks with the corresponding DRRs. Results: The analysis shows RO and Therapist in agreement in 43% of cases, as no adjustment required. Whereas in 57% cases doctor ask for the setup adjustment

retake of images. In most the cases RTT's adjustment was accepted by RO, however we found that RO ask for further adjustment in some of the cases.

Conclusion: Our study is useful in evaluation of RTT capability in image verification and quality assurance of the treatment.

Keywords: EPID, Imaging, Verification

11.27

IMPACTS OF VERBAL VIOLENCE ON HEALTH CARE PERSONNEL

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Purpose: This paper highlights the most ignored part in Health care setting which is the health of health care providers.

Method: This study is a literature Review on how verbal violence by patients affects the health of healthcare providers? This study is about the mental health patients who unintentionally or may be intentionally harm their caregivers by different means. Verbal violence is one of the mean by which health care providers get affected. This study highlights the case of a schizophrenic patient who always uses to talk rudely with the staff and use to abuse staff in a very bad language. Usually health care providers are taught to sympathize and empathize the patient's condition. So they ignore these things many times but listening all these bad comments and abusive words from different patient in daily routine has some effect on their mental, psychological and physical health. This is considered to be another stressor for the health care providers other than the workload which ultimately impacts their general health. The big issue about this thing is these cases of verbal

violence by patient to staff are mostly not reported. Verbal violence on HCPs is an unethical act.

Conclusion: Health care providers are at high risk for violence by patients. We need to take this thing under consideration and report such cases without considering the health of patient. Health of all the people is precious whether he/she is patient or a health care provider.

Keywords: Verbal Violence, Unethical, Stressor

11.28

AUDIT TO REVIEW THE DEPARTMENTAL EFFICACY AND SAFETY OF PERCUTANEOUS LUNG BIOPSIES

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Background: CT guided lung biopsy is a commonly performed procedure to obtain tissue for a histological diagnosis in cases of suspected lung cancer for appropriate treatment planning.

Objective: The aim of our study was to evaluate the diagnostic outcome and safety profile of conventional CT guided lung biopsies in tertiary care center. *Method and Material:* We retrospectively analyze the result of CT guided lung biopsies of clinical imaging department in Aga Khan University Hospital. We collect the data of 100 patients in which the ages of both Male and Female patients, The Needle Size, Clinical Indication, the side of the Puncture, & The Total Scan Time of the Procedure are also included in the data. The biopsies were performed during June 2015 to May 2016 to determine diagnostic accuracy and complication rates.

Results: The average ages are 59.4 with male range of 20-85 and female range between 24-79. Total of 64 Male and 36 female. Most common

used needle is 18 guage, and 16 and 14 guage needles were used in rare cases. The Average of total scan time is 20.08 sec. The Histopathology shows positive diagnosis in 88% of cases, the positive results including Adenocarcinoma 21%, Squamous Cell Carcinoma 14%, Non-Small Cell Carcinoma 5%, Small Cell Carcinoma 5%, Chronic Inflammation 3%, Pneumonia 3%, , Metastasis 18%, TB 7 %, Acute and Chronic Fibrosis 2% , Fungal Infection 1%, Sarcoidosis 3%, Infarction 2%, Bronchial Adenoma 1%, Hydatid Cyst 1%, Vasculitis Lung Parenchymal Infarction 1%, Abscess 1%, And Peripheral Nerve Sheath 1% . The Histopathology also shows negative result in diagnosis 4% and the insufficient sample is 7%. In this study we also noted the Post Procedural Complication rate up to 15% included: Moderate Pneumothorax in 3 patients, Minimal Pneumothorax 10 patients, Mild transient Haemoptisis in 2 patients.

Conclusion: In this study we observed that conventional C.T guided Lung Biopsy has a highly diagnostic accuracy. Proper careful attention and post procedural care help to prevent or minimize the complications.

Keywords: Histopathology, carcinoma, biopsy

11.29

PERIOPERATIVE FLUID THERAPY IN CHILDREN: A SURVEY OF CURRENT PRESCRIBING PRACTICE IN A TERTIARY CARE HOSPITAL

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Abstract: Background Paediatric perioperative fluid therapy has always been a challenging

avenue and may be associated with iatrogenic hyponatraemia. Our aim was to observe the current prescribing practice of perioperative fluid therapy in children undergoing surgery at a tertiary care hospital.

Methods: After approval from the departmental research review committee, anaesthesia consultants and trainees at a tertiary care hospital were included in this survey from January 2015 to June 2015. A survey questionnaire was distributed amongst them. Individual responses were recorded and submitted to the investigator.

Results: Responses were received from 55 anesthesiologists. The most common choice quoted for routine intraoperative fluid maintenance was half strength dextrose saline (52.7%). The Holiday and Segar formula for maintenance fluid was quoted by 92.7% of anesthesiologists.

Conclusion: This survey has indicated that the current prescribing practice of a significant number of anesthesiologists may be putting children at risk of iatrogenic hyponatraemia secondary to the use of hypotonic fluids intraoperatively. We recommend clinical consideration in context of either replacement or maintenance therapy while prescribing intraoperative fluid therapy to children undergoing surgical procedures and the choice of fluids should be isotonic solutions.

Keywords: paediatric, fluid therapy, perioperative

11.30

PROSPECTIVE SURVEY TO STUDY FACTORS WHICH COULD INFLUENCE SAME DAY DISCHARGE AFTER ELECTIVE LAPAROSCOPIC CHOLECYSTECTOMY IN A TERTIARY CARE HOSPITAL OF A DEVELOPING COUNTRY

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Background: All laparoscopic cholecystectomy (LC) in our hospital settings are admitted overnight. This article assesses the contribution of factors like postoperative nausea and vomiting (PONV), postoperative pain and surgical complications in the overnight stay after elective LC.

Methods: This one year observational study included patients having normal liver function undergoing elective LC before 1400 hours. The data collected included patient demographic, co-morbid, PONV and pain score, complications, surgical time, anesthesia technique, use of prophylactic antiemetic, analgesics, patient satisfaction and desire to have this surgery as day case or inpatient procedure.

Results: From 930 LC done per annum, 45.2% (430/950) patients were included in our study. Prophylactic antiemetic was given in 91.6%, intraoperative narcotics in 94.2% patients and multimodal analgesia in 85.3%. The mean pain score in the recovery and ward was maintained to < 4. In the ward 99.1% patients were able to start oral fluids after 6 hours and were started on oral non-steroidal anti-inflammatory drugs (NSAID) and paracetamol and none required parental opioid. PONV score of more than 2 was observed in only 3.2% of patients in the ward requiring parenteral antiemetic. Surgical

complications in the form of bleeding and bile duct leak were observed in 2% of patients, which was treated intra-operatively. Satisfaction was observed in 99.3% and desire to stay overnight in 87.4% of patients.

Conclusion: Factors like postoperative pain, PONV and surgical complications were well managed and were not associated with significant morbidity to justify routine overnight admission. However, majority of the patients desired to stay overnight that can be improved by counseling and education.

Keywords: laparoscopic cholecystectomy, postoperative nausea and vomiting, postoperative pain

11.32

EVIDENCE-BASED NURSING PRACTICE: THE RESEARCH-PRACTICE ASSOCIATION

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Introduction: Evidence-based Nursing Practice is a research based, theory derived information to make health care decisions for patients while considering individual needs and preferences. It is an effective problem solving approach to administrative issues and clinical practice. It incorporates systematic search, health care professional's clinical expertise and patient's own preferences.

Objective: The aim of this literature review is to highlight Evidence-based practice as an effective approach to uplift nursing performance and patient satisfaction. To discuss the significance and limitation in its application. *Methods:* Comprehensive literature review of 10 research articles from 2010 to 2016 was conducted by using Science Direct, SAGE and BMJ.

Result: Evidence-based practice helps to evaluate research, clinical guidelines and other evidences based on high quality result. It aids nurses in providing high quality nursing care to patients. It not only improves the clinical performance of a nurse but also lead to greater job satisfaction and group dynamics. It reduces health care cost as compared to traditional based care and outdated practices and policies. It helps in managing available resources effectively and efficiently. Despite of benefits, implementation of Evidence-based practices remain low. The most highlighted obstacle were inadequate time, lacking statistical understanding and lack of authority to bring change on patient care.

Conclusion: To acquire better patient outcomes, new knowledge should be transformed into clinically beneficial practice. These practices should be applied throughout the health care system and evaluated in terms of effect on clinical performance and health outcomes.

Therefore it has become an essential mandate to ensure that nursing interventions are based on the most recent and reliable evidences.

Keywords: Evidence-based, Nursing, Research

11.33

LONG-TERM REMISSION INDUCED BY METHYLPREDNISOLONE- CYCLOPHOSPHAMIDE PULSE THERAPY IN A CASE OF RECALCITRANT PEMPHIGUS VULGARIS

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Background/Objectives: Pemphigus vulgaris (PV) is an autoimmune bullous disease, in which autoantibodies react with the cell-cell adhesion structures, causing blisters and erosions on the

oral mucosa and skin. Glucocorticoids are the first-line treatment for PV and help in reducing the disease burden, with ‘steroid-sparing’ drugs – like immunosuppressants and biologics - accelerating the process. To combat the side-effects of long-term management with medications like these, pulse therapy is now being put to use. It is a technique that uses intermittent administration of intravenous steroids and steroid-sparing agents to provide quick and excellent treatment response, whilst also reducing the intensity of their side-effects. Dexamethasone and cyclophosphamide (DCP) have been widely used in pulse form to treat various dermatological disorders, amongst other disease presentations. Though other alternatives exist – like DAP (Dexamethasone and Azathioprine Pulse) and DMP (Dexamethasone and Methotrexate Pulse) - by far, DCP remains the most effective (and cost-effective) regimen with the quickest onset and continuance of remission. Our replacement of dexamethasone with methylprednisolone reduces the cost of treatment further.

Observation/Result: In this report, we describe case of a middle aged lady with severe, long-standing and relapsing PV, who received only 2 pulse sessions of methylprednisolone and cyclophosphamide. She was then maintained on minimal dosages of oral prednisolone and oral cyclophosphamide, and is on an on-therapy remission for more than a year now.

Conclusion: To our knowledge, this is the first case of its kind. This report thus demonstrates the use of DCP as the treatment of choice for severe, longstanding and relapsing PV, with other (more expensive and/or more high-risk) interventions like biologics falling in as second-in-line.

Keywords: pemphigus vulgaris, pulse therapy, recalcitrant

11.34

TRANSFORMATION IN THE WORLD OF E-HEALTH

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Introduction/Purpose/Background: Research is the systematic investigation, subjective approach and study of sources to establish facts and reach new conclusions in order to shape people’s understanding. The emerging technology is bringing a paradigm shift in healthcare delivery through various means which enables us to transform our thinking and practices. This paper talks about one of the transformational practice that is e health and its benefits. E-health is the use of distant communication technologies in the healthcare context and the use of advanced information and communication technologies (i.e., the Internet) that meet the needs of citizens, patients, healthcare practitioners and professionals.

Method: A computerized literature search was performed. Systemic review of literature from 2010-2016 was conducted through electronic medium by using Science Direct, SAGE, Taylor and Francis and Google search engines.

Results/Findings: New e-health systems characteristically improve the speed of data transfer and allow higher volumes of data to be exchanged. They also provide greater integration of adding technologies allowing for the linkage and storage of information across multiple sites. E-health services have been shown to be effective measures to reduce costs and improve the quality in the public health sector (Richardson, 2013). They can be conceived, with considerable benefits for both patients and healthcare providers and they also provide a new method for using health resources - such as information, money, and medicines. Evidence suggests that the use of e-health offers new

opportunities for effective clinical practices, time and cost savings for patients, doctors and health services. In addition, the newness and excellence of e-health services in providing computer-mediated healthcare services are a big transformation of telemedicine (Matusitz & Breen, 2010; Manafò & Wong, 2013). Health-related websites are used to exchange experiences and find support as well as information and advice (Jones, Ashurst & Trappes-Lomax, 2015). Based on the evidence to date, eHealth internet-based technology is a promising tool that can be utilized to promote individuals' health (Knowles & Mikocka-Walus, 2014).

Recommendation/Conclusion: There is a need for a global eHealth convention, which will regulate the provision of healthcare services internationally with the protection of patient's confidentiality. For this, educators need to be able to engage with the evidence from research and practice and position themselves as learners. Many technological challenges have to be met in order to ensure the widespread adoption of e-health solutions in the future.

Keywords: Information and communication technologies, Transformative practices and e Health, Telemedicine

11.37

ANTEROLATERAL THIGH FLAP FOR RECONSTRUCTION OF SOFT TISSUE DEFECTS: SUCCESSOR OR ALTERNATIVE OF RADIAL FOREARM FLAP?

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Background: Fasciocutaneous free flaps are most widely used after radical resection of

cancers. Among the various free flaps used, radial forearm flap is traditionally the most commonly used fasciocutaneous free flap. Anterolateral thigh flap since its first description has gained popularity for soft tissue reconstruction. The aim of our study was to objectively compare the two free flaps use in reconstruction of soft tissue defects in terms of flap survival and donor site morbidity.

Methods: This was a retrospective cohort study done from 2007-2015 through chart reviews including 72 patients out of which 22 patients underwent radial forearm free flap and 50 patients underwent anterolateral thigh flap at Aga Khan University hospital.

Results: There is no statistically difference (p value 0.329) in terms of flap survival in both groups. The flap success in Radial forearm group is 95.45% and anterolateral thigh flap was 94%. Donor site morbidity was higher in radial forearm group 18% with wound dehiscence being the most common complication in radial forearm free flap group. The donor site complication in anterolateral thigh flap group was 8%. All radial forearm free flap donor sites were closed with split skin graft while in anterolateral thigh flap group 70% of defect < 8 cm were closed primarily (p value 0.00)

Conclusion: Although both flaps are comparable in terms of flap success however, the advantage of primarily closing donor site in majority of patients in anterolateral thigh flap group as compare to using split skin graft in radial forearm free flap group and higher donor site complication percentages in radial forearm free flap group makes anterolateral thigh flap better alternative to radial forearm flap

Keywords: Anterolateral thigh flap, radial forearm flap, comparison

11.38 THERAPEUTIC PLASMA APHERESIS

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Introduction: Apheresis is a procedure in which whole blood is removed from the body and passed through an apparatus that separates out one or more particular blood constituent. Therapeutic apheresis permits the removal of disease causing or unwanted cellular or plasma constituent from a patient. Types of Apheresis: Plasmapheresis, Leucopheresis, Plateletpheresis, Erythrocytapheresis (Red cell exchange)

Aims And Objectives: The aim of the study was to assess the indications and type of therapeutic apheresis procedure performed at our center.

Materials and Methods:

Study Design = Prospective study

Study Duration = Data was collected from January 2013 to January 2015.

Study Place = Section of transfusion medicine, Clinical Lab, Aga Khan University Hospital

Results: A total of 649 sessions of apheresis procedures were performed on 95 patients.

Out of total patients, 95 (98.9%) patients underwent plasmapheresis whereas only 1 (1.1%) patient had leukocyte apheresis.

The median age of patients was 41 years (Range: 1-87 years). There were 48 (51.0%) male patients and 47 (49%) female patients.

The indication for leukocyte apheresis was high white cell count in acute leukemia.

The most indications for plasma pheresis were Guillain-Barré syndrome (35.8%) Myasthenia gravis (17.7%) and thrombotic thrombocytopenic purpura (TTP) (12.6%).

Conclusion: The most common type of therapeutic apheresis procedure performed was plasma pheresis.

The most common indication was Guillin-Barre syndrome

Keywords: Therapeutic pheresis, indications, types

11.39 KAALA PATHAR (PARAPHENYLENE DIAMINE) POISONING AND ANGIOEDEMA IN A CHILD: AN UNUSUAL ENCOUNTER

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Hair dye ingestion is a rare cause of toxicity in Pakistan. Clinical outcomes rely on early recognition, prompt referral, and aggressive supportive treatment.

Case: We report a case of a three year old boy who presented with severe respiratory distress and angioedema, who underwent emergent tracheostomy placement. A 3 year old boy was brought to the emergency department with sudden onset of facial and tongue swelling and respiratory difficulty for the last 1-2 hours. History from the parents revealed that the child has ingested some "unknown liquid" 3-4 hours before the onset of these symptoms. Physical examination revealed a sick looking child in severe respiratory distress. The child was shifted to Pediatric Intensive Care Unit for further management. Initial lab results showed Hemoglobin of 9.2 gm/dl, white blood counts of 16,000, platelet counts 422,000; serum glutamate-pyruvate transaminase (SGPT) 229 IU/L, Sodium 141 mmol/L, Potassium 3.4 mmol/L, Bicarbonate 24.2 mmol/L, creatinine 0.5 mg/dl and lactic acid 0.8 mmol/L. Serum creatinine phosphokinase (CPK), and troponin I (cTnI) were within the normal range. Arterial blood gas analysis showed partial pressure of oxygen 121 mmHg, carbon dioxide 33.90 mmHg and pH of 7.41. Chest X ray done was unremarkable. Renal function tests were followed along with detailed liver function tests including a coagulation profile that were

unremarkable, except a rising SGPT level, 474 IU/L as of now

The child improved clinically over the next few days, was weaned off the ventilator and discharged home with the tracheostomy tube. Parents were taught tracheostomy care. Over the next two to four weeks, he was decannulated and the tracheostomy removed successfully over four weeks.

Discussion: The most consistent predictor of mortality is the amount of hair dye ingested, hyperkalemia, hypocalcemia and hyperphosphatemia and mortality rates vary between 0.03% and 60%. Deamination and formation of aniline are claimed to be responsible in part for the toxic symptoms. The initial presentation may be confusing and most deaths occur within hours of admission.

Conclusion: Hair dye poisoning is a rare cause of toxicity in Pakistan, especially in children. The initial presentation may be confusing and most deaths occur within hours of admission. In view of the increasing incidence of poisoning with this toxin, primary care physicians, intensive care physicians and nephrologists need to be aware about the various manifestations and management strategies of this condition.

Keywords: Kaala Pathar, Angioedema, Children

11.40

NECROTIZING ENTEROCOLITIS; OCCURRENCE AT AGA KHAN UNIVERSITY HOSPITAL

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Background: Necrotizing Enterocolitis (NEC), is one of the most unfavorable diseases amongst newborns, the underlying cause of which is still incompletely understood even after three decades of development in newborn care. The occurrence of NEC varies with studies reporting a variation of 1-7% of neonatal intensive care

admissions or 1-3 per 1000 live births with equal prevalence among male and female infants.

Another study, reported the frequency in terms of staging of NEC according to Bell's criteria to be 48%, 39% and 13% for stage I, II and III respectively with stage III having a poor prognosis.

Objectives: Primary Objective: • To determine the frequency of necrotizing enterocolitis in preterm infants born at Aga Khan University Hospital (AKUH).

Secondary Objective: • To determine the factors (low birth weight, perinatal asphyxia, sepsis, formula feeding, congenital heart disease, placental insufficiency or pregnancy induced hypertension) among preterm infants diagnosed with necrotizing enterocolitis. • To evaluate the stage of necrotizing enterocolitis (extent of disease) in preterm infants admitted in NICU, step down unit and well baby nursery at AKUH on the basis of clinical and radiological findings. • To evaluate the outcome of preterm infants diagnosed with necrotizing enterocolitis at AKUH at discharge.

Methods: All preterm neonates fulfilling the inclusion criteria will be enrolled in the study. Diagnosis of NEC will be made by the consultant neonatologist with 10 years experience and NICU team. Data will be collected on a predefined proforma and will capture the antenatal, natal and postnatal characteristics of the baby. Informed consent will be taken from parents/guardians of the preterm infants included in the study. Inclusion Criteria 1. Preterm infants born at AKUH between gestational age of 26 to 34 weeks irrespective of gender and mode of delivery. Exclusion Criteria 1. Late preterm infants of gestational age greater than 34 weeks and term infants 2. Preterm infants with antenatal diagnosis of severe congenital malformation including gastrointestinal anomalies 3. Preterm

infants with any prior abdominal surgery

Results: In process of collection

Conclusions: Awaited

Keywords: Necrotizing Enterocolitis, Preterm infants, Bell's Criteria

11.41

AUDIT TO REVIEW RESULTS OF PELVIC ANGIOEMBOLIZATION IN TRAUMA PATIENTS

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Background: Pelvic injuries may be extremely difficult to manage, causing high morbidity and mortality. Road Traffic accident account for a large number of pelvic fractures, with fall and gunshot wounds also contributing significantly. The high mortality of pelvic fractures is due primarily to the injury type and the associated anatomy. Pelvic angioembolisation provides a means of selectively or non-selectively accessing relevant pelvic arteries to control hemorrhage.

Objective: Our aim is to review our own results of pelvic arterial embolization performed in intervention radiology suite.

Method: The data of all patients in whom pelvic angioembolization was performed was collected from August 2010 to February 2015. Procedures were performed by experienced Intervention Radiologist. The clinical and laboratory data, as well as the outcome data were obtained from medical records of our hospitals. The following parameters were collected for each patient included the age, gender, presenting symptoms, site of bleeding, catheters used for embolization, type of embolic agents used the

material used for embolization, previous CT scan and FAST ultrasound, average hemoglobin before the procedure, and the patient clinical status on discharge.

Result: A total of 36 patients underwent pelvic angiography for acute hemorrhage at our Institution. 36 patients had contrast blush or abnormal vascularity in the internal iliac artery tract and underwent therapeutic trans catheter embolization. There were 28 (77.7%) male and 07 (19.4%) female patients with male-to-female ratio of 4:1. Average age was 32.29 years (range: 5 month –90 years). 8 patients (22%) present with RTA, 05 patients in trauma (13.8%), 05 with Gunshot injury (13.8%) 04 patients with a history of fall (11%), 03 patients with a pelvic trauma (8.3%), 02 patients with Bomb Blast injury (5%), 1 Hip joint bleeding (2.7%), 1 Glass Injury (2.7%), 1 patient had a Post-surgical bleed (2.7%), Sacral Tumor (2.7%) in 1 patient. 5 (13.8 %) patients with miscellaneous cause of bleeding. In 35 patients' abnormal blush or extravasations corresponding to bleeding site was identified and embolized. The type of embolic material used for embolization, coils used in 13 patients (36.1%), PVA particles used in 7 patients (19.4%), and in 7 patients both PVA particle and coils (19.4%) were used. 2 patients expired due to other co-existing morbidities.

Conclusion: Pelvic angioembolization is useful procedure in pelvic trauma patients and significantly improves patients overall clinical outcome.

Keywords: embolization, catheter, pelvic

11.42

TO EVALUATE THE DIAGNOSTIC ADEQUACY & SAFETY OF PER-CUTANEOUS ULTRASOUND GUIDED LIVER BIOPSY- A DEPARTMENTAL AUDIT

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Background: Liver biopsy is a well-established and routinely used procedure for obtaining liver tissue for accurate histological diagnosis. It is important to reevaluate the diagnostic accuracy and complication to stay in compliance with literature.

Objective: To evaluate the adequacy of sample, review disease pattern in our local population and access complication rates in consecutive core biopsy of liver.

Method and Material: A total of 125 consecutive patients undergoing per-cutaneous liver biopsies were reviewed, Evaluation were performed from May 2015 to April 2016. Data items collected include patient's age, sex, indications for biopsy, needle size, detail of post procedural complications and final pathology outcome.

Result: Medical records of 125 patients were included for analysis. The average of the ages is 49.7, the ages of males lie between 2-86 and the females 13-73. Previous CT scan of 54 patients and MRI of 9 patients were helpful in decision of site of puncture. The needles which were used in biopsies were 18, 16 and 14 gauge but the most common needle used in the liver biopsy was 18. According to histopathology report 92.8% patients shows positive results in diagnostic accuracy, the most common finding for liver biopsy were metastatic adenocarcinoma 45%, Chronic hepatitis 15%, chronic hepatitis

8%, hepatocellular carcinoma 10%, T.B 6%, Steatosis 6%, Periportal Inflammation 10%. Non-diagnostic results were obtained in 4 of the 125 patients (3.2%) and the Insufficient sample is 4%. four major complications were seen which were broadly classified as 1 episodes of hemorrhage, 1 for vasovagal attack, Minimal streak of perihepatic fluid seen in 1 patient, And 1 patient feels nausea and vomited after the procedure. Pain was experience in 23 patients which resolved with medication and proper nursing care.

Conclusion: Our results confirm that ultrasound guided trucut liver biopsy is safe and effective. The results are in-line with international literature.

Keywords: adenocarcinoma, liver, hepatitis

11.43

NOVEL ROLES CONTRIBUTE TO JOB SATISFACTION AND RETENTION OF STAFF IN PROFESSIONS ALLIED TO MEDICINE

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Preliminary studies have suggested that job satisfaction is an important factor influencing professionals allied to medicine and residents to abandon their profession. It has also been linked to the turnover of competent doctors. However, the literature on these factors among residents and professionals related to medicine in the innovative features is erratic.

Objectives: The objectives of this study considers the opinion of 40 residents and 100 professionals allied to medicine (PAMs) in innovative roles, job satisfaction, career

development, intends to leave the profession and the factors considered and hindering construction work effective. A self-completion questionnaire was developed as part of a larger study exploring new roles in practice.

Findings: Overall there was a high level of job satisfaction in both groups (residents and PAMs). Job satisfaction was significantly related to feeling integrated within the post holder's own professional group and with immediate colleagues, feeling that the role had improved their career prospects, feeling adequately prepared and trained for the role, and working to protocol. Seventy percent (n=100) of respondents felt the role had enhanced their career prospects but over a quarter of respondents (n=40; 30%) said they would leave their profession if they could. Low job satisfaction was significantly related to intention to leave the profession. SPSS 20v was applied to analyze the records all through "independent sample T-test, Binary logistics, correlation, regression analysis". The majority of post-holders in the innovative features considered that the role gave them a sense of job satisfaction. However, it is essential that holders feel sufficiently prepared to carry out the role and limits of their practice are well defined. Career development and integration are both associated with job satisfaction

Keywords: Job satisfaction, career development, professionals allied to medicine

11.45

DO PATIENTS UNDERSTAND DISCHARGE INSTRUCTIONS IN THE EMERGENCY DEPARTMENT?

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Introduction: Ineffective communication between a patient and health care provider in chaotic EDs may have poor patient understanding of discharge instructions (DIs). It may lead to return ED visits and hospitalization. The aim of this study is to identify deficits in patients understanding of DIs in emergency department (ED).

Methods: It was a cross-sectional study conducted in ED at the Aga Khan University Hospital during January 2013 - June 2013. Total 267 patients were randomly interviewed through telephone within 72 hours of discharge. The person interviewed was either the patient himself or guardian/next of kin. The audio recorded interviews were assessed by ED physician panel for patient's understanding of DIs according to scale; no understanding, partial understanding, complete understanding and misunderstanding.

Results: There were 51% females and 49% males including 28% children (under 16 years). About 37% of the pediatrics and 50% of adult patients had complete understanding about their diagnosis as per consensus of physicians. 37% pediatrics cases and half of adult patients had complete understanding of the purpose of medication prescribed. Regarding the dose of the medicine, 41% of the pediatrics cases and 43% adult patients had complete understanding. Almost one third (33%) pediatrics cases and

55% of adult patients completely understood duration of medication. Only 4% of pediatrics cases and 10% of adult patients had complete understanding of side effects.

Conclusion: Our study demonstrates gaps in the understanding of DIs for the domains of diagnosis and medication. The understanding is specifically low for pediatric pool compared to adult patients.

Keywords: Emergency Department, Discharge instruction, Pakistan

11.46

UNINTENTIONAL POISONING MORTALITY TRENDS IN THE SOUTH ASIAN REGION FROM 1990 TO 2013: FINDINGS FROM THE GLOBAL BURDEN OF DISEASE STUDY

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Introduction: A comprehensive and systematic assessment of the South Asian mortality trends of unintentional poisoning has been limited. Therefore, we estimated the death rates in South Asia region from 1990 to 2013 from the Global Burden of Disease Study.

Methods: Country mortality rates per 100,000 for the unintentional poisoning were used from the global burden of disease study. South Asian region was selected for analysis that includes Afghanistan, Bangladesh, Bhutan, India, Nepal and Pakistan. The poisoning mortality trends by age, sex and countries were calculated.

Results: The highest mortality of unintentional poisoning is found in age 80 years and above (mortality rate 7.4 per 100,000 in 2013) in South Asia from 1990 to 2013. Males have a higher

mortality rate than females (35 vs 19 in 2013) in the region from 1990 to 2013. Bhutan has the highest death rates followed by Pakistan throughout these years (7.9 and 6.4 respectively in 2013). Bangladesh (0.3) has the lowest mortality rates in 2013. The percentage change in mortality rates is decreased in all six countries of South Asia from 2000 - 2013.

Conclusion: Overall, there is a decline in the poisoning death rates in the South Asian region in 2013 compared to 2000. Pakistan ranks second in mortality rates of unintentional poisoning in the region.

Keywords: Poisoning, Unintentional, South Asia

11.48

TO CIRCUMCISE OR NOT TO CIRCUMCISE? CIRCUMCISION IN PATIENTS WITH BLEEDING DISORDERS

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Introduction: Male circumcision is one of the oldest surgical operation known, its history dates to ancient times (15000 BC). Worldwide prevalence is 20-30%. It has been associated with several medical benefits including lower rates of urinary tract infections, penile cancer, penile inflammation penile dermatoses and sexually transmitted diseases. It is ritual among Jews and Muslims. Complication rates vary from 1-15%. Risk associated in patients with bleeding disorder is even greater and if proper measures are not taken it can be life threatening. It's most common complications is bleeding, rate varies from 0.1-35%. In our country because of religious obligation most parents wish to have

their child get circumcised inspite of known bleeding disorder.

Objective: The aim is to analyze complications of circumcision among patients with bleeding disorder at our institution. We have determined extent of optimization to prevent bleeding complications in these children.

Methods: Data representing boys (age 0-16 years) who underwent routine circumcision between 1988-2014 was retrospectively reviewed. Children with bleeding disorder or diagnosed to have bleeding disorder post circumcision were identified using ICD Code 64.0(Procedure code), 99.06, 155.0, 286.0, 286.3, 286.6, 286.9, 287.1, 287.5, 570, 571.5. Data was retrieved very carefully to maintain the confidentiality. SPSS version 19 was used for statistical analysis.

Results: During this period of 26 years 13,200 circumcisions were performed at Aga Khan University Hospital. Among these 8,463 (64.11%) were done by using plastibell (Mabis Healthcare USA/ Hollister) under local anesthesia, While 4,737(35.88%) by using open slit method under general anesthesia. Only 23 (0.17%) patients were identified with bleeding disorder. We have made two groups, Group A patients with known bleeding disorders having circumcision and Group B, those in whom bleeding disorder diagnosed after surgery. Out of those 15 patients were placed in Group A and 8 patients were placed in Group B. Median age of patient in group A was 9 years (Age range 6 months to 16 years). All patients in group A underwent open circumcision. 10 had Factor 8 deficiency, 2 had Glanzmann's thrombocytopenia, 1 had Factor 9 deficiency, 1 had Quebec platelet disorder, and 1 had Von wille brand disorder. Significant family history of bleeding disorder was present in 7/15 (46.66%) in Group A. In Group A preoperative and postoperative optimization was done specifically according to nature of disease. We

have used factor VIII in 8 patients, cryoprecipitate in 3 patients, cryoprecipitate and factor 9 in single child, platelets in 3 children. Whereas, postoperative optimization was done using factor VIII in 6 patients, cryoprecipitate in 4 patients, cryoprecipitate and factor 9 in 1 patients, cryoprecipitate and FFPs in one patients and platelets in 3 patients . In Group A we have observed postoperative complications in 2 boys, one had postoperative hematoma (15th post-op day) and second developed postoperative bleeding (12th post-op day), and both needed revision procedure. In Group B there were 8 patients. Median age of patients in group B was 3 months (age range 9 days to 6 months), 7 out of 8 underwent plastibell while one patient had circumcision by open technique. Out of those 8 patients 3 patients operated in our institute and 5 patients referred to us after having procedure from outside. Among them 7 were diagnosed later as Factor 8 deficiency and 1 with Factor 13 deficiency. No significant family history of bleeding disorder was present in Group B. No postoperative complication was observed in Group A. Statistical analysis showed significant p value with respect to age (P-value 0.00) and family history (P-value 0.04- Fisher's Exact test). Both the two groups had similar postoperative length of stay.

Conclusion: Our bleeding complication rates were 13.33%. None of the patients has observed significant bleeding. With the help of hematologist and adequate factor replacement, these patients can be managed as day care. We suggest risks and benefit should be discussed with parents before procedure.

Keywords: Circumcision, Bleeding, Hematological disorder

11.49 RADIOTHERAPY PLAN OPTIMIZATION USING DYNAMIC WEDGES AND PATCH FIELD FOR RECTAL CANCER

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Introduction: Enhance dynamic wedges (EDW) and patch field are commonly applied to obtain homogeneous dose distribution in the planning target volume (PTV). Unlike wedge factors for physical wedges that depend on wedge material and thickness, wedge factors for dynamic wedges such as Varian enhanced dynamic wedges (EDWs) depend on the relationship between the position of the moving jaw and the delivered monitor units (MUs). While the technique which is called Patch field or field in field (FnF) divides the main field into smaller fields so that the high dose regions are compensated and weightage of the field is so adjusted that only high value of doses (< 108 %) are reduced. *Material Methods:* A Varian Clinac DHX dual energy linear accelerator (Varian Medical Systems) linear accelerator was used to utilize the mix beam energy for treatment using the 6 and 18 MV. Treatment plans using the EDW for Eight patients were made on the Eclipse treatment planning system. Mean monitor unit, plan normalization value, maximum and minimum doses in the planning target volume (PTV), dose conformity index, dose homogeneity index and uniformity index were determined for each treatment plan. The average dose coverage for the PTV with EDW and Patch field technique plans were compared. *Results:* The PTV received prescription doses of $98.9 \pm 0.74\%$, for the EDW (450) compared to $100.2 \pm 1.65\%$, for patch field. Homogeneity indices were $(0.11 \pm 1.1\%)$ for EDW while that of

field in field technique found to be $(0.16 \pm 0.07\%)$. The field in field technique had a better target coverage with a higher conformity index value of $0.97 \pm 0.04\%$ compared to the EDW. Also the monitor units were greater for EDW as compared to patch field technique *Conclusions:* We conclude that the patch field results in an improvement to the plan evaluation parameters presented and thus increases dose efficacy for radiotherapy of rectal cancer. Also EDW has a distinct advantage that its planning does not take much dosimetrist effort as compared to patch field. But the limitations to EDW sometimes makes Field in field technique the only choice for plan optimization.

Keywords: Patch field, Enhance dynamic wedge, Planning target volume

11.50 RECURRENCE RATE IN CARCINOMA ORAL TONGUE: ANALYSIS OF PROGNOSTIC FACTORS AND SURVIVAL OUTCOME

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Introduction: Karachi Cancer Registry data shows oral tongue is the second most common site for cancer (28.4%) in oral cavity. The prognosis and overall survival of Squamous cell carcinoma of oral tongue is poor due to aggressive local invasion and nodal metastasis, leading to recurrence. The rate of recurrence reported is 10 - 50%. Reported 5 year overall survival 48 – 51%. Factors affecting recurrence are tumor size, depth of invasion, nodal involvement, resection margin and adjuvant treatment.

Materials and Methods: Retrospective review of patients who underwent tongue cancer excision at AKUH from April 2000 to April 2010 were included in the study.

Results: Total of 95 patients were included. Mean age was 49.78 (± 14.09) years. Mean follow up was 57 months. Male predominance (69% vs. 31%). Rate of recurrence 40%. Recurrence in NO patients was 32% vs 63% in N2, statistically significant $p=0.026$. Recurrence rate in patients with early stage disease was 30% vs 54% in late stage, statistically significant $p=0.018$. Mean depth of invasion 11.7mm in patients who developed recurrence. Patients with clear surgical margins, the rate of recurrence was 19% vs. 68% in those with involved margins, statistically significant $p=0.000$. 5 year disease free survival 61% and overall survival 68%.

Conclusion: The rate of recurrence, disease free survival and overall survival rate in our study is comparable to international data. The prognostic factors of oral tongue squamous cell carcinoma significant in our study were the Surgical margins, Depth of invasion, Nodal status, Stage of disease.

Keywords: Oral Tongue Cancer, Squamous cell carcinoma, Recurrence rate

11.51

HIBERNOMA LARYNX WITH LARGE MULTINODULAR GOITRE: UNUSUAL AIRWAY CHALLENGE

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Introduction: What makes our case special is the concomitant laryngeal mass with a multinodular goitre pushing the epiglottis anteriorly thereby obstructing the airway for intubation. Induction

of anaesthesia was a challenge, as the airway was not accessible transorally due to this lesion, and a large thyroid mass was obscuring it anteriorly.

Case report: A 56-year-old man presented with a 6-month history of progressively increasing neck swelling, dysphagia and hoarseness of voice. CT scan revealed multi-nodular goitre and also showed a lesion in the supraglottis. It also showed another lesion in the supraglottis. Fine-needle aspiration cytology of thyroid revealed follicular cells. Routine flexible laryngoscopy was performed to evaluate vocal cord function; however, we found a smooth well-defined lesion just above the glottis, obstructing the direct view of the vocal cords, and an endangered airway. A provisional diagnosis of a laryngeal cyst was made. With all necessary precautions intubation was performed with a bougie and a reinforced endotracheal tube was inserted. Total thyroidectomy was performed first. With direct suspension laryngoscopy an attempt was made to deliver the laryngeal lesion, however, the lesion could not be removed. A suprahyoid lateral pharyngotomy was performed to deliver the lesion. Histopathology of the lesion revealed hibernoma.

Discussion: Hibernomas were first described by Merkel in 1906, but remained unnamed until Grey, in 1914, named them 'Hibernomas' owing to their resemblance to the fat found in hibernating animals. Their incidence in the reported literature is very low, with very few cases described in the head and neck region. To the best of our knowledge, only four previous cases of hibernoma in the larynx have been described in the literature. Hibernomas appear in regions of fetal brown fat deposits such as on the back, thorax, axilla and retroperitoneum; however, they have also been reported in regions devoid of brown fat such as popliteal fosse and thigh. There are two theories linked to the origin of hibernomas, the first suggests remnants of brown fat dispersed in the body from where they grow, the other suggests a transformation of white fat into brown fat and its neoplastic growth. There are marked differences between the two types of fat, the white fat stores energy whereas brown fat regulates non-shivering thermogenesis. Brown fat is highly vascular,

which is similar to appearances of a hibernoma. Brown fat contains abundant mitochondria and a unique uncoupling protein in its inner membrane that allows unrestrained fuel consumption and thermogenesis as a byproduct.

Keywords: Hibernoma, airway challenge, head and neck

11.52

VIOLENCE AMONG PAKISTANI WOMEN: ANALYZING PREVALENCE, FACTORS, AND STRATEGIES TO CONTROL

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Introduction/Objective/Purpose: Domestic violence is prevalent in Pakistan in an alarming rate. Whether it is Stove burnings, acid crimes, honor killings, marital rapes, sexual assaults, physical/verbal abuse, all come under a big umbrella of domestic violence. The aim of this paper is to identify its significant prevalence, causes and strategies to control it.

Methodology: A detailed literature synthesis has been done from past 10 years.

Results/Findings: The Aurat Foundation, reports 8539 cases of violence against women in 2011, an alarming increase of 6.49% from the previous year. Of these, sexual assault increased by 48.65%, acid throwing by 37.5%, honor killings by 26.57% and domestic violence by 25.51%. Moreover, Literature suggests that there are inherited and ingrained personality traits that predispose some men to behave in a malicious and aggressive manner towards women which may be intrinsic and extrinsic factors.

Characteristics like age, education, income, personality influences and acceptance of

interpersonal violence are intrinsic factors. Substance abuse, witnessing marital violence as a child, being abused as a child, absentee or rejecting father on the personality of a person is also considered as intrinsic factors. Whereas, male dominance in the family, male control of wealth, and marital/verbal conflicts are known as extrinsic factors.

Conclusion/Recommendations: Despite of high prevalence, there is an intense need for further research and systematic data collection of domestic violence. However, Policy initiative is considered as most important legal actions to criminalize men's violence against women. Moreover, there are interventions required at all levels of societal organization, political stakeholders, and healthcare and mass media professionals.

Keywords: Woman, Gender Biasness, Violence

11.55

PALLIATIVE CARE: A STEP TOWARDS PRIORITIZING AND IMPROVING PHYSICAL SYMPTOM THAT IS PAIN IN ONCOLOGY PATIENTS WITH METASTASIS

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Introduction/Objective/Purpose: Terminally ill patients need a proper end of life care so that the dying stage could be less difficult. Palliative care therefore improves the quality of life for those patients who are actually fighting the battle between life and death.

Methodology: A comprehensive literature review was done including 18 studies from past 5 years, using various scientific databases.

Results/Findings: Ruland and Moore in 1998 developed the Theory of Peaceful End of Life comprising of 5 principal concepts which are not experiencing pain; experiencing comfort; dignity and respect; being at peace and being close to significant others, explicated by Fitzpatrick and McCarthy (2014). Preventing and managing pain is the foremost intervention to be considered according to the End of Life Care Theory. According to the WHO (2014) for palliative care, it is important to have accurate assessment of symptoms including pain and to safeguard its diagnosis by managing it accordingly as cited in Rosser and Walsh (2014). According to WHO pain ladder, consisting of 3 steps which recommends opioids for persistent and deteriorating pain for advanced diseases, if the pain can't be managed by non-opioids as cited by Rosser and Walsh (2014). Portenoy (2011) highlights the effectiveness of opioid treatment by appropriate selection of a drug for moderate to severe pain.

Conclusion/Recommendations: In conclusion, there are various palliative treatments available such as chemotherapy and radiotherapy but when cancer gets metastasize, it doesn't respond to such treatment modalities in a hopeful manner and results in various complications and ultimately death. What actually digs a patient down is the worsen pain and social isolation due to the disease process. Therefore it is recommended to address physical domain of health firstly than other domains.

Keywords: Palliative Care, Oncology, Pain

11.56 SHOULD CHEMOTHERAPY BE CONSIDERED AS A MANAGEMENT OPTION FOR ELDERLY ONCOLOGY PATIENTS?

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Introduction/Objective/Purpose: Cancer is the most leading cause of death these days around the world which has affected numerous lives. Whereas, chemotherapy is considered to be the drug of choice to treat it as it targets the rapidly dividing abnormal cells of the body. But is it really the preferable choice for the elderly patients? Whether or not chemotherapy be a part of treatment plan for elderly-oncology patients remains controversial. This paper is going to discuss about chemotherapy should not be given to elderly oncology patients as they cannot tolerate its cytotoxic effects and have poor prognosis.

Methodology: A comprehensive literature review was done including 18 studies from past 10 years, using various scientific databases.

Results/Findings: According to Hood (2003) chemotherapy has adverse effects on multiple organ systems including gastro-intestine which leads to malnutrition and nephrotoxicity which further worsens patient's condition. Since, elderlies are already immune-compromised, after chemotherapy they become more prone to acquire infection. As a result, it leads to febrile neutropenia, prolong hospitalization and other life threatening situations. Studies show that incidence of neutropenic infection related to death is 5%–30% in patients greater than 70 years of age (Hood, 2003). McCall and Johnston (2007) highlights that the principal goal to maintain health of patient is to maximize benefit and minimize harm. Therefore, we should not

give harm to elderly patients by such aggressive treatment therapy if that treatment regimen is not suitable for them.

Conclusion/Recommendations: Finally, chemotherapy is less effective for elderly patients since they have compromised immune system, declined organ system and various co-morbid already. In order to make elderly patients live peacefully, one should avoid this cytotoxic therapy due to its adverse effects. Therefore, elderly patients should be provided only with therapeutic and supportive care in order to keep them pain free.

Keywords: Chemotherapy, Oncology, Elderly Patients

11.59

DESENSITIZATION TO IMIPENEM IN A PATIENT WITH MULTIPLE COMORBIDS

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Purpose: To report a case of successful modified imipenem desensitization in a patient with urinary tract infection with documented hypersensitivity to multiple antibiotics including carbapenems.

Case Summary: A 63 year old lady with known case of hypertension, newly diagnosed diabetes mellitus, Ischemic heart disease, CA bladder having 6 cycles of chemo with left nephroureterectomy and bladder cuff excision was admitted to the hospital with complaint of nausea, abdominal pain, polydipsia, polyuria and raised blood sugar level. On routine labs patient was found to have acute pyelonephritis and acute kidney injury. CT KUB showed right kidney mild infection. Urine detailed report

showed few bacteria and yeast with greater than 20 pus cells. Ceftazidime was started empirically after which patient showed hypersensitive reaction then switched to imipenem (500mg Q8h) due to which patient showed allergic rash which then Discontinued. Pharmacist advice taking on board then desensitization protocol of imipenem was adapted to provide the most effective treatment available. The patient was desensitized for 4 hours for two doses and then was successfully treated for 7 days with a extended infusion of imipenem (500 mg every 12 hourly over 2 hours). During the desensitization process or the remainder of therapy course patient experienced no reaction. *Result:* Modified Imipenem Desensitization Protocol Solution: Total Volume Concentration Dose Rate Solution 1 100 mL 0.050 mg/mL 5 mg Over 1 hour Solution 2 100 mL 0.50 mg/mL 50 mg Over 1 hour Solution 3 100 mL 5.00 mg/mL 500 mg Over 2 hour Our modified rapid imipenem desensitization protocol was effective in treatment of recurrent urinary tract infection.

Discussion: Desensitization is a useful alternative that allows the administration of effective drug to patients with documented allergy histories. The protocol used in this case was differed in the speed of desensitization from previous cases. The lower total daily dose of imipenem according to the impaired renal function

Keywords: desensitization, hypersensitivity, imipenem

11.61

A CASE REPORT ON AMIODARONE INDUCE ACUTE HEPATOTOXICITY

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Objective: To report the case of acute hepatocellular injury occurred after 16 hour of amiodarone infusion and the impact of deletion of multiple confounders on Transaminase levels.

Case Summary: A 52 year old male underwent CABG on 26/06/2015 under general anesthesia. Post operatively he developed atrial fibrillation for which amiodarone infusion was started on 28/6/15 for 16 hours which was then continued per orally (1000 mg/day) along with oral co-amoxiclav, esomeprazole, acetaminophen and rosuvastatin. Before amiodarone infusion patient's baseline SGPT was 16 which was raised to 1032 after 16 hour of amiodarone infusion. Literature support that intravenous amiodarone can significantly increase transaminases more than 100 fold of upper limit of normal but it can reverse quickly after discontinuation. Intravenous amiodarone then switched to oral amiodarone with low doses not more than 300mg/day. As per pharmacist recommendation doctor adjust the doses as 200 mg two times daily, and discontinued co-amoxiclav along with rosuvastatin and acetaminophen, and switch esomeprazole to oral omeprazole and then repeat SGPT. His SGPT was reduced from 1032 to 945 which then further reduced to 625 IU on day of discharge. At the time of discharge patient was symptomatically stable. After follow up of 25 days, SGPT further reduced to 14.

Discussion: The intravenous amiodarone induce liver injury is very rare but it can be harmful. Literature support that it may be related to polysorbate 80, a solubilizer or higher doses.

The mechanism of injury in this acute situation is probably different than in chronic exposure, and patients with acute hepatic injury following intravenous infusions of amiodarone can usually tolerate oral therapy without complications. So close monitoring of LFTs are highly recommended when patient is on intravenous amiodarone. Moreover along with acetaminophen, amoxicillin-clavulanate and statins, all are actively involved in increased SGPT & hepatocellular necrosis. Furthermore omeprazole is safe in liver injury as compare to esomeprazole.

Keywords: amiodarone, hepatotoxicity, infusion

11.62

PENCIL SYNDROME: A RARE CLINICAL ENTITY

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Background/objectives: CHILD (Congenital Hemidysplasia with Ichthyosiform erythroderma and Limb Defects) Syndrome is a rare X-linked dominant genetic disorder. Clinically it is multisystem birth defect characterized by unilateral erythema and scaling with a distinct demarcation in the middle of the trunk. Dermatoses may either be present at the time of birth or it may develop during first few weeks of life. Ipsilateral limb defects can vary from hypoplasia of fingers to complete absence of limb. Inflammatory Linear Verrucous Epidermal Naevus (ILVEN)' is a pruritic, red, scaly skin lesion which appears at birth or in early childhood, is orientated along Blaschko's lines, is usually unilateral with a sharp midline demarcation, and is resistant to therapy. The two occurring together is a rare clinical entity, hence, the simple descriptive term 'Psoriasiform

Epidermal Naevus±Congenital Ipsilateral Limb defects' (PEN or PENCIL) syndrome is given. Topical steroids, keratolytics, emollients and retinoids are used for cutaneous lesions. Skeletal deformities can be treated by corrective orthopedic surgery whereas, rest of the medical care is dictated by the type of internal organ involvement.

Observation/ Results: We present a case of a three-year-old girl, fifth child born of a non-consanguineous marriage presented with erythematous scaly plaque over right half of her body along with right lower limb hypoplasia and right hand lobster anomaly. These changes started from age of two weeks and gradually progressed with no history suggestive of systemic involvement. Her workup showed limb hypoplasia without skeletal deformities or internal organ involvement. There is only one publication found on this syndrome reported in literature.

Conclusion: This case is the first of its kind with a clinical combination of CHILD+ILVEN=PENCIL syndrome without any systemic involvement.

Keywords: CHILD syndrome, ILVEN and PENCIL syndrome

11.63

PFEIFER WEBER CHRISTIAN DISEASE: SUCCESSFULLY TREATED WITH CYCLOSPORINE THERAPY

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Introduction: Panniculitis is an uncommon condition, defined as an inflammation of subcutaneous adipose tissue characterized by subcutaneous inflammatory nodules and

plaques, fever and other systemic signs such as polyarthralgia and polymyalgia.

Methods/Case: An 18 year old male presented with intermittent fever associated with B symptoms for the past 1 year not responding to antipyretic or antibiotic therapy. Past history was significant for abdominal TB, anemia of chronic disease and persistently elevated ESR. After initial assessment patient was loss to follow up for 1 year, and represented with fever and two swellings on the anterior thigh and anterior abdomen respectively. Biopsy of the lesion showed “non suppurative panniculitis”.

Results: A combined immunosuppressive drug regiment was initiated and altered along the way as the symptoms and inflammatory markers began to improve leading to complete remission of the disease one year later with maintenance on mono therapy of cyclosporine A.

Discussion / Conclusion: The progression of our patient on different medications regimens seems to corroborate the few case reports that associate a better therapeutic efficacy with cyclosporine therapy. We were able to discontinue GC therapy within two months of starting cyclosporine, something that was almost impossible to achieve on DMARDS. Furthermore we used cyclosporine as a maintenance drug after complete remission of the disease with promising results.

Keywords: Panniculitis, Weber Christian syndrome, Cyclosporine

11.64

ASSOCIATION OF SUGAR SWEETENED BEVERAGES USE AND OCCURRENCE OF DIABETES MELLITUS

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Background/Objectives: Consumption of sugar-sweetened beverages (SSBs) has risen across the globe and its regular consumption has been associated with weight gain and DM.

The association of SSBs consumption with obesity and higher insulin resistance has been attributed to multiple factors, including greater caloric intake, high fructose corn syrup content, less satiety and compensation, and a general effect of consuming refined carbohydrates.

Our study is planned to identify the consumption pattern and its outcome to improve our knowledge of DM, Thus providing healthcare providers a better understanding about the interrelationship between DM and SSBs and its consumption pattern on the basis of which, effective management plan including lifestyle modification can be developed that can minimize patients risk of developing DM and its adverse outcome.

Subjects and Methods: This case control study (211 cases and 211 controls) was conducted on patients at Aga Khan hospital. Brief history of other risk factors like, age, gender and dyslipidemia was taken. Demographic data was presented as simple descriptive statistics giving mean and standard deviation and qualitative variables were presented as frequency and percentages. Chi square was applied and odds ratio was calculated taking p-value of ≤ 0.05 as statistically significant.

Results: Out of a total of 422 patients, 211 patients were with diabetic and 211 were non diabetic. Out of 211 patients in case group, 160 (75.8%) and 51 (24.2%) consumed and did not

consume SSBs respectively. Similarly in control group, 93 (44.1%) and 118 (55.9%) consumed and did not consume SSBs respectively. Binary logistic regression analysis did not show association of sugar sweetened beverages with diabetes mellitus ($p=0.76$, OR 1.061, 95% CI 0.719-1.566).

Conclusion: Our study couldn't established positive link between SSBs and DM, though more people in case group were found to have high frequency of consuming SSBs (75.5%), than those in control group (44.1%), though case group along with consuming SSBs, had additional risk factor of dyslipidemia and probably other risk factors.

The above results shows that DM is multifactorial and more than one risk factors needed for a person to be diabetic which includes genetic make-up, basal metabolic index, use of certain medications, smoking, all probably play roll, so more extensive studies, studying all these risk factors are needed to study the association SSBs and DM in our population.

Keywords: Diabetes mellitus type 2, sugar sweetened beverages, dyslipidemia, metabolic syndrome.

11.65

CUTANEOUS ULCERS AS INITIAL PRESENTATION OF LOCALIZED GRANULOMATOSIS WITH POLYANGIITIS (GPA): A CASE REPORT AND REVIEW OF LITERATURE

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Background: Granulomatosis with polyangiitis (GPA) is an ANCA associated small vessel vasculitis characterized by necrotizing granulomatous inflammation involving the upper and the lower respiratory tract and the kidneys. The disease has a broad clinical spectrum that ranges from limited/localized involvement of a single organ system to a generalized systemic vasculitis that affects several organs with evidence of end organ damage. Atypical forms of the disease have been recognized with or without respiratory tract involvement with a long protracted course before manifesting as generalized disease.

Case presentation: We describe a 57 year old woman who presented with recurrent fever and cutaneous ulcers on her legs who was diagnosed to have granulomatosis with polyangiitis (GPA) after an extensive evaluation which excluded infectious, other vasculitides, connective tissue disease and malignant etiologies.

Conclusion: In the absence of typical manifestations, granulomatosis with polyangiitis (GPA) is indeed a diagnostic challenge to the physician. Atypical manifestations like unexplained recurrent fever and cutaneous ulcers nevertheless call for keeping a low threshold for the diagnosis of GPA as the disease can initially present in localized form before heralding into a generalized disease.

Keywords: Granulomatosis with polyangiitis, cutaneous vasculitis, Antineutrophil cytoplasmic autoantibody (ANCA)

11.66 MULTIPLE MYELOMA DISGUISED AS PULMONARY-RENAL SYNDROME IN YOUNG ASIAN MAN

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Background: Multiple myeloma is a malignancy of plasma cells associated with overabundance of M protein. It most often presents with bone pain or pathological fractures and is associated with a variety of complications, including renal failure. In the United States, only 3% of the patients are below 40 years of age. Pulmonary-renal syndrome, on the other hand, commonly occurs in autoimmune diseases with systemic vasculitis.

Case Presentation: A 35 year old Pakistani male presented to the emergency room with hemoptysis and hematuria, associated with epistaxis, pleuritic chest pain, shortness of breath, anemia and weight loss. Blood urea nitrogen (83 mg/dl) and creatinine (12.3 mg/dl) were both raised, indicating severe renal impairment. ANCA titers were negative. Investigations revealed minimal pulmonary hemorrhage. The patient was found to have *Pseudomonas aeruginosa* pneumonia and acute tubular-interstitial nephritis. Serum protein electrophoresis (SPEP) suggested monoclonal gammopathy and bone marrow biopsy revealed hypercellularity with plasma cells and depressed normal hematopoiesis, on the basis of which multiple myeloma was diagnosed.

Conclusion: This case highlights an unusual case of multiple myeloma presenting with hemoptysis, mild pulmonary hemorrhage and acute tubular-interstitial nephritis. This opens avenues for investigating further presentations for multiple myeloma and emphasizes the need

to consider the differential diagnosis in uncommon cases even in young patients.

Keywords: Multiple myeloma, pulmonary renal syndrome.

11.67

MYCOPHENOLATE MOFETIL FOR INDUCTION OF REMISSION IN LUPUS ENTERITIS: A CASE SERIES FROM A TERTIARY CARE CENTER

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Background: The gastrointestinal manifestations of SLE include lupus mesenteric vasculitis, also known as lupus enteritis, protein losing enteropathy, acute intestinal pseudo-obstruction, acute pancreatitis, inflammatory bowel disease and Celiac disease. Lupus mesenteric vasculitis (LMV) is a distinct clinical entity found in patients who present with gastrointestinal manifestations of systemic lupus erythematosus, and is the main cause of acute abdominal pain in these patients.

Materials and Methods: We describe a case series of four patients who presented with lupus enteritis to our centre. Laboratory features mostly reflected lupus activity: low complement levels, anemia, leukocytopenia or leukocytosis and thrombocytopenia. Median CRP level was 2.0 mg/dL (range 0–8.2 mg/dL). Acute kidney injury was present in 50% of the cases. Imaging studies revealed bowel wall edema (95%), ascites (92%), the characteristic target sign (98%), mesenteric abnormalities (88%) and bowel dilatation (96%). All patients received induction with high dose pulse methylprednisone 100mg IV once a day for

three days followed by high dose steroids. All patients also received Mycophenolate mofetil as part of induction as well as maintenance.

Results: All patients responded to high dose steroids and mycophenolate mofetil. Only 1 patient developed ileocecal perforation related to severe disease at presentation but survived the condition after undergoing laparotomy and ileostomy. Relapses were uncommon (25%) and managed with optimization of immunosuppressive regimen.

Conclusion: There are no head to head clinical studies on optimal management of lupus enteritis. There have been anecdotal reports of patients been managed with high dose pulse methylprednisone, cyclophosphamide and azathioprine with variable success. Mycophenolate mofetil (MMF) is an immunosuppressive agent that inhibits both B and T lymphocyte proliferation that appears promising as an agent of remission induction and maintenance in patients with lupus enteritis.

Keywords: Systemic lupus erythematosus, lupus enteritis, Mycophenolate mofetil

11.68

PALMOPLANTAR KERATODERMA: A RARE CLINICAL PRESENTATION OF MYCOSIS FUNGOIDES

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Background: Mycosis fungoides is the most common type of cutaneous T-cell Lymphoma which is characterized clinically by patches, plaques and nodules with atypical lymphocytes showing cerebriform nuclei on histopathology. Its worldwide incidence is approximately 0.36 per 100,000 population. It has an indolent clinical

course but in advanced stages there is extracutaneous involvement. Prognosis depends on age, sex, plaque thickness, nodal and visceral involvement. Treatment options are corticosteroids, phototherapy, chemotherapy and radiotherapy according to the stage of disease. Palmplantar keratoderma is a very rare clinical presentation of mycosis fungoides with scant case reports worldwide mostly from Korea and Japan.

Observation: We present a case of 55- year-old male who presented to the dermatology clinic with diffuse palmoplantar keratoderma and nail changes of four months duration .General physical and systemic examination was unremarkable and baseline investigations within normal limits . He was started on topical steroids and showed much improvement in three weeks. Skin punch biopsy for histopathology showed moderate lymphoid infiltrate composed of intermediate size cells admixed with histiocytes and neutrophils at dermoepidermal junction extending in to epidermis with CD3, CD4 with few CD 8 Cells identified on immunostaining.. Thus a diagnosis of patch stage of mycosis fungoides was made and patient referred to oncologist for further workup to exclude any lymph node or systemic involvement.

Conclusion: Mycosis fungoides presenting as palmplanter keratoderma (Mycosis fungoides-palmaris et plantaris) is a rare entity. Our patient also has nail changes which is another rare feature. There is no published data in literature from our region.

Keywords: Mycosis fungoides, Palmplantar keratoderma ,Cutaneous T-Cell Lymphoma.

11.69

SHABBIR SYNDROME (LARYNGO ONYCHO CUTANEOUS SYNDROME) A RARE GENETIC VARIANT OF EPIDERMOLYSIS BULLOSA

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Introduction: Shabbier syndrome is an autosomal recessive disorder that leads to abnormalities of the larynx, nails and skin. Symptoms are due to abnormal growth of granulations tissue. The first symptoms in infants are hoarse cry. Granulation tissue grows in eye and cutaneous erosion affecting the face, limbs and genet ilia. The nails are dystrophic with notched teeth. It is a subtype of mechanobillous disorder, Junctional Epidermolysis Bullosa.

Case presentation: 14 months old girl presented with erosions and blisters over face, neck and mons pubis followed by growth in eye for 4 month. Heamorrhagic blisters started at the age of 4 month followed by nail dystrophy.She were delivered through LSCS, developed chest infection with feeding difficulty and hoarse cry. On examination erosions, and blisters present over face, neck and groin along with eye lid swelling. Nails were dystrophic .oral mucosa, scalp and teeth were normal with hoarseness of voice. She was treated with topical antibacterial, mild steroids and emollients.

Discussion: The diagnosis is typically clinical, no specific diagnostic test except for the chorionic villous sampling during 10th week of gestational amenorrhea .It is described by Dr Shabbir, and included 22 patients from 13 mostly consanguineous Pakistani families, within 2 weeks of birth. The disorder had been reported in Muslim families of Punjab origin. Death in the childhood was common, remission

occurred during the second decade. Ultra structure features of the hemidesmosomes consistent with Junctional EB, and mutations occur in the LAMA 3 gene.

The current case is another rare and interesting case belongs to Punjab, has all the features of LOC SYNDROME.

Keywords: junctional eb. Autosomal recessive, laryngo onycho cutaneous,

11.70

ERUPTIVE XANTHOMAS AND XANTHELASMA ASSOCIATED WITH HYPERCHOLESTEROLEMIA AN UNUSUAL CLINICAL PRESENTATION

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Introduction: Hypercholesterolemia is a type of dyslipidemias characterized by elevated level of cholesterol, LDLs. It leads to atherosclerotic plaque formation, ischemic heart disease and stroke. Its Skin manifestation includes xanthelasma palpebrarum, arcus senilis and xanthoma of different types. We are going to present an interesting, rare case of eruptive xanthoma associated with hypercholesterolemia without hypertriglyceridemia.

Case Presentation: A 34 year old obese gentleman presented with yellow colored asymptomatic papules and plaques distributed all over the body since childhood. He didn't had other systemic complains. There is family history of similar eruptions and sudden cardiac death in father and brother. Skin examination showed xanthelasma, eruptive xanthomas, and tuberous xanthoma on elbows neck and back and around eyes. Rest of examination was within normal limit. Laboratory workup showed

elevated serum cholesterol and normal triglycerides. Skin biopsy showed hyperkeratosis, flattening of the rete ridges and large islands of foamy histiocytes, features favoring Eruptive Xanthomas. He was started on statin and lifestyle modification and advised TCA ablation of xanthelasma and excision of xanthomas for cosmetics purpose.

Discussion: Familial hypercholesterolemia (FH) is an autosomal dominant condition characterized by high total cholesterol and LDLs. Frequent tendon xanthomas and premature onset of cardiovascular disease (CVD) are cardinal manifestation of FH. However our patient didn't have tendinous involvement. Eruptive xanthomas are usually associated with hypertriglyceridemia, but interestingly our patient did not have hypertriglyceridemia.

Conclusion: We presented this case as it's an unusual presentation of the tuberoerutive type because the triglycerides levels were normal along with all the features of FH, which is rarely reported .

Keywords: Hypercholesterolemia, xanthomas, hypertriglyceridemia

11.71

A CASE REPORT-POLYMYALGIA RHEUMATICA IN A YOUNG PATIENT

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Background: Polymyalgia rheumatica (PMR) is a common chronic inflammatory rheumatic disease of the elderly with a mean incidence of age at diagnosis of 72 years, however there is remarkable diagnostic uncertainty in diagnosis of PMR, particularly in younger patients.

Furthermore, the diagnostic criteria for PMR include age of the patient greater than 50 years. Therefore, the incidence of PMR in patients younger than 50 years becomes unlikely and questionable. On the contrary, PMR is a diagnosis of exclusion and can present with its clinical spectrum in younger people. We present an unusual case of a 21 year old patient diagnosed with PMR, who presented with a one year history of proximal muscle weakness, undocumented fever, and arthralgia and reduced motor power, along with, subsequent improvement with steroid therapy.

Case Report: We, hereby, report the case of a 21 year old female with no prior co-morbid, who presented with the characteristic clinical features persistent with PMR including a prolonged history of undocumented fever, arthralgias, body aches for 1 year. It was associated with fatigue, morning stiffness, and proximal muscle stiffness, difficulty walking and standing from sitting position. Extensive autoimmune and infectious workup was carried that came out to be negative. Consequently, the patient was diagnosed with PMR. However, the only factor not in the favor of this diagnosis was the young age of the patient. Furthermore, the patient showed tremendous improvement in the overall condition and functional capacity with steroid therapy and untoward stable state after discharge.

Conclusion: Polymyalgia rheumatica is a disease of elderly, but when clinical presentation occurs in young age, the diagnosis should be considered in the differentials after ruling out polymyositis and other connective tissue disease

Keywords: Polymyalgia rheumatica, diagnosis, young age

11.72

ACUTE LIMB ISCHEMIA MIMICKING AS COLD AGGLUTININ DISEASE; A CASE REPORT

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Background: We present here a case of cold agglutinin disease with an unusual presentation
Case: 70 year old gentleman, presented to us with complaint of Blackening of left foot toe for one week. There was no swelling in affected area rather there was drying of affected area. There was no prior history of any trauma, wound, blister formation of that foot There was undocumented weight loss. He was a diabetic which was diagnosed recently. On examination, dry gangrene of all toes of left foot symmetrical involving all toes with demarcation line at metatarsophalangeal joint line On palpation there was no tenderness, dorsalis pedis artery palpable on both feet with good volume. No sensation on gangrenous area. Touch and pressure sensation intact on contralateral foot. Initial Lab workup revealed :HB 6.2/Hct 2.4, MCV 109,MCH 280, WBC 9000/N 75%, PLT 443, Random Blood Sugar 130, HbA1c 6.7 ,BLCS –ve, LA 1,FA 12 (Normal) ,B12 Level - 466, ANAG –ve. Workup for multiple myeloma was negative Ct angiogram lower limbs was done to rule out arterial disease; No evidence of stenosis, no thrombosis. All three vessels seen up to the feet which were all normal. CT abdomen, pelvis, Chest was done to rule out malignancy which was normal except mucosal thickening of stomach so Endoscopy and colonoscopy was done which came out to be normal. No cause of gangrene and ongoing anemia was found, So decision of Bone marrow

was done. Bone marrow trephine done to rule out lymphoma/leukemia which revealed: Normal Smear, no evidence of lymphoma, good cellularity, Trephine normal, Coombs positive, IgM normal level, Cold agglutinin was sent subsequently which turned out to be strongly positive. This was also confirmed on Peripheral In management Gangrenous foot was amputated. He was transfused blood and was started on steroids for treatment of cold agglutinin disease He later followed up in clinic and was doing well

Conclusion: Cold Haemagglutinin disease should be considered in differential of peripheral gangrene specially in people of cold environments. Cold haemagglutinin can be diagnosed on seeing the disparity of Red cell indices of automatic analyzers.

11.73

FREQUENCY OF CIPROFLOXACIN RESISTANCE IN PATIENTS WITH E. COLI INDUCED URINARY TRACT INFECTION

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Background: Urinary tract infection (UTI) is a bacterial infection that affects any part of the urinary tract. The most common organism implicated in UTIs (80–85%) is [E.coli](#). With the development of resistance a combination of trimethoprim and sulfamethoxazole was replaced with Ciprofloxacin. This study was designed to study the frequency of resistance of ciprofloxacin to E.coli.

Objective: To determine the frequency of ciprofloxacin resistance in patients with E. coli induced urinary tract infection admitted in Aga Khan University Hospital

Study Design: Cross Sectional Study.

Setting: Department of General Medicine, Aga Khan University Hospital, Karachi Pakistan.

Duration: From 5th August 2015 to 4th February 2016.

Material and Methods: Total 83 patients of both genders, aged 16-60 years, and presented with urine culture growing E coli as offending bacteria were included. Their sensitivity pattern with ciprofloxacin was noted. Descriptive statistics were calculated. Chi square test was applied post stratification and p value ≤ 0.05 was considered as significant.

Results: There were 27 male and 56 female patients. The mean age was 48.53 ± 12.35 years. The ciprofloxacin was found resistant in 79.5% cases and sensitive in 20.5% cases. The results showed that ciprofloxacin was found resistant in 22 male patients and 44 female patients. The association of ciprofloxacin resistant was found not significant with gender, age, and duration of disease.

Conclusion: It was concluded that ciprofloxacin was highly resistant in E.Coli induced urinary tract infection.

Keywords: Urinary Tract Infection, E.Coli, Ciprofloxacin, Resistance.

11.74

ASPRIN IN PRIMARY PREVENTION OF MYOCARDIAL INFARCTION/ANGINA AND STROKE IN HYPERTENSIVE PATIENTS

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Backgrounds and Objectives: Cardiovascular disease is a leading cause of death worldwide. Nearly 30% of all the deaths in low and middle

income countries in due to cardiovascular disease. It is therefore important to know whether use of aspirin in hypertensive patients is beneficial or not. The objective of this study is to determine the association of history of aspirin use and Cardiovascular disease (including myocardial infarction/ angina and stroke) in hypertensive patients at Aga Khan University Hospital.

Method: It is a cross-sectional study of patient's age > than 40 with history of hypertension admitted through ER with MI/Angina or stroke at Aga Khan University Hospital between 2010-2012. Hypertension was defined as SBP > 140 mm Hg and DBP > 90 mm Hg. Those who did not get admitted to the hospital from ER were excluded. Data was collected for blood pressure, ECG changes, troponin values, CNS imaging, and use of Aspirin. The outcome was MI/Angina or stroke and the exposure was use of aspirin. For statistical analysis mean (SD) were used for quantitative variable and frequency (%) for qualitative variable. Chi square test and logistic regression was used for determining association of aspirin use with CVD

Results: A total of 567 patients were included in the study. Mean (SD) age was 63.96(11.67) years of which 372(64.7%) were males and 201(35%) were females. In comorbid conditions 302(52.5%) had Diabetes mellitus, 256(45.1%) had myocardial infarction, 193(33.6%) had stroke. In outcome, 343(59.7%) had MI/Angina {183(31.8%) had NSTEMI and 73(12.7%) had STEMI}. 193(33.6%) had stroke. Aspirin use was present in 330(57.4%) of patients. Out of the 343(59.7%) who had MI/Angina, 208/343 (60.6%) were on aspirin for up to 1 month prior to the ER visit, Out of the 193(33.6%) stroke patients, 99/193(51.3%) were on Aspirin. The OR for association of use of aspirin with Myocardial Infarction/angina was 0.76(95% CI 0.5, 1.0) p 0.06. After Adjusting for age and gender the association was 0.72(95% CI 0.5,

1.0) p 0.06. The association remained in the same direction 0.8(95% CI 0.51, 1.2) p 0.3 in the final model after adjustment for age, gender and comorbid conditions. The OR for association of use of aspirin with Stroke is 0.69(95% CI 0.49, 0.9) p 0.04. After Adjusting for gender and age the association remained the same that is 0.7(95% CI 0.49, 1.0) p 0.7. In the final model the association for use of aspirin and stroke was 0.7(95% CI 0.5, 1.1) p 0.2 after adjusting for age, gender and comorbid condition

Conclusion: Almost half of patients with MI/Angina and stroke were on aspirin as a primary prevention therapy in hypertensive patients. However from this study, we did not find any clear evidence that use of aspirin was protective in prevalent MI/Angina or Stroke. More studies are required with a better study design to confirm our findings.

11.76

INDEPENDENT PRESCRIPTION OF MEDICINES AND DIAGNOSTIC TEST ADVICE BY FINAL YEAR MEDICAL STUDENTS IN PUNJAB, PAKISTAN. A MULTICENTER CROSS SECTIONAL STUDY

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Background: In Pakistan, medicines sale is not rigorously controlled. Due to this culture medical students in Pakistan start prescribing medicines and advising diagnostic tests before they graduate. This study was done to see the frequency of independent medical prescription by final year medical students.

Method: A cross sectional study was done on 180 stratified randomly selected final year medical students from three Public medical colleges of Punjab (NMC, QMC, PMC). Stratification in selection was based on gender as male to female ratio was 2:3. Data was obtained on self-administered questionnaire. Data was double entered in SPSS 17. Frequencies were calculated. Chi test was applied for significance over stratified data.

Results: 112 (65%) of all had prescribed medicines independently without any supervision. Only 38 (34%) done physical examination before prescribing. 74 (43%) of all medical students under study had advised diagnostic tests and 49 (29%) had interpreted diagnostics test independently. 44 (26%) of all students had administered Injectable and alarmingly one third of these were administered without seeing expiry dates. Most common prescribed medicines were NSAIDs (92% of all prescription) and antibiotics (73% of all prescriptions). Most common advised tests were CBC, Chest Xrays and Urine DR. 127 (74%) participants thought that medical students should not prescribe medicines. There was significant relationship between gender of student and prescription practice ($p=.001$) There was significant relationship between household income and prescription practices. ($p 0.008$)

Conclusion: Large number of final year medical students had prescribed medicines and advised tests before graduation.

Keywords: Independent Prescription, Medical students, Diagnostic Tests,

11.77 PSYCHOSOCIAL PROBLEMS OF PAKISTANI PARENTS OF THALASSEMIC CHILDREN: A CROSS SECTIONAL STUDY DONE IN BAHAWALPUR, PAKISTAN

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Background: Thalassemia is a blood disorder passed down through families (inherited) in which the body makes an abnormal form of hemoglobin. This disorder results in excessive destruction of red blood cells, and there is no effective treatment. Patients require lifelong blood transfusion, usually started within 6 to 12 months of birth of patient, which on other hand has its own complications. It is a chronic disease that manifests so early in life that it leads to psychological and social problems for parents. We focused on parents to assess the impact of their child's disease.

Methods: This cross sectional study was conducted among the parents of thalassemic children attending THALASSEMIA CENTRE, BAHAVAL VICTORIA HOSPITAL (BVH), BAHAWALPUR, PAKISTAN during the year 2011. All Parents who brought their children for blood transfusion were approached during the study period from 9 am to 1 pm 5 days a week, excluding Sunday and public holidays. A self-designed questionnaire was used that contained questions regarding psychological and social aspects. Patient Health Questionnaire-9 (PHQ-9) was used to assess the depression of parents of thalassemic children.

Results: Of the 100 parents interviewed, the majority were mothers (71%). 29 percent of the parents had moderate to severe depression.

There was a significant relationship between respondent education and depression ($p < 0.05$). Only 8 percent reported that the disease of their child had not affected their daily routine work. 23 percent had conflicts with their spouse due to their child's disease. The majority of the parents (76%) said that they would have terminated their pregnancy if thalassemia had been diagnosed prenatally. The mean depression score of mothers as assessed by PHQ-9 was 8 ± 5.5 , while for fathers this value was 5 ± 4.9 .

Conclusion: A substantial number of parents have psychosocial problems due to the disease of their child. Parent counseling is needed on regular basis.

Keywords: Parents, Psychological morbidity, Thalassemia, Social relationship

11.78

TO DETERMINE THE FREQUENCY OF HYPOGLYCEMIA ON INSULIN INFUSION IN T2DM PATIENTS ADMITTED TO MICU

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Background/Objectives: Hyperglycemia frequently occurs with acute medical illness, especially among patients with cardiovascular disease, and has been linked to increased morbidity and mortality in critically ill patients. Conventional blood glucose values of 140–180 mg/dL are considered desirable and safely achievable in most patients. More aggressive control to <110 mg/dL remains controversial, but has shown benefits in certain patients, such as those in surgical intensive care. Intravenous infusion is often used for initial insulin administration for tight glycemic control. The practice of tight glycemic control has been adopted in many clinical settings, and although beneficial patient outcomes have been clearly documented, the therapy poses potential risks to patient safety related to hypoglycemia.

Methods: Cross sectional study, conducted at AKUH. Data was prospectively collected from patients after taking a verbal consent and permission from ethical review committee. 164 diagnosed patients of DM who met the diagnostic criteria were included. Brief history was taken and demographic information was entered in the performa. 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 164 patients mean and standard deviation of age, duration of disease and BMI was 53.14 ± 7.49 years, 8.98 ± 3.28 and 29.72 ± 1.89 kg/m² respectively. 49 (29.9%) were male and 115 (70.1%) were female. Out of 164 type II diabetes mellitus patients on insulin infusion, 27 (16.5%) and 137 (83.5%) developed and did not develop hypoglycemia on insulin infusion.

Conclusion: Insulin infusion therapy is associated with a marked and sustained reduction in the rate of severe hypoglycemia without adversely affecting the level of glycemic control attained during the therapy. As a result, tight glycemic control in critically ill adults is now recommended.

Keywords: Diabetes mellitus type II, hypoglycemia and insulin infusion.

11.79

ACUTE MOTOR AXONAL NEUROPATHY AND HYPOPARATHYROIDISM IN HIV INFECTION: AN UNUSUAL CLINICAL PRESENTATION

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Introduction: HIV associated neuropathies have been seen at all stages of disease and with variety of presentations, however acute motor axonal neuropathy has infrequently been reported in patients infected with HIV. In this condition, there is selective involvement of motor nerves and axonal involvement on electrophysiology. It can start as a cranial mononeuropathy or as polyneuropathy, that can further be divided as symmetrical motor polyradiculo-neuropathy and lower motor neuron syndromes. We report on a patient who was diagnosed to have HIV associated mononeuropathy with concomitant hypoparathyroidism.

Case Presentation: A 53 -year -old man was admitted with history of progressive bilateral lower limb weakness associated with diarrhea , vomitings and lethargy since two weeks. His prior history was significant for chronic hepatitis B reactive which was treated successfully. On examination he was drowsy but arousable, hyporeflexic, strength was 4/5 on MRC scale bilaterally with a flexor plantar response and also had a left sided lower motor neuron facial weakness. He was dysarthric and had a weak gag reflex. On workup , he was found to have decreased levels of parathormone, level of <3pg/ml despite correction of hypomagnesemia. He tested positive for HIV antibody which was checked due to his significant travel history and employment abroad away from his hometown. Although his diarrhea resolved, the lower extremity weakness persisted necessitating nerve conduction study (NCV) to elucidate the underlying cause for paraparesis and it was strongly suggestive of motor axonal polyneuropathy. Moreover, MRI brain with contrast was negative for meningeal enhancement and showed bilateral basal ganglia calcifications , strongly associated with hypoparathyroidism.

Conclusion: Peripheral neuropathies have been seen in HIV infected patients, caused either by immunological dysregulation or a result of direct invasion by the virus. However, concomitant occurrence of HIV associated hypoparathyroidism with basal ganglia calcifications with this clinical presentation is the first of its kind.

Keywords: HIV polyneuropathy, hypoparathyroidism, basal ganglia calcifications

Neurosciences and Mental Health

12.1 QUALITY OF LIFE IN INDIVIDUALS SURGICALLY TREATED FOR CONGENITAL HYDROCEPHALUS DURING INFANCY

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Introduction: Congenital Hydrocephalus is a frequently developed birth anomaly which can hinder the long-term neurological maturity and social well-being, making children prone to develop seizure disorders, cognitive decline and mental retardation. The perceived impact of health-impairing condition on quality of life (QOL) is different if the disease is congenital, acquired early in life or at a later stage.

Objective: To assess the quality of life 10-20 years after surgical treatment for primary congenital hydrocephalus during infancy at a tertiary care hospital in a developing country.

Methods: This was a retrospective cohort study, including individuals who presented at Aga Khan University Hospital (AKUH), Karachi, between 1995 and 2005, at age less than 1 year, and had undergone surgery for primary congenital hydrocephalus. Files were retrieved using ICD 9 coding system. Hydrocephalus Outcome Questionnaire (HOQ) was used after permission from Kulkarni et al., to access the outcomes with respect to QOL. Score of 0.00 = "worse health status" & Score of 1.00 = "better health status". Information was also collected on demographics and complications of surgery using a structured proforma. Statistical analysis was done using SPSS Version 21.0 Inc. Continuous data is presented as Means with Standard Deviation or median with IQR as appropriate. Categorical data was presented as frequencies and proportions. Non parametric tests including Independent sample Mann-

Whitney U-test, and Kruskal-Wallis Test were used to compare continuous data. P- value of *Conclusion:* Congenital Hydrocephalus and its management in the developing countries pose a big social burden on the families. These children have a poor quality of life and dependency when compared to similar children in developed countries. This requires measures such as parental education, arranging long-term follow-up and multidisciplinary approach with involvement of neuro-rehabilitation specialist and pediatric psychologist to achieve better social outcomes in their life.

Keywords: Quality of Life, Congenital Hydrocephalus, Infancy

12.3 CORRELATION OF EPILEPSY AND DEPRESSION: AN OBSERVATIONAL STUDY CONDUCTED AT JPMC KARACHI

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Background: Epilepsy is a chronic disorder that has complex interactions with social, vocational, and psychological functioning. Depression is most common co-morbid psychiatric disorder in epileptic people. The higher rate of depression has been reported in epileptic people as compared to the general population. Prevalence of depression is reported greater than 30% in community-based epilepsy centre 1, 20 to 55% in patients with recurrent seizures and 3 to 9% in patients with well-controlled seizure 2. *Material and Methods:* An observational study conducted on 299 epileptic patients, recruited from outpatient clinic of Neurology Department of Jinnah Postgraduate Medical Centre (JPMC),

Karachi, Pakistan from March to October 2009. Ethical approval was obtained from the Department of Psychiatry, JPMC Karachi. The Neurological Disorders Depression Inventory for Epilepsy (NDDI-E) questionnaire 3 for rapid detection of depression in epileptic patients was filled by each patient after taking informed consent. NDDI-E scores above 15 are considered positive for major depression with specificity of 90%, sensitivity of 81%. Data were analyzed by using SPSS version 18.

Results: Out of 299 patients 62% were male and 38% were female with mean age 25±7 year. Mean age at onset of seizure was 15 year. NDDI-E score showed 30% patients who feel everything struggle, 29.73% nothing I do is right, 21% patients feel guilty, 31% patients feel better off dead, and 30.74% patients were frustrated mostly.

Conclusion: Depression is commonly associated with epileptic patients. In our study NDDI-E scoring was 53 % in <15

Keywords: Epilepsy, depression, NNDI-E (Neurological Disorders Depression Inventory for Epilepsy)

12.5

ATTACK ON SCHOOL CHILDREN; DID WE PAY BACK

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Purpose: To draw the attention of health care providers toward PTSD and enhance positive coping in community via awareness.

Methodology: Recent attack in Army Public School Peshawar of Pakistan is supported with recent literature to create awareness in general public in order to enhance positive coping in selected community. PTSD is a mental condition that develops following a traumatic event which they experience directly or indirectly. Such

events include disasters, abuse, terrorist attacks, car accidents, fire etc .It can occur in all age groups but children are more vulnerable and respond differently according to their developmental level .However anxiety, hyperactivity, sleep difficulties, depression is seen in them. It is reported a year back in Daily dawn that total 132 children's parent have flash backs of that traumatic. According to Prakash J, et al (2015) PTSD is provoked by remembrance of traumatic events, flash backs, horror dreams. It is not only causative factor health care provider should know the proper management of sign and symptoms. According to Jansen, S, et all (2015) to manage ptsd health care provider should know that what is difference between acute and post traumatic sign and symptoms .
Clinical Implications: Health Care providers and school counselors play a vital role via proper assessment and referral of victims. So it can be managed in its early phase easily with the proper collaboration with nongovernmental and school organizations. Moreover teachers and parents also play a vital role since they are in direct contact with children.

Result: After a complete monitoring of the children a year back that were under the attack and were managed to save their life somehow but that created a hug impact on their minds, we found out that the children were under many problems some of them that they suffered were post traumatic events, fear, horror dreams which were considered very difficult for us to eliminate and that ultimately creates problems for children to even sleep properly. So, we are trying in our study to reduce the stress level and we managed to do it.

Conclusion: Children under this attack were so depressed and horrified that they were not in a proper state of mind. Children were so fearful that they didn't allow anyone closed to them even their parents. So, we are trying in our study to overcome these state of mind and problems so that children can live a normal life in future.

Keywords: PTSD, Rehabilitation, positive psychology

12.6

HYPERTONIC SALINE: SAFE THERAPY FOR CHILDREN WITH ACUTE BRAIN INSULT IN EMERGENCY DEPARTMENT OF MIDDLE INCOME COUNTRY

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Hypertonic saline (HTS) has been used for some years to treat elevated intracranial pressure in children in high income countries. There is limited safety data from middle income countries.

Objective: The objectives of this study was to assess the response and safety of intravenous administration of hypertonic saline in children with acute brain injury presenting to the pediatric emergency department (PED) of Aga Khan University Hospital (AKUH).

Methods: A retrospective, chart review of children who received intravenous HTS in the pediatric emergency department because of acute brain injury (ABI).

Result: From January 2013 to December 2013, 216 children received intravenous bolus of 3% HTS as part of their initial management in the PED. The median age of the patients was 6.1 years (1 month to 16 years) and a median dose of 5 mL/kg with 98% of doses given via peripheral line between 30 minutes to one hour. Significant improvement was observed in hemodynamics ($p= 0.03$) and GCS (0.001) after 3% HTS therapy. Clinical phenotypes included: depressed consciousness (75.5%), seizures (24%) and shock (0.5%) and diagnosis included traumatic brain injury in 110 patients (50.9%) and non-traumatic injury 106(49.1%) including CNS infection (43.4%), intracranial bleeding

(7.5%), acute hepatic failure (10.4%), diabetic ketoacidosis with altered mental status (4.7%).
Conclusions: We found 3% HTS was safe and effective in children with ABI.

Keywords: Hypertonic saline, Traumatic brain injury, Depressed consciousness

12.7

ASSOCIATION OF DELIRIOUS MANIA WITH JINN POSSESSION PHENOMENON- A STUDY FROM PAKISTAN

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Delirious mania (DM) is a neuropsychiatric syndrome, which is believed to develop abruptly during severe manic or mixed episode, and has episodes of fluctuation in consciousness, attention, and cognition often with catatonic symptoms. It may present as Jinn Possession (JP) phenomenon due to prevailing cultural beliefs in the Pakistani society. For this reason it remains significantly under diagnosed and patients are prevented from getting the treatment they require. Recognizing the association between these two is important for health care providers to reduce the rates of untreated illness and morbidity associated with it. Our study was a prospective analysis of 82 patients previously diagnosed with Bipolar Disorder (BD) at a tertiary care hospital in Karachi, Pakistan. 25% of all people diagnosed with BD had DM, mostly female (80%). Of the 21 people with DM 8 (38%) had features of JP and 7 out of 8 were females. 11 people with BD but without DM also had features of JP (18%) and 9 out of 11 were females. Total number of people with JP

was 19 out of which 8 (42%) had DM. Due to the deeply religious mindset of the Pakistani society psychiatric illnesses are more likely to present as hyper-religiosity and jinn possession demonstrated by the results of this study. Additionally a higher percentage of patients with JP were found to have DM than BD.

Keywords: Delirious, Mania, Jinn

12.8 PSYCHOLOGICAL IMPACT OF SOCIAL VIOLENCE ON CHILDREN, A LITERATURE REVIEW

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Introduction: The article describes a case scenario of a child who suffered through psychological disturbance after being the observer of Saniha Sofaora incident where her father was murdered in front of her.

Furthermore, it contains different aspects of social violence that alters child's psychosocial development.

Method: A systematic literature review was done in which multiple resources and search engines such as science direct, CINAHL, Google and pub med were used to identify and describe the causes as well as effects of social violence on children's' psychological wellbeing.

Results: It was found out that social violence badly affects the child's physiology and psychology like decreased concentration ability, nightmare, aggression, anxiety, adjustment problems and social isolation. Some effects last shortly but some effects are long term that it affects the child's personality in future so this needs to be undertaken very seriously.

Recommendation: To deal with these issues health care providers must perform several interventions such as ensuring child's safety, parental awareness about effective parenting, teachers' training sessions to improve and enhance children's capacities, cognitive behavioral therapies like recreational activities etc. and psychological counselling play a vital role in managing their illness.

Keywords: social violence, bullying, delinquent behaviors

12.9 EPILEPSY IN BIRDS: A NOVEL APPROACH TO STUDY THIS DISORDER

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Introduction: Epilepsy, a disease characterized by occurrence of two or more unprovoked seizures, affects over 50 million people worldwide. Despite extensive research, seizures remain refractory in 30% of patients. New research models need to be developed in order to better understand this disease.

Objective: To investigate the possibility of using different species of birds as a novel model of epilepsy. *Methodology:* The response of Australian Parrots (APs) and Sparrows (SPs) to a pro-epileptic drug, Pentylene tetrazole (PTZ), was investigated. First, APs and SPs were injected with saline intraperitoneally to get them accustomed to handling and injecting. After 30 minutes they were injected with 25mg/kg, 50mg/kg and 75mg/kg PTZ or saline. The behavior of birds was video recorded and analyzed. *Results:* Myoclonic jerks (MJs) and tonic clonic seizures (TCS) were observed in both species. The frequency of MJs in APs was

greater at the dose of 75 mg/kg compared to both 50 mg/kg and 25 mg/kg of PTZ, while it was not significantly different in SPs. The frequency of MJ was significantly greater and latency was lesser in APs compared to SPs. However, SPs had a shorter latency for developing TCS.

Conclusion: This study shows that APs are more predisposed to have early and more frequent MJs in response to PTZ, while SPs are more likely to directly develop TCS. These findings show that birds can be used to study different aspects of chemically induced epilepsy.

Keywords: epilepsy, birds, seizures

12.10

FOCUS GROUP PSYCHOTHERAPY: AN INNOVATIVE APPROACH IN MENTAL HEALTH SETTINGS

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Background & Objective: Mentally ill clients lack social skills that are important in the functional adjustment and rehabilitation of these clients with various psychiatric disorders. Group therapy is considered as an important non-pharmacological treatment for patients with dysfunctional social behaviors in mental health settings. This observational study aimed to identify the effectiveness of focus group psychotherapy (FGP) for enhancing social skills among mentally ill clients.

Method: A mix of survey and observational approach was employed to achieve the study objective. A total of 30 patients with different mental disorders were recruited from the Psychiatric rehabilitation center Karachi.

Consecutive sampling strategy was used. The data was collected through interviews, using a self-developed tool over a period of six weeks (from 18th August to 2nd October 2015). Descriptive statistics (i.e. percentages & proportions) were utilized for data analysis using SPSS version 19.

Results: The study revealed group psychotherapy as a meaningful technique for mentally ill clients. Seventy six percent (76%) of the study participants considered newly introduced intervention (i.e. FGP) significant for their positive health outcomes as compared with the standard activities that were individual psychotherapy (72%), Illness management Recovery group (52%), self-grooming (24%) and embroidery (17%). Focus group therapy was found effective to enhance a client's focus, develops confidence to express their thoughts and feelings, and conflict management. Moreover, it also helps in building therapeutic relationship and socialization, with other patients through social support group.

Conclusion: In conclusion, focus group psychotherapy is an effective strategy in developing mentally ill client's social skills. Therefore, it is a useful intervention to promote mental health of clients' and for the health care professionals working in a mental health facility.

Keywords: Psychotherapy, Group Therapy, Focus Group Therapy

12.11
GENETICS IN
PSYCHIATRY – DIAGNOSTIC SUPPORT
OR AN ILLNESS CLASSIFICATION!

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Introduction: Psychiatric diseases are basically dependent upon phenomenology, other than a few conditions where the focus is on purely the medical condition. The changing and evolving picture of psychiatric nosology inculcates genetic findings as well. It has helped clinicians in understanding the disease pathology, its course, prognosis and the intervention options.

Method: This comprehensive, pedagogically-oriented review is aimed to include different advancements in genetic association studies along with various terms and findings in psychiatry, which have facilitated deeper understanding of illness at the genetic and molecular level.

Result: Findings on Alzheimer's disease, Autism spectrum disorder, schizophrenia and eating disorders are discussed. Existing interventions can be further modified by addition of modulators, inhibitors of A-beta aggregation, immunotherapy and inhibitors which can be generated on the basis of

Conclusion: Genetic findings and interventions can help in early diagnosis and prevention which can alter the illness course and improve the prognosis of any disease.

Keywords: Genes, Psychiatry, Genetic association studies

12.12
INSIGHTS INTO REPRODUCTIVE
PSYCHIATRY: A LITERATURE REVIEW

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Introduction: Research suggests that oestrogen serves as a protective hormone against psychosis in females, and that women are most prone to acute psychotic states during their menopausal years.

Method: This review article scrutinizes the role of male and female reproductive hormones on behavioural and psychological levels.

Result: Estrogen-driven dopamine levels are regulated, as shown by strong evidence that younger females are less likely to experience psychosis than older women. However, higher testosterone levels in males can cause an upsurge of dopamine levels, making younger men more prone to psychosis than older males.

Conclusion: The role of reproductive hormones on dopamine levels and the risk of psychosis are interlinked factors. The alteration in hormonal states influence ones mood, behaviour and thought pattern

Keywords: Keywords: Reproductive psychiatry, Menopause, Estrogen

12.13 MANAGEMENT AND OUTCOMES OF INTRAMEDULLARY SPINAL CORD TUMORS; A SINGLE CENTER EXPERIENCE FROM A DEVELOPING COUNTRY

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Background: Intramedullary spinal cord tumors (IMSCT) are rare and may cause severe disability. Surgical resection is the mainstay of treatment. Achieving maximum resection without neurological deterioration is a challenge. Reports of management and outcomes of IMSCT from developing countries are few. Our objective was to review the presentation, management and outcomes of IMSCT.

Materials And Methods: This was a retrospective review of medical records of adult patients undergoing surgery for IMSCT over 12 years. Institutional ethical review committee approved this study. Data was collected according to a pro-forma. Modified McCormick Scale was used for grading patients' neurological status at admission, post-operatively and at follow-up. Statistical analysis was done using SPSS Inc. version 22.

Results: Forty three cases including 27 males were reviewed. Mean age was 33.8 ± 15.1 years while median follow-up was 5 months (range 0.25-96 months). The most common histopathology was Ependymoma (n = 16; 73%). Cervical region was most commonly involved (n = 15; 34.9%). Gross total resection was achieved in 30 cases (69.8%) and Maximum safe resection was performed in 11 cases (25.6%). The preoperative McCormick grade was significantly associated with Follow-up McCormick grade (p-value = 0.002). Eight

patients (18.6%) underwent intraoperative electrophysiological monitoring out of which gross total resection was achieved in all cases and none had disease progression or recurrence. Ten patients received post-operative radiotherapy. Thirty five patients (81.4%) had progression free survival at last follow-up. *Conclusions:* Preoperative neurological status is associated with good post-operative functional outcome. Gross total resection has better progression free survival.

Keywords: Spinal Cord, Intramedullary Spinal Cord Tumors, Modified McCormick Scale

12.14 SIGNIFICANCE OF LIMIT SETTING IN PSYCHIATRIC CLIENT

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Introduction: A big challenge with psychiatric clients are their inappropriate social behavior. This behavioral issue can be improved by limit setting. Limit setting help in disciplining client behaviors by informing about acceptable and unacceptable behavior's, and out turns of unacceptable behaviours in a non-punitive manner. Moreover, it is an effective technique for communication with a psychiatric client in calm and respectful manner.

Method: Descriptive literature review approach was taken placed to explore the significance of limit setting. The search engines include: science direct, CINHALL, Pub med and Google.

Results: With literature review we analyzed that, limit setting is an effective approach to reinforce positive behaviors and limit maladaptive behavior in psychiatric client. Furthermore, a health care provider can implement limit setting

in hospital setting by using CARE (Containment, Awareness, Resilience, and Engagement) framework (McAllister & Walsh, 2003). At community level we can counsel family members to set limits on client inappropriate behavior. And, at institution levels, policies for patients regarding limit setting should be made and review and training of nursing and medical staff in dealing clients with behavior management issues should be done.

Conclusion: In conclusion, behavioral issues are commonly observed in psychiatric clients. Limit setting is helpful in behavioral management which helps to reduce society stigmas, increase acceptance of psychiatric client, and reduce consequences of maladaptive behaviors.

Keywords: limit setting, maladaptive behavior, psychiatric client

12.16 PERCEPTION OF PATIENTS AND PHYSICIANS REGARDING SPIRITUALITY: A PILOT STUDY

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Background: Spirituality is defined as “an inward state of connectedness with God”. Spirituality is an important part of social sciences as well as of human evolution and transcendence. Spirituality also plays an important part in coping with trauma in the aftermath of natural and/or manmade disasters. There is, however, a need for greater understanding of the role of spirituality in health and illness.

Objectives: To evaluate patients and health professionals’ opinions regarding spirituality in the course of illness and management.

Methods: 50 patients (suffering from chronic illnesses) and 50 healthcare professionals (physicians, fellows and residents) were surveyed. For healthcare professionals, a 17-item questionnaire was used, while for patients a 7- Item self-devised tool was applied.

Results: Majority of the patients felt that physicians should inquire about patients’ relationship with God and most healthcare professionals felt that due to inadequate training this matter is hard to tackle in a clinical setting.

Conclusions: Our preliminary results show that in the context of Pakistan, the findings of the study have the special significance of spiritual discussion in mental and medical illnesses. The need of addressing spirituality in bio-psycho-social management in under- and post-graduate medical education and academics is a crucial area to approach the patient holistically. The integrated spiritual services in a treatment plan can be a significant mean for social support.

Keywords: religiosity, spirituality, psychiatry

12.17 TELE-PSYCHIATRY: A COLLABORATIVE PROJECT BETWEEN AKDN & DEPARTMENT OF PSYCHIATRY, AKU

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Background: Telepsychiatry is an innovative development in the field of psychiatry. It has helped bridge the barrier of distance to provide quality service and care to patients living in rural and remote areas.

Objectives: To highlight the e-health initiative by the Aga Khan Development Network e-health resource Centre (AKDN eHRC) in liaison with the department of Psychiatry, AKUH.

Methods: Telepsychiatry consultations were initiated in April 2014. The clinic is held on bi-weekly basis. Each clinic runs for two hours in Gilgit medical center and Booni medical center, Chitral respectively. The data and history record of patients are maintained through software called Virtualdoc. The consultation is facilitated by the trained IT personnel at both ends.

Results: Telepsychiatry consultation is effective in addressing psychiatric problems in rural areas of Chitral, Gilgit, and Booni. It has saved patients' time and provided evidence-based treatment. Issues like the language barrier, poor audio-visual resources, and privacy concerns were overcome by improved structural setting and better connectivity. Limitation in areas like medication availability and lab investigations should be focused to further improve these services.

Conclusion: Telepsychiatry facility has filled the gap in service delivery and offered quality care in far and distant areas. The medium of teleconsultation has proved to be time saving, cost-effective and resourceful.

Keywords: Telepsychiatry, AKDN eHRC, Cost-effective

12.18

OPTIC NERVE SHEATH DIAMETER EVALUATED BY TRANSORBITAL SONOGRAPHY IN HEALTHY VOLUNTEERS FROM PAKISTAN

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Objective: To evaluate normal optic nerve sheath diameter in healthy volunteers in Pakistan. *Methodology:* Hundred healthy volunteers of Pakistani origin, aged more than 18 years were recruited in the study. The ultrasound probe was placed on the superior and lateral aspect of the orbit against the upper eyelid with the eye closed. For each subject, the primary investigator performed three measurements on each eye. The measurements of each eye were then averaged to yield a mean optic nerve sheath diameter (ONSD). Results are presented as mean \pm standard deviation (SD). Statistical analysis was performed with SPSS software version 19. Mann Whitney U test was used to compare unpaired variables between genders and Wilcoxon matched pairs signed rank test to compare left and right eyes.

Results: The median ONSD of right eye was 4.84 mm and 95% of individuals had mean ONSD in the range 4.84–4.97 mm while the median ONSD of left eye was 4.86 mm and 95% of individuals had mean ONSD in the range 4.85–4.96 mm. There was no difference among the 3 repeated measures of ONSD in each eye. There was no relationship between ONSD with age, gender and measurement taken between left and right eyes.

Conclusion: 95% of healthy Pakistani adults have an ONSD less than 4.82 mm. ONSD more than 4.82mm in this population should be considered abnormal and may reflect raised intracranial pressure.

Keywords: Bedside ultrasound, Healthy volunteer's, Optic nerve sheath diameter

12.20

DELIBERATE SELF-HARM AMONG YOUNG ADULTS

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Introduction: People participate in deliberate self-harm (DSH); defined as direct and intended physical harm in absence of anticipated suicide. It is a major concern among young adults. Recent studies and experimental efforts on DSH have meaningfully increased the understanding of this negative behavior that influences an individual to get involve in such acts. Health care workers with lack of basic knowledge regarding the identification and assessment of DSH create hindrance in their treatment and early prevention.

Method: This paper defines the issue in detail along with its major causes. It explores the prevalence and incidence of DSH among young adults specifically in Pakistan.

Result: This article presents ways which are used for DSH by young adults and the intervention which can be done to deal clients with DSH which can overcome this behavior among people.

Conclusion: It also focuses on methods which can be adapted by the client, family and society to overcome this attitude of an individual and also emphasis on further research is required at national level to look around this matter to minimize DSH in young people.

Keywords: Deliberate self-harm, Prevalence among young adult, Pakistan

12.21

DEVELOPING COMPOSITE MOLECULAR SYSTEMS FOR MEMORY: MOLECULAR EVOLUTION OF MEMORY SYSTEMS NETWORK

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Introduction: Molecular mechanisms underlying memory formation has been one of the profound mysteries in biology. Various molecular and genetic components have been proposed to play a role in memory formation. The field of Neuroinformatics involved the use of the tools in computational biology for organizing and investigating large volumes of experimental neuroscience data. Studies have been conducted focusing on the construction of memory molecular systems networks mainly involving following genes such as CREB1, CREB2, DLG3, DLG4 and SHANK3 amongst others. It is aimed to find evolutionary similarities between molecular components involved in memory across different species.

Materials And Methods: This in silico study was approved by the Ethical Review Committee of AKU. Information was retrieved from databases such as UniProt, and the BLAST (Basic Local Alignment Search Tool) feature through PubMed. UniProt is a library of protein sequences and their annotations through which human sequences of each protein were accessed in FASTA format. Each protein sequence was then run through BLAST against the genomes of the species (Mus Musculus, Bos Taurus, Canis Lupus, Monodelphis, Ornithorhynchus, Anolis, Gallus gallus, Xenopus, Danio Rerio, Ciona Intestinalis and Homo sapiens), to identify homologous proteins and DNA sequences based on the resemblances between the sequences.

Results & Discussion: The developed evolutionary tree of memory showed that the core memory pathways are common throughout the evolutionary tree, with additions or subtractions of molecules depending upon the level of complexity.

Keywords: Neuroinformatics, molecular memory, modeling

12.22

CHALLENGES FACED BY HEALTH CARE PROFESSIONALS IN PROVIDING QUALITY OF LIFE (QOL) TO ALZHEIMER'S AND DEMENTIA PATIENTS: A SYSTEMIC REVIEW

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Introduction: As we are moving towards future, life expectancy of human has been increased, which also required to improve quality of life of an individual.

Background: WHO suggested that by 2025, around three-quarters of the population aged 60 or over will be living in developing countries. Out of which the number of elderly people affected by chronic disease such as dementia, will get double between 2020 (42 million) and 2040 (81 million). Neurologic conditions, including dementia, estimated by the Global Burden of Disease 2010, Study as the third leading cause of years lived with disability at global level. It projects direct influence on health care professionals and health care system to strive and provide quality of life (QOL) to elderly patient living with chronic cognitive conditions. *Method:* A systemic review of articles from 2005-2015, published in renowned medical Journals were analyzed.

Result: This literature review highlights the prevalence of dementia increases from 2-3% among those aged 70–75 years to 20–25% among those aged 85 years or more (Liara, 2014) and becoming huge challenge on health care professionals. We required to build such nursing homes which are well equip in managing challenges such as acute memory loss, medication compliance and performing activities of daily living (ADLs) in Alzheimer's and dementia patients. However, health care providers need to practice multiple care approaches in dealing with neurological and cognitive symptoms including behavioral and psychological approaches and non-pharmacological interventions to manage and prevent their symptoms and to aid their quality of life. Furthermore we need plan strategies to lessen the burden on health care system by involving family and community to support people with Alzheimer's and Dementia.

Conclusion: As elderly people need to live with these cognitive impairment for the rest of their lives, therefore we health care professional need to make significant strides in alleviate their disease progression and improve their quality of living.

Keywords: Alzheimer's and Dementia, quality of life, chronic cognitive conditions & mental health

12.23

ELECTROPHYSIOLOGICAL EVIDENCE OF THE RICHE-CANNIEU ANASTOMOSIS IN THE HAND AND ITS DIAGNOSTIC IMPLICATIONS

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Introduction: Anomalous anastomoses between the nerves of the hand are a rare phenomenon. Among these, one type is the Riche-Cannieu anastomosis, in which there is a connection between the deep branch of the ulnar nerve and recurrent branch of the median motor nerve in the palm. Presence of this can sometimes be misdiagnosed as a severe median mononeuropathy at the wrist/carpal tunnel syndrome (CTS). Herein we describe two such cases that were referred for CTS evaluation.

Methods and Results: A 44 year-old and 61-year old lady were referred to our neurophysiology lab with a complaint of bilateral hand numbness. Standard nerve conduction studies (NCS) and Electromyography (EMG) protocols to assess for CTS were performed. Findings were similar in both patients. NCS revealed prolonged peak latencies of the median sensory nerve with normal sensory amplitudes. Ulnar sensory latency and amplitude were normal. Distal median motor latency was normal with low median motor amplitude (in microvolts) when stimulated from the wrist and recording from the abductor pollicis brevis (APB) muscle. The motor amplitude normalized (in millivolts) when recording from the same APB muscle but stimulating the ulnar nerve. EMG in both patients was normal. These findings suggest an anomalous connection between the recurrent motor branch of the median nerve and ulnar nerve in the palm, consistent with the Riche-

Cannieu anastomosis. Prolonged median sensory latency in both patients indicated coexistent mild CTS.

Conclusion: Riche-Cannieu anastomosis is not uncommon. In the subjects where sensory amplitudes of the median nerve are normal but motor amplitudes are low, the presence of this anastomosis should be suspected. The electrophysiological study should be extended in order to avoid erroneous interpretation of low median motor amplitudes as severe CTS and to prevent unnecessary surgical intervention.

Keywords: Riche-Cannieu anastomosis, carpal tunnel syndrome, Anomalous anastomosis

12.24

TO ASSESS THE COMPLIANCE OF MONITORING METABOLIC SYMPTOMS ASSOCIATED WITH ANTIPSYCHOTICS INPATIENT PSYCHIATRIC WARD IN A TERTIARY CARE HOSPITAL IN KARACHI, PAKISTAN

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Background: Second Generation Antipsychotics (SGA) are associated with a cluster of signs and symptoms (weight gain, central obesity, dyslipidemia, and susceptibility to type II diabetes) termed as the metabolic syndrome. Different guidelines recommend a slightly variable schedule of metabolic risk factor monitoring. The implementation of such guidelines can improve the health of persons with psychiatric illness, but to adopt them in clinical practice can be challenging. Objective: To assess the compliance of monitoring metabolic symptoms associated with second

generation antipsychotics according to the standards of NICE guidelines.

Methodology: It's a Retrospective study and we will look at all the case notes of the patients admitted to psychiatric ward in the last 1 year (February 2015-January 2016). The sample size will be all the inpatients admitted to C0 ward in AKU for this period. Our inclusion criteria will be all the patients commenced or switched on antipsychotics.

Results: We will be able to assess the current practice and modify the assessment practice in the light of NICE guidelines and develop a workable protocol for the team to identify patients with increased risk of metabolic syndrome.

Conclusion: We will be able to proactively identify patients with increased risk of metabolic syndrome by improving our current practice by recommending improved and timely assessments.

Keywords: Metabolic syndrome, antipsychotics, monitoring

12.25

I Wish My Parents Would Stop Arguing!"
Parental Conflicts- Jeopardizing Adolescent's
Mental Health

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Introduction: Conflict is inevitable in marriage. Yet, when adolescent confront with frequent, intense, and unresolved parental conflict, they are at risk for developing adjustment problems, internalizing and externalizing disorders. The aim is to improve adolescent's mental well-being by resolving inter-parental conflicts.

Method: Case Report review. During my practice in a tertiary hospital of Pakistan, an 18-

year-old boy was admitted with depression. He had slashed his wrist twice and had left his school six months ago. After history taking it was revealed that his parents remained in conflict for which he blamed himself. According to the client "I am responsible for my parent's conflict and if I would end my life, there would be no more conflicts." The appraisal of self-blame worsened adolescent's mental health and he ended up into depression. To improve the adolescent's mental well-being it is necessary to resolve parental conflicts. Being a nurse, I counselled both the parents and elucidate them to resolve their conflicts in a positive way. Further, parent training program was conducted in which assertive communication skills, problem solving and coping skills were taught. Lastly, client was trained for emotion-focused coping which helps in better psychological adjustment.

Result: This case clearly depicts that inter-parental discord can profoundly impact on adolescent's mental health and results in development of internalizing problems like depression, low self-esteem, guilt and shame. Also, the academic performance can be affected. However, the above mentioned interventions have shown positive outcome for social and emotional adjustment, school engagement and reducing depression and anxiety in adolescent. Moreover, family harmony can be improved and adolescent is more likely to cope effectively with the forthcoming situations.

Conclusion: These interventions appeared to promote adolescent mental health. It is the responsibility of health care professionals to identify and deal with such issues in order to overcome adolescent's emotional and psychological distress.

Keywords: parental conflict, adolescent, mental health

12.29

I WISH MY PARENTS WOULD STOP ARGUING!" PARENTAL CONFLICTS- JEOPARDIZING ADOLESCENT'S MENTAL HEALTH

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adolescent is more likely to cope effectively with the forthcoming situations.

Conclusion: These interventions appeared to promote adolescent mental health. It is the responsibility of health care professionals to identify and deal with such issues in order to overcome adolescent's emotional and psychological distress.

Keywords: parental conflict, adolescent, mental health

12.30

THERAPEUTIC MILIEU – AN ADJUNCT TO PHARMACOLOGICAL TREATMENT IN PSYCHIATRY

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Introduction: Therapeutic Milieu is defined as a structured environment to teach psycho-social skills and limit maladaptive behavior of mental-health patients. It contains staff, unit's physical structure, and the emotional state of patients and staff. Milieu management is mostly a neglected aspect. Thus, there is an immense need to address its importance.

Method: On my mental-health clinical rotation, I encountered a patient with bipolar disorder, playing a drum very loudly which was stimulating and making her hyperactive with the noise. Nurses there were busy doing medication and overlooked the scenario. Also, there was no therapeutic communication found between nurses and patients. This provoked me to think about the role of milieu in inpatient care setting. The literature reviews some articles referred from Google scholarly papers and PubMed along with a book "Principles and Practice of Psychiatric Nursing" by Stuart.

Results: Literature shows that building a therapeutic milieu results in speedy recovery of

patients, especially when nurses involve patients in therapeutic communication and let them ventilate their feelings. Group activities are also effective. Gunderson's five functions of therapeutic milieu included containment, support, structure, involvement and validity. Nurses should implement these functions of therapeutic-milieu rather than being confined to medication and documentation.

Conclusion/Recommendation: For proper milieu management, hospital management should give training to the healthcare staff about maintaining therapeutic-milieu in inpatient care setting. A schedule for regular activities for patients should be planned to form structured daily routine. Awareness should also be given to families to practice this at home.

Keywords: Milieu, Psychiatry, Therapeutic communication

12.31 FAMILY ROLE IN CARING FOR PSYCHIATRIC PATIENTS

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Introduction/objective: Families can play their active and beneficial role in the treatment process of psychiatric patients. They contribute to early recovery and less aggressive and irritable gestures with high emotional behavior while it's vice versa show more social isolation and depression amongst these patients. Not only it aggravates the patient's condition but also affects families well being I-e their day to day living, health, relationships and financial security. This study aims to identify the advantages and disadvantages of involving or not involving families in treatment regime,

family role and its impact on psychiatric patients.

Method: A case was encountered from clinical setting in which a 83 year old lady had no family support which caused depression and feelings of loneliness in her , making her condition worse as she was validating her feelings in a negative way and gestures. The literature reviews articles referred from Google scholarly paper, PubMed and science direct.

Results: Jared.c.clark, Schizophrenia bulletin, Vol. 27, no.1 in his study showed that interventions without family involvement was resulting in 48% relapse rate while with family involvement it showed 28% relapse rate.

Recommendations: By removing the stigma and isolation over the mentally ill clients, Healthcare professionals should educate and counsel the family on individual basis to guide them and help those without family support to validate their feelings and eliminating the triggering factors for them. Also on community level sessions can be arranged to raise awareness for families that can help them for caring their loved ones in a better way.

Keywords: Stigmatization, Family Role,
Psychiatric Patients

12.33 PSYCHOLOGICAL ASPECTS OF PAIN WITH RELATION TO PAKISTANI CULTURAL CONTEXT

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Objective: Pain is a universal melody which is expressed by different cultures in their own languages. As Psychology deals with the study of human minds, thoughts, emotions, and behaviors, pain is one of the factors which alters

our cognitive processes and thus affects our ability to think and behave. According to Clark (2004) pain is categorized in acute and chronic based on its severity. The purpose is to explore the relation of pain with psychology with cultures, gender and age as to correlate it with conventional literature.

Method: A computerized literature search was performed. Systemic review of literature from 2004-2013 was conducted through an electronic medium by using Science Direct, SAGE, Taylor and Francis and Google search engines.

Results: According to bio psychosocial model its approach is multidimensional as sensory, emotional, mental and behavioral components are included and are affected by physical and social environment. This model also says that environment also affects pain, if that person is physically constraint which means having financial problems and lacking other material resources these would affect his pain (Hanson, 2010).

Conclusion: Every individual responds to painful stimulus differently even though they experience similar type of pain (Weiten, 2010). According to Hadjistavropoulos & Craig (2004) as a health care provider it is essential to deal holistically with the experience of pain, that's why information regarding every procedure should be provided, relaxation techniques should be explained like deep breathing, muscle relaxation, meditation, imagery and hypnosis and patient should be informed about positive coping and distraction. In conclusion, the notion that pain is an essential precursor of physical injury has now become a conventional concept.

Keywords: Pain, Psychological, Conventional

12.34 PSYCHOLOGICAL EFFECTS AFTER HYSTERECTOMY

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Background: Hysterectomy is one of the commonest operations performed and its indications range from life threatening conditions to prevention of diseases. Its rate is rising quite higher because it is the only surgical option available if patient is not responding to the medical treatment. Besides, the reason of such higher rates could be, most of the surgically trained doctors prefer surgical interventions rather than medical (Perveen & Tayyab, 2010).

Method: A computerized literature search was performed. Systemic review of literature from 8 research articles from 2010-2016 was conducted through electronic medium by using Science Direct, SAGE, Taylor and Francis and Google search engines.

Results: Most of the women usually expect physical changes after a hysterectomy, but they shouldn't ignore the emotional effects.

Generally, a hysterectomy doesn't cause emotional problems in a psychologically healthy woman because this surgery aims to eliminate the suffering of the disease, on the other side it can leave a great distress on psychologically unhealthy women (Blake, 2010). It is not necessary that women who did not have any child, would only become sad or experience changes in mood after hysterectomy, but those with children can also feel sad and get distressed about this loss (Blake, 2010).

Conclusion: In Pakistani culture, very few women converse openly about their sexuality, in contrast many do not prefer, because their loss of sexual feeling is highly confidential and private matter too. In most of the cases, patient's

physical healing progresses post hysterectomy and likewise their emotional health also returns to normal. However, those who experience persistent low mood should see their physician or consult for counseling. Literature supports that before the operation, doctors and nurses must explicitly inform all patients and even their partners about the operation and its potential consequences (Goktas et al., 2015). To sum up, as a nurse we have a responsibility to assess such type of patients holistically and guide them so that they can prevent themselves from undergoing severe complications.

Keywords: Hystrectomy, Psychological effects, Healing

12.35

ROLE OF DECREASED PLASMA TRYPTOPHAN IN MEMORY DEFICITS OBSERVED IN TYPE I DIABETES

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Objective: Diabetes mellitus is the most common metabolic health problem, characterized by hyperglycemia that results from an absolute or relative deficiency of insulin. Animal and human studies have shown decreased plasma tryptophan (TRP) and brain serotonin (5-HT) levels in diabetes. Serotonin is known to play an important role in pathophysiology of various neuropsychiatric disorders and other related problems such as cognitive impairment. The present study was performed in subjects with type I diabetes mellitus and healthy controls. The aim of the study was to investigate the relationship between

plasma tryptophan and occurrence of memory dysfunctions in male and female diabetics.

Methods: This was a case-control study conducted at Hanif and Haleem Hospitals, Karachi from January 2009 to June 2009. 100 diabetic subjects were selected out of which 50 were males and 50 were females. Likewise the controls were also in the same number. The consent was taken and a questionnaire was asked to evaluate the memory impairment in subjects. Plasma tryptophan was determined by HPLC-UV method.

Results: The present study shows that in diabetes there is considerable memory impairment in the human subjects. Fasting glucose levels were significantly ($p < 0.01$) higher in diabetic male (212%) and female (210%) patients as compared to non-diabetic subjects.

The plasma tryptophan levels were significantly ($p < 0.01$) reduced in both male (39%) and female (57%) patients suffering from type I diabetes mellitus as compared controls.

A greater memory loss (40%) in diabetic subjects as compared to (5%).

Conclusion: The present finding of decreased plasma tryptophan levels suggest that memory deficits commonly observed in diabetics may be due to an altered brain 5-HT metabolism.

Keywords: Tryptophan, Diabetes, Memory Impairment

12.36

ECONOMIC BURDEN OF MENTAL HEALTH IN PAKISTAN

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Background: Economic consequences of mental illnesses are far reaching than health consequences. In Low and Middle Income Countries (LMIC) economic impact of mental illnesses is rarely analyzed. This paper attempts to fill the gap in research on economics of mental health in LMIC. We provide economic burden of mental health in Pakistan that can serve as an argument for reorienting the health policy, resource allocation and priority settings. Aim of the Paper: To estimate economic burden of mental health in Pakistan.

Methods: We used prevalence based cost of illnesses approach using bottom-up costing methodology. We used Aga Khan University Hospital, Psychiatry department data set (N=1882) on admission and ambulatory care for the year 2005-06. Healthcare cost data was obtained from finance department of the hospital. Productivity losses, caregiver and travel cost were estimated using socio-economic features of the patients in the data set and data of national household survey. We used stratified random sampling and methods of ordinary least square multiple linear regressions to estimate cost on medicines for ambulatory care. All estimates of cost are based on 1000 bootstrap samples by IC-10 disease classification. Prevalence data on mental illnesses from Pakistan and regional countries was used to estimate economic burden.

Results: The economic burden of mental illnesses in Pakistan was Pakistan Rupees (PKR) 250,483 million (USD 4264.27 million) in 2006. Medical care costs and productivity losses

contributed 37% and 58.97% of the economic burden respectively. Tertiary care admissions costs were 70% of total medical care costs. The average length of stay (LOS) for admissions s care was around 8 days. Daily average medical care cost of admitted patients was PKR 3273 (US \$ 55.72). For ambulatory care, on average a patient visited the clinic twice a year. The estimated average yearly cost for all mental illnesses was PKR 81,922 (US \$ 1394.65) and PKR 19,592 (US \$ 333.54) for admissions and ambulatory care respectively. In the sensitivity analysis productivity losses showed high variability (from USD 1022.17 million to USD 4007.01 million). Assuming a gate keeping role of primary healthcare (PHC) demonstrated a saving of USD 1577.19 million in total economic burden. Implications for health policy: This study set out to generate evidence using a low cost innovative approach relevant to many LMICs. In Pakistan, like many LMICs, patients access tertiary care directly, even for illness that can be efficiently managed at PHC level. In economic terms the non-medical consequences of mental illnesses are far greater than medical consequences. Based on these finding we recommend, firstly, that mental health should be prioritized equally as other illnesses in health policy and secondly there needs to be integration of mental health in primary health care in Pakistan.

Keywords: Mental health, health economics, Health policy

12.37

IMPACT OF POOR MENTAL HEALTH AMONG HEALTH CARE PROFESSIONALS TO HEALTH CARE ORGANIZATION: A LITERATURE REVIEW

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Introduction: Health care professionals specifically nurses and doctors face high amount of stress, anxiety, burnout, depression and addiction as well as many other symptoms associated with poor mental health and common mental disorders (CMD). This literature review aims to highlight impacts of poor mental health among health care professionals to health care organization.

Method: A comprehensive literature review has been done from 2010 to date, using various scientific database including PubMed, CINHALL, Science direct and Generic search engines. Findings have indicated that the disability cost of mental health is more than the lower back pain and other soft tissue causes of disability among health workers but health organizations focus more on the later. Health workers tend to take more off days than any other sector which lead to decrease in workforce. Whereas, working despite poor mental health can lead to poor work quality, interpersonal conflicts, job blunders, uncertain patient safety and patient satisfaction and affect quality of care. Salaries remain quite low, workloads and emotional demands are high, lack of competent staff and unfavorable working conditions lead to dissatisfaction and further adds to the level of stress leaving workers demotivated. There is a discourse of professional competence and stigmatization where this issue veil under secrecy and silence.

Recommendations: Health organizations should have health policies aiming mental well-being of health workers and should alleviate the barriers

related to mental health literacy, stigma, and inadequate access to mental health services. Moreover, higher management should offer support, provide an opportunity to discuss work related problems, build psycho-social skills, provide tools to deal with stress related to work or personal life as well as strengthen knowledge and skills related professional tasks.

Keywords: Mental Health, Health Care professionals, Health Care Organization

12.38

ASSOCIATION OF CC2D1A DELETION WITH NON-SYNDROMIC AUTOSOMAL RECESSIVE MENTAL RETARDATION IN PAKISTANI POPULATION

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Non-syndromic autosomal recessive mental retardation (NSARMR) is a neurodevelopmental disorder; it produces severe lifelong disability and has serious impact on the affected individuals their families, health care system and society. It affects 1-3% of the world population, particularly prevalent in highly consanguineous populations. NSARMR is extremely heterogeneous and about two third of the cases found to be linked to genetic etiologies. CC2D1A is a large gene containing 31. Recently, a large homozygous deletion in this gene has been linked to NSARMR in different populations. The present study is designed to discover the association of CC2D1A deletion with Non-syndromic autosomal recessive mental retardation in Pakistani population. Pakistani

consanguineous families with at least two affected individuals were recruited. Each family member was subjected to MRI of brain. Patients showing any structural abnormalities in MRI were excluded from the study. DNA of each family member was extracted and the region encompassing deletion was amplified using PCR and sequencing was done to detect the homozygous deletion in CC2D1A gene. Clinical psychologist performed IQ, DQ, assessment using the age appropriate IQ/DQ assessment tools including Wechsler preschool, primary school scale of intelligence III (WPPSI III), Wechsler intelligence Scale for children IV (WISC IV) and Vineland adaptive behavior scale (VABSII). Families studied so far have not shown presence of CC2D1A deletion. Sequencing of all the exons of this gene may help in finding some novel mutations associated with NSARMR in Pakistani population.

Keywords: Nsarmr, Genetics, Polymorphism

12.39

STRUCTURE-FUNCTION OF HUMAN SYNTAXIN BINDING PROTEIN: ROLE IN NEURONAL DISORDERS

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Introduction: Human Syntaxin binding protein1 (STXBP1_HUMAN) play an important role in synaptic vesicle fusion and release of neurotransmitter. Our objective was to study the Human Syntaxin Binding protein to suggest its role in membrane trafficking.

Methods: We reviewed the literature on interaction of human syntaxin binding protein1 with protein of synaptic vesicle fusion machinery syntaxin 1a. We also applied the bioinformatics approach to hypothesize its role by using web base tools of homology study,

conserved domains analysis and protein modeling

Results: Our search indicated that there is vast information available on function of Rat syntaxin binding protein. Information on interaction of human syntaxin binding protein with synaptic vesicle protein syntaxin 1a is scanty. Our bioinformatics study approach found that STXBP1_HUMAN have 100% amino acid similarity with STXBP1_RAT. Our constructed 3D structure of STXBP1_HUMAN was approximating to structure of STXBP1 present in other species. Our constructed model predicted the hypothetical functional protein action mechanism in synaptic vesicle fusion. We have presented the model of human STXBP1 along with characteristics of individual domains according to their functional interaction with other proteins of synaptic membrane fusion assembly. Further we have also looked into the possibility of mutation in STXBP1_HUMAN and its involvement in neuronal disorders like Non Syndromic Autosomal Recessive Mental Retardation (NSARMR) and Early Infantile Epileptic Encephalopathy (EIEE).

Conclusion: The role of Human Syntaxin Binding Protein through computational modeling, suggests its interaction in fidelity of membrane trafficking

Keywords: Syntaxin, NSARMR, membrane trafficking

12.40

ASSOCIATION OF TECR MUTATION WITH NON-SYNDROMIC AUTOSOMAL RECESSIVE MENTAL RETARDATION IN PAKISTANI POPULATION

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Non-syndromic autosomal recessive mental retardation (NSARMR) is a neurodevelopmental disorder, and produces severe lifelong disability. It affects 1-3% of the world population. It distresses the individuals, their families', health care system and society. NSARMR is extremely heterogeneous and very little is known about the genes and loci involved. Present study is designed to discover the association of Pro182Leucin mutation in TECR gene with Non-syndromic autosomal recessive mental retardation. Pakistani families with at least two affected individuals were recruited. Blood sample was collected from each member of the family to extract genomic DNA. Genotyping was done using ARMS refractory PCR and DNA sequencing. Clinical psychologist performed IQ, DQ, tests using the age appropriate IQ/DQ assessment tools. Each family member was subjected to MRI of brain. Our results indicated Pakistani population has high Consanguinity (62.7%) with 84.0% marriages between first cousins. IQ/DQ test showed lower range and severe mental retardation. Families (n=29) with total of 108 individuals have studied so far. They have not shown presence of TECR mutation. Our findings suggest that NSARMR is exceptionally heterogeneous with less common mutations for

NSARMR not only in Pakistan but also in other global populations with high consanguinity.

Keywords: NSARMR, Genetic Mutations, Association studies

12.41

PERCEPTUAL PROCESS IN SOCIAL ANXIETY

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Introduction: Social anxiety is fear of social interactions that involve a concern about being judged others. It is characterized by an intense fear of what others think about a person. According to the Cognitive behavioral theory (CBT), this occurs because such person has a preconceived notion about how things will turn out in socially demanding situations. This preoccupation of being judged by others is the top-down perception that worsens the condition. Even if others are not doing so, the person tends to feel this because we tend to see things in line with our belief not against it. So this observation encouraged to study whether social anxious people use more top-down perception or not.
Method: It was an independent- subject design experiment. Total 100 individuals participated in the study. There were 3 Styrofoam glasses filled with chilled water from the same bottle and marked as 1, 2, or 3. All the participants were asked to take only one sip from each glass and indicate which glass has the coldest water. The instruction was specifically intended to probe a top-down percept. After completion of this task they were asked to fill their responses on the social anxiety scale. Unrelated t-test was applied to find the difference between socially anxious and non-anxious as categorized by the scale.

Result: The test examined the effect of social anxiety on the process of perception. The obtained value of t is 2.06 which was more than the table value 1.68(p.05). The difference between the social anxiety scores of two perceptual processes was found to be significant ($t(98)=2.06$, $p=.05$, table value=1.66).

Conclusion: The hypothesis, formulated on the basis of CBT that socially anxious individuals will have more top-down perception as compared to socially confident people was clearly supported by the result

Keywords: Social Anxiety, Perception, feedback Mechanism

12.42

UNDERSTANDING THE MULTITUDE OF PATHWAYS THAT GOVERN RESPONSE OF THE NERVOUS SYSTEM TO INJURY AND DISEASE

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Introduction: A complex interacting network of signaling pathways and cellular interactions control the development of the nervous system, its function, and its continued viability. The stability of the nervous system can be disturbed in response to a multitude of cellular insults. A shift in the balance of signaling pathways after stress or in response to pathology can have drastic consequences for the development or the normal function of the nervous system. Describing the numerous activities necessary to support these complex processes is an intimidating task. Our objective is to review the

Current technical developments in the field of proteomics.

Methods: We have reviewed through web sources the advanced methods of Mass spectrometry, Protein arrays, and bioinformatics. Technical advancements of last four years were taken into consideration.

Results: Our search showed that the advancements are composed to generate improvements in our understanding of protein expression, function, and organization in complex signaling and regulatory networks. Improvements in MS instrumentation, the implementation of protein arrays, and the development of robust informatics software are providing sensitive, high throughput technologies. These techniques are helpful for large scale identification and quantitation of protein expression, protein modifications, subcellular localization, protein-protein interactions, and protein function.

Conclusion: These advances have significant inferences for understanding how cellular proteomes are regulated in the nervous system in health and disease

Keywords: signaling pathways, improved technology, stability and viability

12.43

OPTIMIZATION OF STXBP1 MUTATION DETECTION IN NON-SYNDROMIC AUTOSOMAL RECESSIVE MENTAL RETARDATION PATIENTS

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Introduction: Syntaxin Binding Protein STXBP1, is an accessory protein required for synaptic vesicle fusion during neurotransmission. Disruption in this process can cause intellectual disability. Mutations in the STXBP1 gene can result in a cognitive defect and could cause Non-Syndromic Autosomal Recessive Mental Retardation (NSARMR).

The objective of this study is to find out the de novo truncating mutation (1-bp Del, 1206T) in the gene encoding STXBP1 protein in NSARMR patients.

Methods: We have used Refractory TETRA-ARMS PCR technique to study Autosomal Recessive Mental retardation in future. This technique requires 3-4 primers for finding correct association. Therefore in order to optimize conditions for Refractory TETRA-ARMS PCR, first two primer combinations were optimized.

Results: The expected products were observed in the temperature range of 54 0 C to 63 0 C. TETRA-ARMS PCR was run at the temperature gradient of 47 0 C to 61.6 0 C and bands corresponding to the product of outer reverse (OR) and inner forward (IF, wild type) were seen. When the deleted type primers were used at this gradient, non-specific bands were formed, indicating the conditions were not fully optimized. On further experiments, Temperatures of 55 0 C to 64 0 C allowed the required band to form (at 61 0 C – 64 0 C) when using the deleted type primers.

Conclusion: Condition to detect mutation has been optimized. Further optimization would reveal all expected bands in the Wild type TETRA-ARMS PCR

Keywords: NSARMR, syntaxin, Genetic association

12.44

WERNICKE'S ENCEPHALOPATHY PRESENTING AS ACUTE VISUAL LOSS IN A YOUNG PATIENT

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Introduction: Wernicke's Encephalopathy, neurological complication of Thiamine deficiency is an acute syndrome requiring emergency treatment. Its prevalence among non

– alcoholics is 23%, and prolonged Intravenous feeding without proper supplementation is one of its risk factors.

Case: A 25 year old lady presented with persistent vomiting and constipation after having undergone laprotomy twice for bowel perforation 2 months back. In addition to the conservative management for her bowel obstructive symptoms, she was started on parenteral nutrition. After 7 days, she complained of sudden onset of visual loss. Examination revealed bilateral limited abduction, papilledema with some retinal haemorrhages, along with slight psychomotor slowness, disorientation and drowsiness. Initial MRI brain with contrast along with diffusion weighted images was unremarkable. CSF studies along with opening pressure were also normal. Repeat MRI brain revealed T2 signal abnormalities in mamillary bodies and basal ganglia. A working diagnosis of Wernicke's encephalopathy was made and she was started on intravenous thiamine. Significant improvement was noted over the next few days in her vision, along with improvement in eye movements as well as orientation.

Conclusion: Complex clinical picture of long standing bowel problems requiring parenteral nutrition, followed by sudden onset on visual loss and Papilledema is an unusual presentation of Wernicke's encephalopathy and such presentation should be kept in mind to avoid diagnostic delays.

Keywords: Thiamine deficiency, papilledema, wernicke's encephalopathy, mamillary bodies, visual loss

12.45 DYSKINESIAS RELATED TO DULOXETINE – CASE REPORT

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Background: Duloxetine is a selective serotonin reuptake inhibitor used in the treatment of major depressive disorder, diabetic neuropathy and fibromyalgia. Tardive dyskinesias and dystonias are movement disorders caused by various dopamine antagonist drugs, mostly antipsychotics and only rarely with antidepressants. Some reports have been published regarding the extra pyramidal symptoms associated with duloxetine.

Case: A 60 year old female on duloxetine for depression for 3 weeks, presented 1 week after increase of dose to 60 mg, with complaints of abnormal behaviour, dysarthria, and oromandibular dyskinesias, jaw trismus and neck dystonia. There was no history of fever, seizure, motor weakness, use of any antipsychotic, substance abuse medication. On arrival her blood pressures were 190/90mmHg. Neurological examination demonstrated some confusion and the above described abnormal movements. Her blood counts, renal, liver and thyroid function, blood glucose was normal. Urine toxicology was negative. She was managed with anti-hypertensive medications and her duloxetine was held because of suspicion of drug induced extra pyramidal symptoms. MRI brain showed bilaterally symmetrical diffusion restricted areas in deep cerebral white matter, without any post contrast enhancement. CSF and EEG were normal. Over the next 48 hours, her dyskinesias resolved completely and her confusion settled. She was

discharged and a follow up MRI brain done after 6 weeks which showed complete resolution of the prior changes.

Conclusion: Our patient suffered from multiple adverse effects related to duloxetine such as high BP, abnormal movements, abnormal MRI, and all were reversed after discontinuation. The MRI changes in our patient were representative of a toxic or metabolic insult. The temporal relation of dyskinesias and MRI brain changes and resolution of these changes after discontinuation of duloxetine suggests that they are related to duloxetine.

Keywords: Duloxetine, SSRI, Dyskinesias, jaw trismus, hypertension, MRI brain changes

12.46 A RARE MOTOR NEURON DISEASE MIMICKER – 5 MINUTE CASE CHALLENGE

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Introduction: Motor neuron disease (MND) carries a grim prognosis. Various MND mimickers have been described in literature and should be ruled out before making this diagnosis. We, hereby, present a case of a potentially treatable endocrinopathy that presented as MND. To the best of our knowledge, only one such case has been reported in the past.

Case History: A 61- year- old male, presented with 8 month history of progressively worsening limb weakness and swallowing difficulty. Examination showed mixed upper and lower motor neuron signs without sensory impairment. MND was suspected. As nerve conduction studies/ electromyography were not supporting

our clinical impression, MRI brain was done that revealed bilateral basal ganglia and thalamic calcification. Further blood workup confirmed the diagnosis of hypoparathyroidism.

Conclusion: Hypoparathyroidism, a potentially treatable endocrinopathy, can rarely present clinically as MND and should be ruled out before making a final diagnosis.

Keywords: Hypoparathyroidism, Hypocalcaemia, Amyotrophic lateral sclerosis, Motor neuron disease, Electromyography/ Nerve conduction studies

12.47

EFFECT OF SUPPLEMENTARY VIDEO BASED TEACHING PROGRAM IN REPORTING OF POST STROKE COMPLICATIONS – A RANDOMIZED CONTROLLED TRIAL (MOVIES4STROKE)

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Background: Pakistan is the world's sixth most populous country with a stroke vulnerable population without a single dedicated chronic care center. In order to provide evidence for a viable solution responsive to this health-care gap, and leveraging the existing greater than 70% mobile phone density, we rationalized to test the effectiveness of a mobile phone-based video intervention of short 5 minute movies to educate and support stroke survivors and their primary caregivers.

Methods: Movies4Stroke was a randomized controlled, outcome assessor blinded, parallel group, single center superiority trial. Centralized randomization with fixed block size was performed by the Clinical Trials Unit at the Aga

Khan University. 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, reporting of post-stroke complications requiring medical attention was ascertained between the two groups at first month follow-up post-discharge. Survival Analysis was used to model reporting of post-stroke complications against video-based intervention and other covariates. Final analysis was carried out by intention-to-treat (ITT) principle.

Results: 210 stroke survivors and their caregivers were recruited. Seven participant dyads were lost to follow-up and twelve stroke survivors died during one month follow-up period. After one month post-discharge, stroke survivors reporting at least one post-stroke complication were 15 in the intervention group as compared to 6 in the control group, the adjusted hazard ratio (95% C.I) of reporting post-stroke complications in the intervention group was 2.63 (1.17 – 5.93) as compared to control group.

Conclusion: Post stroke complications were more likely to be reported by those with ischemic stroke sub-type, higher education and schooling in the dyads, and greater number of scans (due to stroke severity) in the presence of video intervention.

This randomized trial tested an application aimed at supporting caregivers and stroke survivors in an LMIC setting with no rehabilitation or chronic support systems. Moreover, in future effectiveness trials are needed to best define pragmatically the roll out of these interventions.

Keywords: Stroke; Behaviour Modification Intervention; Mobile Health; Low Middle Income Countries

12.48 IMPACT EVALUATION: ASSESSING THE EFFECTIVENESS OF TELE-PSYCHIATRY CONSULTATION SERVICES IN GILGIT BALTISTAN

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Introduction: In Pakistan, the Aga Khan Development Network (AKDN) eHealth Programme offers telepsychiatry services at its hospitals in Gilgit and Booni. Patients at these facilities benefit from live teleconsultations in Psychiatry offered by specialists at the Aga Khan University Hospital, Karachi. The Aga Khan University (AKU); Aga Khan Development Network eHealth Resource Centre (AKDN eHRC); Aga Khan Health Service, Pakistan (AKHS, P); and Dalhousie University, Canada are collaborating on a research study to evaluate effectiveness of the telepsychiatry services at the Aga Khan Booni Medical Centre Chitral (AKBMC), and the Gilgit Medical Centre Gilgit (GMC).

Purpose: The study aims to evaluate effectiveness of the telepsychiatry program in terms of improvement in access to care, improvement in quality to care, and reduction in health care costs.

Methodology: The study employs mixed methodology. Both qualitative and quantitative analysis is being performed to measure effectiveness of the telepsychiatry program. Patients' demographic and clinical characteristics along with their health indicators are being obtained through 'VirtualDoc', which is an existing web-based case management system for eHealth services including telepsychiatry consultations. Patients' data on the access, quality, and cost indicators are being obtained via quantitative questionnaire. Patients' experience of utilizing telepsychiatry service is being recorded through qualitative interviews. For quantitative data, the sample size is 200; whereas for qualitative data, the sample size is 15-20, until we reach data saturation.

Results: Data collection was started in December 2015, at BMC and GMC. In August 2016,

telepsychiatry services were initiated between GMC and Chatorkhand Health Centre. At the same time, Chatorkhand was added as a study site for data collection. Additionally, telepsychiatry services are planned to be initiated at the following additional sites: Aliabad, Soust, and Garamchashma. These sites will be included for data collection. As of July 2016, 40 new patients have been enrolled from BMC and 33 new patients have been enrolled from GMC; together making a total of 73 patients (i.e. 36.5% of the study sample). The mean age of enrolled patients is 33.29 years. Out of 74 patients, 52% are female and 48% are male. The three most common diagnoses of the enrolled patients are: depression, schizophrenia, and bipolar disorders. Four patients have been interviewed for qualitative inquiry.

Conclusion: The qualitative and quantitative findings generated from this study will assist in evaluating the effectiveness of the telepsychiatry program. These findings will illustrate whether or not the program is bringing the intended change i.e. 1) increasing mental health service accessibility, 2) providing quality care and services, and 3) reducing cost for seeking mental health services. The findings generated from this study will enable the implementers and collaborators to build on the strengths of the program and to work to address the noted weaknesses in order to make the program more effectiveness for all stakeholders

Public Health

13.1 GERIATRIC TRANSITIONAL CARE: BRIDGING THE GAP

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Background: In many countries including Canada, United Kingdom, Australia, the United States, Japan and Sweden, many health care systems promote slogan of shortened hospital stays, due to which many of the elderly are facing problems with serious negative implications for their wellbeing because of the lack of continuity of care during the transition from hospital to another health care setting (Tomura, Yamamoto-Mitani, Nagata, Murashima, & Suzuki, 2011). We could say that it is an important concern for those elderly people who are unable to maintain their wellbeing without the support of health care services, making them more susceptible to avoidable readmissions. **OBJECTIVE:** This paper reports our exploration of the link between transitional care and frequent rehospitalisation of older adult with chronic illness.

Method: A comprehensive literature review was conducted, based on computerized databases of Med Pub, CINAHL, and Medline, a numerous studies were retrieved by using keywords such as older adult, Transitional care, discharge teaching, acute care, chronic illness, and rehospitalisation. *Results/Discussion:* The overview of literature exhibits that interventions like arranging follow-up and educating patients will not likely improve quality of patient care but reduce rehospitalisation. Evidences from literature suggest that holistic and multifaceted interventions are required for better quality care. *Conclusion:* Based on the above presented literature review, it can be concluded that despite the increasing quantity of older adults

using long-term and post-acute care services, there is still a knowledge gap about transition from hospital to other health care settings.

Keywords: older adult, Transitional care, rehospitalisation

13.2 ROLE OF MHEALTH SOLUTIONS IN IMPROVING ANTENATAL AND POSTNATAL CARE ATTENDANCE IN LOW AND MIDDLE INCOME COUNTRIES—A SYSTEMATIC REVIEW

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Background: From 1990 to 2013, there is an estimated 45% reduction in the incidence of maternal deaths globally. Despite lot of efforts, progress in attaining MDG 5 is not remarkable in LMIC. In LMIC, only 52% of the pregnant women obtain WHO recommended minimum of four antenatal consultations and the coverage of postnatal care is relatively poor. This has resulted in most of the preventable maternal deaths, and accounted for 75% all maternal deaths in LMIC. Surprisingly, many countries with limited print or internet resources have gained substantial level of cellphone penetration. Cell phone subscriptions have reached over 7 billion worldwide and in LMIC mobile penetration has reached over 90%. The increased penetration of cellphone has brought the potential for mobile health to improve preventive maternal healthcare services. The review aims to answer a primary research question of how can mHealth solutions help

improve antenatal and postnatal care attendance in LMIC?

Objective: The review intend to explore the role of mHealth technology in improving antenatal and postnatal care attendance in LMIC in order to generate evidence for policy makers to inform policy decisions at national and regional level.

Methods: Three international online electronic databases were interrogated to classify studies exploring the role of mHealth solutions in improving antenatal and postnatal care attendance in LMIC, between January 1, 2000 to January 25, 2016. Of 1262 titles screened after duplication, 69 potentially relevant abstracts were obtained. Out of 69 abstracts, 22 did not fulfill the inclusion criteria and five abstracts were not available. Out of 69, 42 abstracts were shortlisted. Full text of 42 articles was reviewed using data extraction sheet. Out of 42, five full-texts were not available, 20 did not fulfill the inclusion criteria and five were excluded on quality appraisal. Moreover, two studies were identified from cross-referencing of systematic reviews. A total of 14 full text papers were included in the final analysis.

Findings: The 14 final studies were categorized in to five mHealth applications defined in the conceptual framework which include 'client education and behavior change communication, registries/vital event tracking, data collection and reporting, provider to provider communication, and electronic health records'. The key findings in each study were abridged in the five categories. Most studies reported that mHealth interventions, principally those provided using SMS, were associated with improved utilization of preventive maternal healthcare services, including uptake of recommended antenatal and postnatal consultation. The heterogeneity between the papers excluded the computation of a pooled estimate.

Conclusion: Most studies of mHealth interventions for improvement in antenatal and postnatal attendance in LMIC are of moderate methodological quality. Ambiguous explanations of interventions and their mechanisms of functioning impede analysis and replication of studies. Thus, there is an essential need to take small pilot studies to large scale, permitting more extensive controlled trials and quasi-experimental studies to be conducted in order to strengthen the literature in this research area.

Keywords: mHealth, ANC and PNC, Maternal Health

13.4

FACTORS THAT ACT AS FACILITATORS AND BARRIERS TO NURSE LEADERS' PARTICIPATION IN HEALTH POLICY DEVELOPMENT

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Abstract Background: Health policies impact on nursing profession and health care. Nurses' involvement in health policy development ensures that health care is safe, of a high quality, accessible and affordable. Numerous factors influence nurse leaders' ability to be politically active in influencing health policy development. These factors can be facilitators or barriers to their participation. There is scant research evidence from Eastern African region that draws attention to this topic. This paper reports part of the larger study. The objectives reported in this paper were those aimed to: build consensus on factors that act as facilitators and barriers to nurse leaders' participation in health policy development in Kenya, Uganda and Tanzania.

Methods: A Delphi survey was applied which included: expert panelists, iterative rounds, statistical analysis, and consensus building. The expert panelists were purposively selected and included national nurse leaders in leadership positions in East Africa. Data collection was done, in three iterative rounds, and utilized a questionnaire with open and closed ended questions. 78 expert panelists were invited to participate in the study; the response rate was 47% of these 64.8% participated in the second round and of those 100% participated in the third round. Data analysis was done by examining the data for the most commonly occurring categories for the open ended questions and descriptive statistics for structured questions.

Results: The findings of the study indicate that both facilitators and barriers exist. The former include: being involved in health policy development, having knowledge and skills, enhancing the image of nursing and enabling structures and processes. The latter include: lack of involvement, negative image of nursing and structures and processes which exclude them.

Conclusion: There is a window of opportunity to enhance national nurse leaders' participation in health policy development. Nurse leaders have a key role in mentoring, supporting and developing future nurse policy makers.

Keywords: Health policy, Participation, Nurse Leaders

13.6

A DELPHI SURVEY OF LEADERSHIP ATTRIBUTES NECESSARY FOR NATIONAL NURSE LEADERS' PARTICIPATION IN HEALTH POLICY DEVELOPMENT: AN EAST AFRICAN PERSPECTIVE

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Background: Nurses' involvement in health policy development ensures that health services are: safe, effective, available and inexpensive. Nursing history reveals several legendary nurse leaders who have influenced policy and the course of nursing and health care. In the recent times there have been concerns regarding the availability of effective leaders physically, symbolically and functionally at clinical, organizational and national levels, who can effectively influence health policy. Exerting influence in the policy arena requires that nurse leaders acquire attributes that enable them to be effective in policy development activity. This paper reports part of a larger study whose purpose included: "build consensus on leadership attributes necessary for nurse leaders' participation in health policy development in East Africa".

Method: A Delphi survey was utilized and included the following criteria: expert panelists, three iterative rounds, qualitative and quantitative analysis, and building consensus. The study included purposively selected sample of national nurse leaders (expert panelists) from the three East African countries of Kenya, Tanzania and Uganda. The study was conducted in three iterative rounds. Seventy eight (78) expert panelists were invited to participate in the study and 37 (47%) participated in the first round of these; 24 (64.8%) participated in the

second round and all invited in the third round 24 (100%) participated. Data collection was done using questionnaires and collected qualitative and quantitative data. Data analysis was done utilizing the principles of qualitative analysis in the first round and descriptive statistics in the second and third rounds. Results: The study achieved consensus on the essential leadership attributes for nurse leaders' participation in health policy and include being able to: influence; communicate effectively; build relationships; feel empowered and demonstrate professional credibility. Conclusions: For nursing to participate in influencing the health policy and the health of the population, it will need to develop nurses with leadership attributes who are able to inspire change and influence the policy development process within the context where it exists. The leadership attributes identified in this study can be utilized to develop programmes geared to support nurses' participation in health policy activity.

Keywords: Health policy, Attributes, Nurse Leaders

13.7 GLOWING BANDAGES COULD SHOW INFECTIONS

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Background: When we experience a wound, it's not just the torn tissue we have to worry about. Patients can develop infections, leaving them vulnerable to organ damage if it spreads and putting their chances of recovery in jeopardy. With the aim of reducing this risk, scientists have developed a prototype wound dressing

that's able to detect the presence of bacteria in the early hours of infection. Objective: The objective of this literature review is to help reduce the overuse of antibiotics because that can lead to resistant strains.

Method: Research articles from 2013-2015 were selected and reviewed to find different views. In all the articles the bandage mechanism was that the dressing portion of the bandage contains a hydrogel material infused with capsules of fluorescent dye. When bacteria enter a wound and multiply to cause an infection, they release a toxin. The toxin causes the dye capsules to burst open and release their fluorescent dye, which then begins to glow. When the dressing detects infection, the fluorescent dots are visible in 10-20 minutes. This will be before the bacteria gets into the bloodstream and gives doctors time to act and reduce the overuse of antibiotics.

Findings: The prototype of the dressing is being tested. It is likely to be trialed on patients in three years and it is hoped that it will be on the market by 2020. *Conclusion:* Bandage can be used for early diagnosis of infection in post surgical and burn patients and hence in reducing incidences of sepsis.

Keywords: Glowing bandage, fluorescent dye, infection

13.8 DOES PHYSICAL ACTIVITY HAVE AN EFFECT ON STRESS LEVELS OF MEDICAL STUDENTS AT AGA KHAN UNIVERSITY?

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Abstract Objectives: To study the proportion of physical activity in medical students and the proportion of medical students who are psychologically stressed at a private medical college. Therefore, we determined the relationship between physical activity and perceived stress in medical students at this institution.

Methods: A cross sectional study was conducted at a private medical college affiliated with a tertiary care hospital in Karachi, Pakistan during April and May 2015. Convenience random sampling was conducted to identify the subjects. The subjects were consenting medical students year one through five at this medical college. The sample size of students that participated in the study was 235. A pre tested self-administered questionnaire was used to collect the data on socio-demographic factors, exercise habits, and stress levels.

Results: Of the study population (n=235) there was a 52.8% female preponderance, majority (59.1%) resided in university housing, and most of the students were in years 3 (30.2%) and 4(29.8%). At the time of analysis, 4 participants were excluded due to missing data. According to the perceived stress scale (PSS), we found that 30.3% of the participants were moderately stressed. The mean PSS was found to be 16.95 ± 5.72 . A significant correlation was found between physical activity and stress levels; those involved in physical activity were 0.52 times less likely to be moderately stressed (OR 0.48, p-value = 0.015). A significant correlation was also found between personal hobbies and stress levels; those indulging in personal hobbies were 0.55 times more likely to have insignificant stress scores (OR 0.55, p-value = 0.04). Lastly, we found that participants who performed physical activity for >4 hours/week had a mean PSS score difference of -0.48 (p=0.005) when

compared to those who exercised for for <1 hr compared to those who spent 4-5hrs or >5 hrs
Conclusion: Physical activity of any form leads to significantly decreased stress levels in medical students.

Therefore, more attention should be given on exercise for the duration of a medical student's stay in college

Keywords: Physical activity, Adequate exercise, Physiological stress, Personal Hobbies, Medical Students

13.9

GUILT AND ITS IMPACT AMONG CARE GIVERS: RESULTS OF SURVEY FROM TEACHING HOSPITAL IN KARACHI, PAKISTAN

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Objective: The Care Giver aspect remains unexplored in Pakistan. This study looks at Care Giver guilt and its impact on their life and ways to overcome it.

Methods: A cross sectional study was conducted between July and September, 2015. A total of 400 Care Givers were interviewed. Participants were asked to fill out a consent form. The demographic variables and care giving parameters were recorded. Questions were included on ways of countering guilt and making care giving a better experience for both the care giver and the receiver. The data was entered using SPSS software. Chi-squared test was used to compare categories. P-value <0.05 was considered statistically significant.

Results: The majority care givers (228) belonged to younger age group (18-30 years). They were mostly single, majority students, giving/ had given care to their parents or grandparents with mothers (157) followed by

father (105) as top recipients. A significant 186 respondents reported "Guilty" feelings due to deficiencies in Care giving and 50% felt it negatively affected their life. Two fifty five respondents felt that Health Care Providers should provide support to Caregivers. One sixty seven respondents felt that Patients realize negative impact of "Guilty" feelings among Caregivers and try to mitigate. Current Caregiver responses are compared with those who provided Care giving over previous five years.

Conclusion: Significant guilt arises among Caregivers due to deficiencies in Care giving. It is important for Health Care Providers to explore, identify and manage such "Guilty" feelings among Caregivers. Further research in this area is recommended

Keywords: Guilt, Caregiver, palliative care

13.11

STORAGE OF MEDICINES AND TEMPERATURE OF COMMUNITY PHARMACIES IN RURAL DISTRICT OF SINDH, PAKISTAN: AN EXPLORATORY CROSS-SECTIONAL STUDY

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Back ground: Medicines are the essential tools for preventive, curative and control of diseases. If these medicines are ineffective then its aftermath can cause wastage of resources. Medicines lose their required effectiveness due to inadequate storage on required temperature.
Objective: The objective was to estimate the proportion of pharmacies with high temperature (>25°C) inside pharmacy outlets in two talukas

(sub-districts) of district Thatta, Sindh
Methodology An exploratory cross sectional study design was conducted from August 2013 to August 2014. All pharmacies of two talukas were approached by doing a census. Descriptive analysis was done to calculate the frequencies and proportions.

Results: All pharmacies (n=62) were having a temperature of >25°C inside the pharmacies. Medicines were exposed to sunlight in 39 (63%) of the pharmacies and 39 (63%) of pharmacies had refrigerators to keep insulin and vaccines. Median duration of electricity shut downs was 12 hours per day and 11% of the pharmacies had back up power supply.

Conclusion: More than a quarter of pharmacy owners were aware about maintaining the required temperature of < 25°C but none of them was maintaining required temperature. Considering the electricity shut down, it is important to make cost effective and long term strategies to maintain the efficacy of medicines. Proper legislation need to be enforced with continuing training programs for pharmacy owners. Further research is required to explore different ways of maintaining required temperature to ensure the adequate efficacy of medicines.

Keywords: Pharmacy, Temperature, Storage

13.12

PERCEPTIONS OF PHARMACY OWNERS AND DRUG INSPECTORS ABOUT THE STORAGE OF MEDICINES ON REQUIRED TEMPERATURE INSIDE THE PHARMACY OUTLETS IN RURAL AREAS OF SINDH

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Background: Knowledge about proper storage of medicines at required temperature in community pharmacies is not enough particularly of the stakeholders dealing with medicines. Thus, it is important to know the perceptions of the stakeholders dealing with medicines about the proper storage of medicines on the required temperature.

Methods: Cross-sectional study was conducted from August 2013 to August 2014. Pharmacy owners of two talukas and drug inspectors of Sindh province were selected consecutively and by snowball technique respectively. We conducted 16 in-depth interviews with community pharmacy owners and 7 in-depth interviews with the drug inspectors. Data was analyzed manually and using inductive approach; thematic analysis was done after summarizing data and coding for past five years or more.

Results: The age of participants ranged from 35-59 years. Four themes emerged out of the analysis including the change of properties and state of medicine, modifications in the architecture of the buildings, defining the locations to construct the pharmacy buildings and barriers in improving the storage conditions. Furthermore, regulation of proper storage practice and importance of security was also

narrated by the drug inspectors with more emphasis on budget re allocation to improve the storage practices of community pharmacies. *Conclusion:* We concluded that most of the stakeholders had knowledge about the storage practices in the community pharmacies. Multiple barriers including financial barriers, problems related to regulation and load shedding were narrated by stakeholders. Furthermore, stakeholders also suggested that there is a need to enforce existing legislation along with ongoing training programs directed towards pharmacy owners and drug sellers.

Keywords: Perceptions, Regulatory authorities, Storage

13.13

APPLICATION OF THE QUALITY IMPROVEMENT TOOLS TO IMPROVE COVERAGE OF PCV-10 IN RURAL DISTRICT OF PAKISTAN: LESSONS LEARNED

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Background and objective: Quality improvement tools have been widely used to improve health services globally. Aim of this ongoing study is to improve routine immunization services of EPI for increasing PCV-10 coverage using quality improvement tools in a rural district of Pakistan. *Methods:* A cross sectional survey was carried out using 30*7 cluster method in two Taluka (sub-districts) of a rural district of Sindh province to assess baseline coverage of PCV-10 among children of age 4-12 months. Following baseline survey, all EPI staff and supervisors of the 16 catchment facilities were trained on use of

quality improvement tools including process mapping, root cause analysis and plan-do-study-act (PDSA) cycles during April-July 2015.

Weekly visits were made and interviews were conducted with EPI staff to assess progress on individual plans and use of PDSA approach in delivery of EPI services. Midline and endline surveys will assess change in PCV-10 coverage.

Results: 13 out of 16 facilities developed PDSA. Each facility staff developed specific aims to address issues hindering low coverage of PCV-10. Follow up interviews revealed system level issues including: lack of funds from district health office (DHO) to conduct outreach activities in remote areas; staff shortage; non-availability of platform for information education and communication (IEC) to increase community demand in outreach about vaccination; and mismatch between specified targets and actual population. PCV-10 coverage is yet to be evaluated.

Conclusion: It appears that PDSA at facility level might not be able to address system deficiencies hindering achievement of desired coverage. Learning from current experience calls for use of PDSA at district and provincial level.

Keywords: quality improvement, vaccine promotion, Pakistan

13.14

COUSIN MARRIAGES- A PUBLIC HEALTH ISSUE IN PAKISTAN

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Introduction: Consanguinity is a term used for Cousin Marriage (CM) or inter-familial marriages having union between two cousins or

close relatives. Literature reports that it is a common practice in South Asia and Middle East countries with rates exceeding 40% of all marriages. It is also a common practice in Pakistan and has deeply rooted in social, cultural, psychological and religious aspects.

Methodology: A comprehensive literature review was carried out to analyze the issue of CM using different search engines such as science direct, CINHALL, Pub med and Google. Various articles were reviewed to analyze CM causes, consequences, and recommendation using Lininger's sunrise model (2002).

Results: The literature review suggests that CM seems to be providing easy adjustments for couples including settlement of family financial issues, protection against divorce. It is also considered as part of faith. Moreover, Pakistani families living in abroad practice CM to share advantages of finance and education within close relatives. However, people are unaware of the consequences of CM with most unfavorable effect on genetic build on offspring. Studies report that first degree consanguinity may lead to congenital malformations and neonatal deaths. Moreover, autosomal recessive disorders such as thalassemia, atrial and ventricular septal defects, cleft lip or palate are commonly reported diseases and their link to CM in Pakistan. Lininger's transcultural care decisions model can be used to educate public to avoid this unsafe practice. The model emphasizes on cultural care restructuring at different levels which includes health education on premarital and preconception screening and counselling. Moreover, culture care negotiation includes genetic screening (in case of already present CM), family planning and child adoption.

Recommendation: In order to sensitise people about this issue health education and large scale qualitative and quantitative studies related to CM are recommended in Pakistani context.

Keywords: Consanguinity, congenital malformations, transcultural care

13.15

MEETING THE BASIC NEEDS FOR EDUCATION AND HEALTH FOR ELEMENTARY SCHOOL CHILDREN: DEH CHUHAR ADOPTED SCHOOL PROJECT, KARACHI

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Background: Young children of school going age in low and middle income countries (LMICs) are often deprived of basic education and health care which effects on their cognitive, motor and socio-emotional development. Educational infrastructure in LMICs is often not fulfilling the basic educational needs of young children. This is true for Pakistan and other LMICs, where public sector schools are often found to be either non-functional or not up to the required standard. WHO has emphasized the concept of ‘health promoting school’ that constantly strengthens its capacity as a healthy setting for living, learning and working. Two government schools (primary and middle standard) in Deh Chuhar village were dysfunctional for last 6 years and thus operating as a ghost school. Rural Educational Promotion & Development Society; Karachi based NGO under Sindh Education Foundation’s adopt a school program envision to revive education facility at the Deh Chuhar. In collaboration with the Aga Khan Development Network partners, two government schools were adopted by REPDS in 2014 and consolidated as

‘Government Boys and Girls Elementary School’. The Deh Chuhar School project is based on a comprehensive and an integrated framework for school transformation with focus on improving the quality of education and an integrated health component.

Methods: Deh Chuhar is a peri-urban site in Gaddap town, Karachi. The project timeline is 2015-2019. The School improvement focused on restructuring, of the existing infrastructure, recruitment and posting of teachers. In addition, capacity building of teachers was also carried out. Health room was built inside the school premises to offer physical examination through Lady Health Visitor and Family Medicine Residents, AKU. AKHS, P school health assessment checklist was modified. WHO growth reference charts were used to assess growth parameters. Informed consent of the screening process was obtained from the mothers.

Outcomes Education: School building has been renovated with up gradation of the class rooms and existing facilities to offer conducive environment for children as well as teachers to enhance teaching and learning. Altogether 8 teachers are hired and posted in the school. The teachers’ pedagogy and approaches in dealing with the young children and in delivering content has been greatly improved. *Health:* Of the 83 children screened, boys were slightly greater (n=48) in number in the age bracket of 3-12 years with majority of the children (n=46) enrolled in ECD. Malnutrition (n=47) and poor personal hygiene (n=29) were identified as the major health issues. Mothers were provided adequate counseling for the diet care. Children needing further investigations were referred to nearby facilities.

Way Forward: Good health is a prerequisite to acquire education. Moving forward, school children will continue to receive basic healthcare services onsite and through e Health solution.

'Hub and spoke model' will be used to connect the school with AKU Pediatric Department. In addition, need based health education sessions for parents will also be organized. With respect to education, teacher's professional development will be enhanced on-going basis. Furthermore, longitudinal study will be designed to track student progress, teacher competencies, parental and community participation, and to study the dynamics and impact of public-partnership model. Thus the project will continue to invest needed efforts to fulfill the basic needs of health and education for young school going children at Deh Chuhar.

Keywords: School Health, Education, basic health

13.16

IMPORTANCE OF INTERVENTION MADE BY PHARMACY STUDENTS DURING CLERKSHIP

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Background: Clinical intervention is a process of assessing treatment fidelity, that is, the extent to which correct treatment plan is delivered to patients. To maintain interest of students during clerkship, it is essential to direct their focus on how they can contribute towards patient care. Assessment of case studies was done for this purpose. Later, implemented on treatment plans when patients perceived inappropriate drug prescription or administration, including clarification of order, dosing errors, erroneous route of administration, drug interactions & allergies, missed lab test monitoring parameters and interventions related to education of physician/nurse/patient and others.

Objectives: (1)To document type and frequency of errors in case studies; (2)To Suggest treatment interventions for improvement of patient therapy being a pharmacy student

Methods: It was a retrospective study of past 6 months during which pharmacy students have done their clerkship. 200 case studies were found and analyzed. The study was conducted from 6 different hospitals of Karachi. A computerized data form was developed, consisting of one section including symptoms, disease and treatment plan given by physician while second section including type of errors and suggested treatment intervention for each case study. We used SPSS to establish our results on statistical grounds. *Results:* 182 interventions were made, out of which it was found that 9% (18) of the total cases did not require intervention, whereas 38.5% (77) of the total cases had at least one error to be intervened, 52.5% (105) cases had more than one suggested intervention. The most common intervention made was related to education of physician/nurse/patient i.e. 16.8% (34 cases). Others include dosing errors (14.3%) and drug interactions (22.04%), especially those associated with sedatives, cardiovascular drugs, diuretics, antibiotics, PPIs and vitamin & mineral supplements. Also common were co-prescription on various NSAIDs, prolong antibiotics prescription and confusion of drug names.

Conclusions: The study demonstrated that Pharm-D students can provide the valuable service of medication intervention and have ability to contribute for better medication therapy.

Keywords: Case studies, Treatment interventions, Pharmacy students

13.17

THE IMPACT OF SOCIO-ECONOMIC AND CULTURAL FACTORS ON HOUSEHOLD FOOD INSECURITY OF REFUGEES: A COMPARATIVE STUDY OF AFGHAN REFUGEES AT THE LAST COUNTRY OF RESIDENCE AFTER MIGRATION AND IN CANADA

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Introduction: Afghanistan is currently the source of many international refugees. Iran and Pakistan, as the first point of entry, and Canada, as the final destination, host a considerable number of Afghan refugees who are faced with challenges in resettlement. Language and cultural differences often present general barriers and challenges to integration and resettlement.

Objectives: 1. To understand the impact of socio-economic, gender and cultural factors on food insecurity among Afghan refugees living in Pakistan

2. To understand how food insecurity related experiences of Afghan refugees residing in Pakistan influence their integration into more developed countries' society

3. To inform programs and policies as a result of the research.

Methodology: Using a mixed methods study design, combinations of qualitative and quantitative methods have been used. The quantitative component consists of administering sociodemographic and food insecurity questionnaires to Afghan refugee families. The qualitative component consists of in depth interviews with male and female heads of Afghan refugee families to obtain a comprehensive picture of views, opinions and experiences of families with regard to food insecurity, gender roles and any potential barrier they may have faced since migration. Expected

Result: The prevalence of food insecurity among Afghan residents in Pakistan

Conclusion: In context of Pakistan, this is the first study being done on food insecurity in Afghan refugees. With the information gathered from this study, we aim to inform socio-cultural determinants of food security in two settings (i.e. last country of residence) and to subsequently impact programs and policies to facilitate a smooth transition for refugee families.

Keywords: Food insecurity, refugees, resettlement

13.18

PREVALENCE OF COLOR BLINDNESS IN PRE-EMPLOYMENT SCREENING IN A TERTIARY HEALTH CARE CENTER IN PAKISTAN

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Abstract Objective: To describe the prevalence of color vision deficiency among Pakistani adults presenting for pre-employment health screening in a university and its affiliated hospitals in Karachi, Pakistan. *Methods:* The cross-sectional study was carried out at the Aga Khan University Karachi. Data were collected from pre-employment screening forms on color vision deficiency, age, gender, and job applied for during 2013-2014. Frequencies and percentages were computed to describe categorical variables whereas means and standard deviation were computed to describe continuous variables. Chi-square test was used to compare proportions.

Results: A total of 3437 persons (mean age 29.01 [\pm 6.53] years) underwent pre-employment screening during 2013 and 2014. Of these, 1837 (53.4%) were males and 1600 (46.6%) were

females. Overall, 0.9% (32/3437) candidates had color vision deficiency. Color blindness was present in 1 in 71 men and 1 in 250 women (1.4% vs. 0.4%). This difference was statistically significant ($p = 0.002$).

Conclusion: The observed prevalence of colour vision deficiency is within the range reported in other studies in South Asia. Color vision deficiency can have an impact on an individual's career choice and therefore, early screening, i.e. during the school years would greatly help affected students in choosing their would-be professions.

Keywords: Color vision deficiency, pre-employment screening, gender, prevalence

13.19 NEEDS ASSESSMENT REGARDING OCCUPATIONAL HEALTH AND SAFETY INTERVENTIONS AMONG TEXTILE WORKERS: A CASE STUDY IN KARACHI, PAKISTAN

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Background: Occupational health and safety interventions in textile industry are required to ensure decrease in prevalence of occupational diseases. Needs identification is one of the core components of any occupational health program. This study determined the perceived health and safety needs identified by textile workers, managers and experts, and also included direct observation of the current health and safety practices at textile industry.

Methods: A qualitative case study was conducted during July and August 2015 in Karachi, Pakistan, using the needs assessment

conceptual framework. This study included six focus group discussions (FGDs) with textile workers, six in-depth interviews (IDIs) with the factory management, five key informant interviews (KIIs) with health and safety experts associated with textile industry and a walk-through survey.

Results: Workers were found to have limited occupational hazard, prevention and disease knowledge. They identified lack of awareness and non-existent safety mechanisms as areas for improvement. Managers thought that preventive practices and health services were not standardized while influence of buyers in the form of international business regulations and legislations were thought to be enabling factors for enforcing health and safety standards. However, poor governance, lack of knowledge regarding labor rights, low literacy level, poor compliance and low wages were the barriers for health promotion at workplace, identified by the experts. Walk-through survey at the factory found mechanisms in place for fire safety however; workers and managers were generally not using Personal Protective Equipment (PPEs), despite presence of several hazards at workplace.

Conclusion: This study signifies the need of context-specific interventions at individual, organizational and policy levels. Workers and management need health and safety awareness, trainings as well as access to PPEs, while factory owner and stakeholders, including government, needs to be sensitized regarding the importance of occupational health and safety.

Keywords: need assessment, textile workers, karachi

13.20 VITAMIN D DEFICIENCY AND INSUFFICIENCY IN A LOW-INCOME POPULATION IN KARACHI

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Abstract Objective: To determine the frequency of vitamin D deficiency and insufficiency in a low-income peri-urban population.

Methods: The cross-sectional study was conducted in a low-income, unplanned settlement in Karachi, and comprised apparently healthy adults who were recruited randomly with informed consent. Serum levels of 25-hydroxy vitamin D were measured using a kit obtained from Roche Diagnostics. One-way analysis of variance and logistic regression were used for statistical analysis.

Results: Of the 858 subjects, 507(59%) were females and 351(41%) males (age range: 18-60 years).

Mean serum 25(OH) D concentration in females was significantly lower compared to males ($p < 0.001$), while no significant differences were observed in mean concentration values of 25(OH) D among various ethnic groups and groups with different house-hold income ($p = 0.83$; $p = 0.267$).

Prevalence estimates of vitamin D deficiency ($< 20 \text{ ng/ml}$) and insufficiency ($20.0\text{-}29.9 \text{ ng/ml}$) were found to be 501(58.4%) and 269(31.4%), respectively. Odds ratio of vitamin D deficiency was significantly higher in females compared to males after adjusting for education and smoking status ($p = 0.001$).

Frequency distribution of vitamin D deficiency in males and females was found to be 115(33%) and 386(76 %), respectively.

Frequency distribution of vitamin D insufficiency in males and females was 165(47%) and 104(21%), respectively.
Conclusion: This study demonstrate high prevalence of vitamin D deficiency among females in one of the peri-urban areas points towards a public health problem which requires attention of the medical community

Keywords: Vitamin D deficiency, Urban population, Socioeconomic factors

13.21 LEVEL OF KNOWLEDGE AMONG LOCAL COMMUNITY REGARDING HEALTH HAZARD CAUSED BY DRINKING CONTAMINATED WATER AT KARACHI, PAKISTAN

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Abstract Introduction: The water borne diseases are major cause of morbidity and mortality. The World Health Organization (2010) estimates that worldwide about 1.8 million people die from diarrheal diseases annually. Thus it is important to create awareness of water purification in order to decrease morbidity and mortality rate. The study was conducted in May 2016 to assess the level of knowledge in local community of Karachi Pakistan regarding health hazard caused by drinking contaminated water.

Methodology: Data was collected from 60 community residents of Shireen Jinnah Colony. A self developed questionnaire, consisted of 10 closed ended items were used. Written consent was taken from each participant before filling of

questionnaire. SPSS version 20.00 was used for data analysis

Result: out of 60 participants, 34 were females and 26 were males. All of the participants were aged between 20 to 60 years. 40% participants stated that they use unboiled water for drinking water. Out of 60 study participant 65% participants knew that contaminated water can cause fatal diseases and 35% were unaware of the hazardous disease can be caused by drinking impure water.

Conclusion: As the results highlighted that 35% of participants are completely unaware of the consequences for drinking contaminated water, therefore awareness sessions should be conducted to educate people regarding different methods of water purification. Government should also provide awareness through mass media, so that the mortality and morbidity rates can be reduced.

Keywords: Unsafe Water, Contamination, Hazardous

13.22

READINESS OF LIFE STYLE MODIFICATION AMONG HYPERTENSIVE PATIENTS IN A REGIONAL COMMUNITY AT KARACHI, PAKISTAN

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Author Introduction: According to a report from the WHO (2010), worldwide raised blood pressure is estimated to cause 7.5 million deaths, about 12.8% of the total of all deaths. . About 70 million American adults have high blood pressure that is 1 of every 3 adults (Nwankwo,

Yoon, Burt & Gu, 2013). The current study was conducted in Shireen Jinnah colony Karachi Pakistan in May 2016, to assess the readiness of life style modification among hypertensive patients

Methodology: This cross-sectional study was conducted using a close ended questionnaire consisting of 12 questions. A convenient sample (n=50) was selected. Participants diagnosed with hypertension since 2 years were included in this study. The questions were asked after taking a written consent.

Results: Out of 50 participants 20 were females and 30 were males. All of the participants were between 20 and 60 years of age. Out of 50 respondents 84% respondents implement life style modifications to maintain their blood pressure and only 16% respondents do not implement any life style modification to maintain blood pressure. Furthermore 40% do not follow any specific diet. Only 38% participants said that they perform regular exercise

Conclusion: Hypertension can be prevented and treated if people adhere to a healthy lifestyle like taking low sodium and fat diet, performing physical activities and avoiding sedentary lifestyle. Knowledge should be provided to modify their lifestyle; controlling hypertension will also help to reduce the burden of non-communicable diseases among Pakistan.

Keywords: Hypertension, Lifestyle Modification, Awareness

13.23

ASSOCIATION OF POST-TRAUMATIC STRESS DISORDER AND WORK PERFORMANCE: A SURVEY FROM AN EMERGENCY MEDICAL SERVICE, KARACHI, PAKISTAN

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Background: Emergency medical service (EMS) personnel are exposed to various stressors in their day to day functioning. They are exposed to various kinds of stressors which includes but not limited to handling dead children, medical emergencies, severe injuries, acts of violence, organizational problems etc. Their daily exposure to diverse critical and traumatic incidents can lead to stress reactions like Post-Traumatic Stress Disorder (PTSD). Consequences of PTSD in terms of work loss can be catastrophic because of its compound effect on families, which affect them economically, psychologically as well as socially. Therefore, it is critical to assess the association between PTSD and Work performance in Emergency Medical Service (EMS) if exist any. *Methods:* This prospective observational study was carried out at AMAN EMS in Karachi, Pakistan. EMS personnel were screened for potential PTSD using impact of event scale-revised (IES-R). Work performance was assessed on basis of five variables; number of late arrivals to work, number of days absent, number of days sick, adherence to protocol and patient satisfaction survey over the period of 3 months. In order to model outcomes like number of late arrivals to work, days absent and days late; negative binomial regression was used. Whereas logistic regression was applied for

adherence to protocol and linear for patient satisfaction scores

Results: Out of 536 EMS personnel, 507 were included in survey upon meeting eligibility and providing consent. The mean scores of PTSD was found to be 24.0 ± 12.2 . However, weak and insignificant association was found between PTSD and work performance measures: number of late arrivals (RRadj 0.99; 95% CI 0.98-1.00), days absent (RRadj 0.98; 95% CI 0.96-0.99), days sick (RRadj 0.99; 95% CI 0.98 to 1.00), adherence to protocol (ORadj 1.01; 95% CI 0.99 to 1.04) and patient satisfaction (0.001% score; 95% CI -0.03% to 0.03%).

Conclusion: Higher score of PTSD were found among EMS personnel signifying their exposure to range of stressful incidents from handling violence to trauma and other medical emergencies. No association was found between PTSD and Work performance in the selected EMS population in Karachi Pakistan. Further studies are needed to explore the phenomenon of resiliency in this population.

Keywords: Emergency Medical Service, PTSD, Work Performance

13.24

ESTIMATING OUT-OF-POCKET HEALTH EXPENDITURES AND WILLINGNESS TO PAY FOR HEALTH INSURANCE IN LOW INCOME HOUSEHOLDS IN KARACHI

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Background: Pakistan, like many developing countries faces a high burden of out of pocket (OOP) health expenditure by the households, that comprises over half of the total health expenditure. The high OOP payments in

developing countries could result in financial catastrophe or impoverishment. To increase access of poor and marginalized groups to health care, World Health Organization (WHO) recommends pre-paid schemes involving pooling of funds with cross-subsidies for the poor. One of such measures is the community based health insurance scheme involving voluntary participation, non-profit pooling of funds, and affordable premiums and provision of pre-decided basic benefits package for the beneficiaries. Such schemes managed at the community level have proven to reduce catastrophic expenditures by the households whilst also increasing health care utilization.

Aim: To provide evidence for designing a feasible health insurance scheme by exploring out of pocket expenditure and willingness of low-income households to enroll in and pay for a prospective health insurance program targeted at the poor. *Objective:* 1. To estimate the magnitude and distribution of household out of pocket expenditure on health care 2. To explore the willingness of the potential enrollees to pay for health insurance.

Methodology: The research was conducted using a descriptive cross sectional study design, using household surveys. The study participants were recruited from low-income households in Karachi through a mix of convenience and snowball sampling, using data from Benazir Income Support program (BISP). Data collection was initiated after a pilot test and completed in July- August 2015. Data was entered in MS-EXCEL and SPSS version 22 was used for statistical analysis. *Results:* Respondents spending on OPD and hospitalization in the last 2 weeks were 93.4% and 11.9% respectively. 91% of all respondents paid OOP for prescription medicines. Among the OPD expenditure categories, median expenditure was highest for medicines (PKR 850) followed by diagnostic tests (PKR 500).

The median hospitalization expenditure was PKR 4500. For OPD, only 28.7% households used a government facility. 65% used private hospital for hospitalization. 38.9 % people preferred medicines to be fully covered under insurance. Out of the proposed benefits package, 53% of the respondents opted for the package that included emergency care, hospitalization, OPD consultation, diagnostic tests and transportation.

Conclusion: It was found that households were faced with high OOP expenditure on health, the most notable among which is the expenditure on medicines. These households are willing to enroll on a health insurance plan that protects them from health shocks, against small monthly payments. Health insurance schemes, designed at the community level, according to priorities and paying capacity of the people, may prevent low-income households from facing impoverishment and financial catastrophe due to the burden of OOP payments.

Keywords: out of pocket expenditure, low income households, health insurance

13.25 PERCEPTIONS OF WOMEN REGARDING THE QUALITY OF FAMILY PLANNING SERVICES IN LOW INCOME URBAN AREAS OF KARACHI; AN EXPLORATORY STUDY

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Quality of care for family planning services is measured at three levels primarily based on; policy, client and service delivery. However, the definition of quality for health care is diverse;

the definition given by Donna M. "The extent to which health services for populations increased the likelihood of desired health outcomes and is consistent with current professional knowledge" is links the quality with the health care delivery particularly in relation to family planning. The slow pace of Contraception Prevalence Rate (CPR) and more than half of the population in reproductive age (15-49 years) in Pakistan is indicating increase in future population growth in the country. In addition, with 37% the rate of discontinuation of FP method, 12% contraceptive switch in the country. It is crucial to improve quality of health care for filling the gaps related to FP services provision, which will not only increase CPR but will also address the need of women at local level. "Enhancements in quality will also have beneficial effects upon client's willingness to adopt and to continue using methods of contraception". This study will identify the gaps for the quality in FP services through the perception of local women who are; current users and satisfied with the method and discontinued method or non-satisfied users. For this purpose, the combination of Judith Bruce framework, which emphasis on the "client's perspective" and WHO guideline for identifying the gaps in health systems will be used.

Objectives: The objectives of this study are is to: Determine how married women who are users of contraceptive methods perceive quality of FP services Determine how married women who ever used a method but are not current users perceive quality of FP services Understand and explore how women perceive and ideal FP method Explore their perceptions for support to use a FP method

Methodology: Study Site: Malir Town Study
Duration: July-September 2016 Study
Participants and Sample Size: Married Women of Reproductive Age (15-49). There will be 4 FGDs which will be carried out; two with women who are currently using a contraceptive

method and 2 with women who have stopped using a method for reasons other than pregnancy. Four IDIs will be conducted, 2 with current users; one with a woman who is satisfied by the quality of FP care, and one who is not.

Results: This study is a work in progress.

Conclusions and Recommendations: This study is a work in progress. The results of the study will help in defining how married women of reproductive age (15-49) perceived quality themselves regarding the family planning services, which will help to fill the gaps in health system for increasing uptake of FP services and increase CPR in Pakistan.

Keywords: Women Perspectives on Quality, Family Planning, Low Middle Income Countries

13.26

PREVALENCE OF MALNUTRITION AND ASSOCIATED FACTORS AMONG CHILDREN UNDER-FIVE YEARS IN SINDH, PAKISTAN: A CROSS-SECTIONAL STUDY

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Introduction: Evidence suggests that targeting nutrition interventions earlier in life, before children become malnourished, might be more effective for reduction of malnutrition rates. We aimed to estimate prevalence of malnutrition and to identify associated factors among children under-five years in districts Thatta and Sajawal, Sindh province, Pakistan.

Methods: A cross-sectional survey was conducted between May and August 2014. Nearly four-thousand children under-five years

were participated in the study. The WHO growth standards height-for-age Z-scores (HAZ), weight-for-height Z-scores (WHZ) and weight-for-age Z-scores (WAZ) were used to measure the extent of stunting, wasting and underweight. A structured questionnaire was used to collect data on socioeconomic conditions, family size, parity, food insecurity and child morbidity. Multivariate logistic regression model was used to determine the strength of association between malnutrition and associated factors.

Results: The prevalence of stunting, wasting and underweight were 48.2%, 16.2%, and 39.5%, respectively. Stunting was slightly higher (51%) in boys than in girls (45%). The proportion of wasting and underweight in both genders was not remarkably different. Stunting, wasting and underweight increased with age, peaking at 62% among children in 36-47 months of age, 21% and 51% among children in 24-35 months of age respectively. Fifty percent children in the poorest households were stunted as compared to 42% in the wealthiest households. Children in the poorest households were two times more likely to be wasted (20.6%) than children in the wealthiest households (10.3%). A similar relationship was observed between household wealth and underweight in children (43.8% in poorest and 28.8% in wealthiest households). Wealth quintiles were significantly associated with stunting, wasting and underweight, while, food insecurity with wasting and underweight. Diarrhea was associated with underweight. Factors such as mother's education, parity and family size was not associated with malnutrition in our study area.

Conclusions: The findings of our study revealed that malnutrition was widespread among the children under- five years, and has not improved during last two decades. The food/nutrient based interventions together with improved IYCF, hygiene practices, household wealth and food insecurity should be targeted to improve

malnutrition situation in the study area and in the country.

Keywords: Effectiveness, Stunting, Prevention

13.27

OSTEOPOROSIS: A PREVAILING WOMEN HEALTH CONCERN

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Background: Despite the technological and organizational advances of the 21st century health-care systems, challenges like communicable and non-communicable diseases, maternal and child health issues and many other still influence the general health of third world communities. Amidst these challenging times, community health nursing steps in to play their role of promoting and preserving the health of the respective communities. The partnership of nurses and communities has always been viewed as a key component of improving the overall health outcomes of communities.

Objective: To understand the factors contributing to prevalence of osteoporosis in women in community health settings. **Material Methods:** To conduct this study, community health assessment tools were used which include a windshield survey and integrated community assessment tool. Then community participation and engagement was done via adopting strategies like counseling sessions and community checkups.

Results: It was found that lifestyle factors like diet and exercise greatly contribute to the problem of osteoporosis other than non-modifiable risk factors.

Conclusion: Osteoporosis is a completely preventable disease given that the risk factors in

the community be catered by imparting knowledge in women.

Keywords: osteoporosis, women health, community health

13.28

PREVENTIVE MEASUREMENT AGAINST NAEGLERIA VIRUS

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Introduction: Naegleria fowler as the brain-eating amoeba. It causes an acute fulminant and rapidly fatal central nervous system (CNS) infection termed primary amoebic meningoencephalitis (PAM). The infection occurs from inhalation of trophozoites. It enters the CNS, after insufflation of infected water, by attaching itself to the olfactory nerve, then migrating through the cribriform plate of the ethmoid bone along the cribriform plate of the ethmoid bone along the filioolfactoria and blood vessels, and into the anterior cerebral fossae.

Purposes: Naegleria virus harm you when you inhale the fresh water through nostril cavity.

So in spite of that to inhale fresh water through nostril(nose) a person can orally intake it

because oral cavity not gave naegleria virus an favorable environment so they can't activated

Method: Literature Review of 18 articles through print and electronic media published from 2006-2011

Result: According to research and practical experience state that naegleria virus is and brain eating amoeba and it grown in clean water but the preventive measure is that not to inhale the water through nostril cavity because it gives the favorable path for this virus because this virus need 27°C to 37°C this virus cant harm you if you drink the water because this virus are de

activated in stomach cavity they cannot not get favorable environment. So that why keep protect you brain area from this virus otherwise it will destroyed your brain area.

Conclusion: Although Naegleria virus is a very effective and very dangerous virus but research had given the preventive method that how we can cure our self from this killer virus so as I am (a health care provider) it's my duty to aware the people that naegleria virus can only harm you when you inhale it through nasal cavity.

Keywords: Neagleria Virus, prevention, fresh water

13.29

POLIO KNOWLEDGE, ATTITUDE AND PRACTICES (KAP) AND VACCINE COVERAGE IN DISTRICT MATIARI SINDH PAKISTAN: A CROSS- SECTIONAL STUDY

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Background: Polio has been widespread across Pakistan. Number of polio cases decreased from 144 in 2010 to 58 in 2012 but in 2014 jumped to 306 cases then from 2015 onwards there is a significant improvement in reduction of cases.

This situation arises because the quality of polio immunization campaign varies greatly from area to area ranging from 70% to 90% coverage. The objective of this study is to find out knowledge, attitude and practices regarding polio among the mothers and vaccination coverage of under five children.

Method: A cross-sectional survey was conducted during March-April 2013. One hundred fifty households were selected having at least one under two year's child. A structured

questionnaire was used to collect data on knowledge, attitude, practices and vaccine coverage.

Results: The knowledge of Polio was good 98% respondents were aware about the word Polio but they were not aware about polio as a disease. Most of the respondents were not aware about the causes and symptoms of polio and how Polio can be eradicated. When asked about attitude almost all respondents (98%) were agree to vaccinate their children against polio but only 2% were against it but they had no any valid reason to refuse. When practices were asked majority of respondents 42.2% didn't vaccinate their children in last vaccination campaign and only 57.8% were vaccinated. Overall vaccination situation was not good only 34% children were fully immunized against all preventable diseases 62% were partially immunized and 4% were not immunized. Only 11% respondents had vaccination card and 89% were without vaccination cards.

Conclusion: The study shows that the respondents of this study area were not fully aware about Polio and there was gap between attitude and practices. Almost all respondents were in favor of vaccination but practices showed that they were not vaccinating their children properly.

Keywords: Polio, Knowledge, Attitude, Practices, Vaccine, Coverage, Sindh

13.30

IMPLEMENTATION OF NEEDLE STICK INJURY PREVENTION GUIDELINES IN TERTIARY HEALTHCARE SETTINGS OF KARACHI, PAKISTAN

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Introduction: Needle stick injury (NSI) is a common occupational injury in hospitals worldwide and can transmit infections. Pakistan government has a law called Hospital Waste Management Rules 2005 which has sections on disposal of hospital sharps waste, but the law is rarely implemented. A gap in literature exists about why NSI prevention guidelines fail to be implemented in hospitals of Pakistan. This study explores which factors influence the implementation of NSI prevention guidelines in hospitals of Karachi, Pakistan.

Methods: This qualitative exploratory study was conducted between July-September 2015 in a public and a private sector hospital of Karachi, Pakistan. 60 staff members from a variety of departments as well as administration of the hospitals participated after giving informed consent. 7 FGDs and 8 in-depth interviews were conducted, tape recorded, and transcribed. Thematic data analysis was done using NVivo 10 software.

Results: Findings indicate multiple facilitating factors for implementation of safety guidelines, including existence of an Infection Control (IC) department, sensitization of staff to dangers of NSI, enforcement of guidelines, availability of safety equipment, use of safety-engineered sharps devices, and cooperation with IC department. Participants also informed that availability of NSI data, and timely reporting of

NSI were important factors. Barriers include careless attitudes of staff, workload, shortage of personnel in IC, poor supervision, and political backings of staff during implementation of safety guidelines in hospitals.

Conclusion: A government policy for NSI prevention in hospitals is required. Although many factors may inhibit the implementation of NSI prevention guidelines in hospitals, implementation can be enhanced by utilizing more of the facilitating factors.

Keywords: Needle Stick Injury, Occupational Safety, Infection Control

13.31

DEMOGRAPHIC AND HEALTH SURVEY IN A PERI URBAN COMMUNITY, KARACHI

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Background: This study is part of Deh Chuhar School Project; under implementation by Aga Khan Development Network partners. The Project aims to revive education facility with an integrated health and community mobilization component. This survey is the first of its kind at the Deh Chuhar site and it aimed to assess the baseline health and socio-demographic characteristics and to yield information on school attendance status among 3-15 years old children in the catchment area.

Methods: Cross-sectional design was used to capture the snapshot of the DHS characteristics of the population during Dec 2015 to Feb 2016 at Deh Chuhar village, Gaddap town, Karachi. Using systematic sampling technique, 254 households were selected from 15 villages with government elementary school as point of

reference. A pre-tested questionnaire was used. Interview was carried out with married women of child bearing age. Data was analyzed in SPSS. Descriptive statistics; mean and frequencies were mainly used to describe the data.

Findings: Total population residing in 254 households is 2117 with a mean household member of 8 + 3.9. Almost equal gender distribution is observed (51% males vs. 49% females) across entire population. Majority (47%) of the population is in the productive age group across both genders. Nuclear family structure is more common (61%) with majority (57%) of pacca houses with wood being the main source of cooking fuel (99%). Majority (30%) of the households are in the lowest wealth quintile. Majority (94%) of the households don't practice any water purification method before consumption. Large chunk (85%) of the population didn't report any health issue while 11 % household members reported to have minor ailments only. Of the total population, 34% of the population has not received any education while majority (29%) of the population completed their elementary education and only 1% were completed their higher education. Nearly half (47%) of households with 100% of 3-15 years old children are enrolled in school. Lack of interest in studies (41%) and school expenses (22%) were cited as the major reasons for not attending school.

Conclusion: The findings revealed characteristics of a typical urban squatter settlement in the big metropolitan city of Pakistan. There is a need for community based health awareness for water purification methods as the community seems to be at high risk for acquiring water borne diseases. In addition, collaboration with NGOs working to enhance school attendance alongside liaison with Sindh Education Foundation is recommended to enhance school attendance among children.

There is also a dire need to provide livelihood opportunities to the population with less than 100% of school attendance to overcome financial barriers for acquiring education.

Keywords: Demographics, health, social

13.32

GEO-SPATIAL REPORTING FOR MONITORING OF POLIO IMMUNIZATION THROUGH MOBILE PHONES; FINDINGS FROM A FEASIBILITY STUDY

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Introduction: The addition of Global Positioning System (GPS) to a mobile phone makes it a very powerful tool for surveillance and monitoring coverage of health programs. This technology enables transfer of data directly into computer applications and cross-references to Global Information Systems (GIS) maps, which enhance assessment of coverage and trends. Utilization of these systems in low and middle-income countries is currently limited, particularly for immunization coverage assessments and polio vaccination campaigns.

Objectives: We piloted the use of mobile phones for data collection and discussed its potential as a tool for surveillance and monitoring of house to house polio immunization coverage.

Methodology: Using GIS enabled smart phones; a survey of children less than five years of age was conducted in randomly selected representative clusters of Karachi, Pakistan including three high risk towns where a polio case was detected in 2011. The study was

conducted from March 2012 to April 2013 and the data was linked with an automated SMS system for monitoring of supplementary immunization activities (SIAs) in Karachi. After each SIA, a visual report was generated according to the coordinates collected from the survey.

Results: This study supports a model system in resource constrained setting that allows routine capture of individual level data through GPS enabled mobile phone providing actionable information and maps to local public health managers, policy makers and study staff monitoring immunization coverage.

Conclusions And Recommendations: We found that the mobile phones incorporated with GIS maps improve efficiency of health providers through real-time reporting and replacing paper based questionnaire for collection of data at household level. Visual maps generated from the data collected and geospatial analysis can give a better assessment of the Immunization coverage and polio vaccination campaigns.

Keywords: Global Information System (GIS), surveillance,, polio & supplementary immunization activities

13.33

EFFECT OF MOBILE PHONE TEXT MESSAGES REMINDERS ON UPTAKE OF ROUTINE IMMUNIZATION IN PAKISTAN- A RANDOMIZED CONTROLLED TRIAL

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Introduction: It is estimated that 60% of global childhood mortality is attributable to vaccine

preventable infectious diseases. Pakistan ranks 4th in child mortality worldwide, with mostly due to infectious diseases and many of them are vaccine preventable. Improved routine immunization coverage is recommended as the priority public health strategy to decrease vaccine preventable diseases and eradicate polio in Pakistan and worldwide.

Objectives: We aimed to ascertain whether customized automated one way short message service (SMS) reminders to the caregivers/parents delivered via mobile phones could improve routine immunization coverage as per the expanded program of immunization in Pakistan.

Methodology: A randomized controlled trial was conducted in an urban squatter settlement area of Karachi, Pakistan. Three hundred infants less than two weeks of age were enrolled and randomized to the intervention (one way SMS reminder) or control (standard care) groups. The intervention group parents received four automated one way SMS reminder messages at weeks 6, 10 and 14 as per the expanded program of immunization schedule. At 18 weeks of child life, information regarding vaccination coverage rates was obtained. *Results:* A total of 300 participants, 150 each in the intervention and control arm were enrolled. Ninety four percent of the participants had a working mobile phone and out of them 99% showed willingness to receive text reminders for immunization. Six percent of the participants replied of not receiving the SMS text messages. Intention to treat analysis (all those whose who were enrolled) showed that immunization coverage was consistently higher in the intervention arm children as compared to control group at all schedules, however not statistically significantly: at 6 weeks (77% versus 74%, $p=0.46$); 10 weeks (78% versus 74%, $p=0.52$) or 14 weeks (56% versus 49%, $p=0.38$).

Conclusions And Recommendations: An automated simple one-way SMS text message reminder can have a strong impact in improving routine immunization coverage in low middle-income country settings like Pakistan. Large-scale studies comparing different types of SMS text messages, including educational and one way versus two-way communication are needed to determine effectiveness for SMS based interventions for improvement in vaccination coverage.

Keywords: Short message service (SMS), routine immunization, mHealth & Pakistan

13.34

PREVENTION OF PERTUSSIS IN YOUNG-INFANTS (PREPY) BASELINE SURVEILLANCE STUDY TO IDENTIFY THE BURDEN OF PERTUSSIS IN EARLY INFANCY IN PAKISTAN

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Objectives: The objectives of this study were to estimate the incidence of pertussis among infants in the first 18 weeks of life and evaluate a modified version of the Preziosi scale of pertussis severity to classify pertussis severity (i.e. mild, moderate, severe disease) among infants.

Methodology: The study enrolment started from February 2015 and last follow up occurred on 12 April 2016. The study was conducted at four low-income settlements of Karachi. Modified Preziosi scale is used to identify symptoms most predictive of pertussis severity. Infants were followed till 18 weeks of life and surveillance

was conducted through in-person visits at home and telephone. Infants meeting the standardized syndromic definition and having a positive PCR test for B. pertussis are identified as pertussis positive cases.

Results: Overall 2,021 infants were enrolled in the study. The median age in days, weight in grams and length in centimeters at the time of enrollment was 20 (IQR 9-41), 3,320 (2,820 – 3,970) and 51.5 (IQR 49.0 – 53.9) respectively. Fifty two percent of the infants were male; the median birth weight in grams was 2,800 (IQR 2,500 – 3,000). Eight pertussis cases were confirmed 1.14 (0.57, 2.28) (incidence rate /1000 person-months 95% CI). Out of these cases 3 were severe pertussis 0.43 (0.14, 1.33) and 5 were non-severe pertussis 0.75 (0.31, 1.81).

Discussion: We have found a moderate burden of pertussis disease in our surveillance catchment area and have identified pertussis as a pathogen responsible for considerable disease among infants in Karachi. This is a first step in estimating the public health impact of pertussis in young infants in low and low-middle income countries.

Keywords: Pertussis, Surveillance, Pakistan

13.35

DETERMINING THE STRESS LEVEL, CONTRIBUTING FACTORS, AND BUFFER MECHANISMS AMONG WOMEN FROM TWO RURAL DISTRICTS OF PAKISTAN: AN AREA OF SEVERE UNMET NEED FOR ACTION

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Introduction: Globally, literature reported that women living in remote or rural areas are the most high-risk group for developing stress. There is a discernable gap in available literature from the rural women in Pakistan regarding stress and anxiety. Therefore the aim of this study was to assess the burden of stress and anxiety and associated risk factors among rural women in Pakistan.

Methods: A cross sectional survey conducted among 380 married women in Sindh and Punjab provinces of Pakistan, respectively, during June to September, 2014. AZ stress scale was used to assess the prevalence and multivariate linear/logistic regression were used to determine associated factors of stress among rural women.

Results: The mean age of the participants was 33.2 + 10.9. Among ethnic groups, 48.7% were Sindhi while 43.2% were Punjabi. 67.9% of women were uneducated and 94.5% of the women were housewives. Most of the women have their monthly household income (<10 thousand PKR) 70.3%. 87.9% of the husbands' were doing blue-collar jobs.

48.2% of the women were found to be stressed while only 11.8% were using productive ways to buffer their stress. Linear regression shows the level of stress among were found to be higher among Sindhi ethnicity (β : 2.03, 95% CI: 1.28, 2.78) uneducated women (β : 1.44, 95% CI: 0.67, 2.21) and monthly household income < 10,000 PKR (β : 1.59, 95% CI: 0.53, 2.65) ($p < 0.05$).

Conclusion: Household financial deficits, lack of education among rural women in Sindh were the major contributing factors leading to high stress level. We propose the need to understand the context in which coping takes place and to enhance resilience strategies used by women in developing countries such as Pakistan to manage the multiple stressors associated with confronting life's challenges

Keywords: stress, women, pakistan

13.36

MONITORING OF POLIO IMMUNIZATION CAMPAIGNS USING SMS AND VOICE BASED REPLIES IN POLIO HIGH RISK UNION COUNCILS (UCS) IN PAKISTAN

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Introduction: In our previous proof of concept study we were able to monitor polio supplementary immunization activities using an automated short text messaging system in Karachi, Kazi et al Bull World Health Organ. While the data and mobile phone numbers obtained through the baseline worked very well, this strategy may not be feasible to scale up at county or national level. Security situation in some areas may not even allow for this baseline survey. Hence there is a need to communicate through mobile phone with people in certain geographic locations without a baseline survey. **Study Objective:** The objective of this study is to compare the polio immunization campaign coverage obtained through SMS text and automated voice call replies according to mobile phone providers tower coverage area with conventional coverage data for polio immunization campaigns.

Methodology: In our this on-going study the partner mobile phone service users within tower coverage of the study catchment area will be sent automated SMS text and voice call. The cell phone numbers and any other personal information that exists with Mobile Phone Company will not be shared with Aga Khan University. Only the replies of SMS text and robotic calls will be shared in form of database for study purpose only. The study sites will include high risk UCs for polio in three districts

(i.e. Karachi, Peshawar and Quetta), according to WHO classification, except in FATA.

Recruitment Process: Replies of the two questions sent either through SMS or IVR calls asking whether 1) the polio vaccinator visited their household or not and 2) whether their child got polio drops or not will be shared by Mobilink/Ufone. Those replying back to both questions will be considered as part of the study.

Discussion/ Expected Outcome: This study will help to evaluate if a mobile phone reply based system according to tower coverage pre-existing cell phone registry is feasible and effective to monitor polio campaign coverage.

Keywords: Short message service (SMS), Voice Message, Polio Monitoring

13.37

BARRIERS IN COVERAGE AND IMPLEMENTATION OF HARM REDUCTION PROGRAM FOR INJECTING DRUG USERS AT RISK OF HIV IN KARACHI, PAKISTAN: A QUALITATIVE EXPLORATORY STUDY

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Background: HIV/AIDS is a major public health issue and 5th leading cause of disability around the world. Globally, around 16 million people inject drugs and three million of them have HIV infection. WHO recommends a comprehensive package of evidence based approach named as Harm Reduction Program (HRP) for HIV prevention, treatment and care of people who inject drugs. HRP around the world has shown significant contribution in reducing HIV prevalence among IDUs. However in Pakistan

the coverage has been as low as 13% which is not sufficient to make a significant impact. Aim The aim of this study was to reduce HIV transmission among IDUs by improving coverage and effectiveness of HRP through policy recommendation to make existing HRP comprehensive and accessible to IDUs.

Methodology: This was a qualitative exploratory study conducted in Karachi in 2015. Study participants were Outreach Workers and management of organizations implementing HRP. The study explored to assess the coverage and effectiveness of existing interventions. Participants from two Non-Governmental Organizations in Karachi were recruited through purposive sampling technique. Key informant interviews (KII) with management and Focus Group Discussion (FGD) with ORWs of HRP were conducted by using semi structured guides.

Results: Participants of both KII and FGDs identified barriers in coverage and explored field implementation issues resulting in less effectiveness of the program. The identified barriers were divided into service provision and service utilization. Lack of human resource and limited time service were also suggested as impediment in providing services. While at ground level lack of punctuality by ORWs and mobility pattern of IDUs was identified as major barriers. The major gaps identified in this study were lack of the ownership of the program by government, absence of Opioid Substitution Therapy (OST), withdrawal of Primary Healthcare (PHC) services and limited rehabilitation services for IDUs.

Conclusion: Existing HRP has low coverage and is ineffective in controlling HIV transmission among IDUs in Karachi. There is a need to make this program comprehensive to bring a meaningful impact by integrating preventive, curative, and rehabilitative services in this program. The findings from this study can help policy makers to redesign program and

make it holistic and effective in future to control the epidemics among IDUs

Keywords: Harm Reduction Program, Injecting Drug User, HIV

13.38

SCHOOLS OF PUBLIC HEALTH IN LOW AND MIDDLE-INCOME COUNTRIES: AN IMPERATIVE INVESTMENT FOR IMPROVING THE HEALTH OF POPULATIONS?

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Background: By the close of the nineteenth century, Schools of Public Health (SPHs) began to emerge in western countries in response to major contemporary public health challenges. The Flexner Report (1910) emphasized the centrality of public health measures in health professional education. The Alma Ata Declaration on Primary Health Care and the Commission on Social Determinants of Health strengthened the case for SPHs in LMICs as key stakeholders in efforts to reduce global health inequities. This scoping review groups text into public health challenges faced by LMICs and the role of SPHs in addressing these challenges.

Main text: The challenges faced by LMICs include rapid urbanization, environmental degradation, unfair terms of global trade, limited capacity for equitable growth, mass displacements associated with conflicts and natural disasters, and universal health coverage. Poor governance and externally imposed donor policies and agendas, further strain the fragile

health systems. Barriers to education and research imposed by limited resources, political and economic instability, and unbalanced partnerships aggravate the crisis. To address these challenges effectively SPHs are offering broad based health professional education, multidisciplinary population based research and collaborative partnerships. SPHs are looked upon as the key drivers to achieve sustainable development goals.

Conclusion: SPHs in LMICs can contribute to overcoming public health challenges including achieving SDGs. They can develop cadres of competent public health professionals: educators, practitioners and researchers. Funding support, human resources, and agency are unfortunately often limited in LMICs, requiring constructive collaboration between LMICs and counterpart institutions from HICs.

Keywords: Schools Of Public Health, Low And Middle Income Countries, Universal Health Coverage

13.39

CHALLENGES IN IMPLEMENTING A COMMUNITY BASED TRIAL IN A RURAL PAKISTANI DISTRICT: LESSONS LEARNT FROM PROJECT NIGRAAN

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Background: NIGRAAN, an implementation research (IR) project was implemented in a rural district of Sindh to improve community case management of diarrhea and pneumonia by enhanced supportive supervision through lady

health supervisors (LHSs). This study explored the key challenges faced while implementing NIGRAAN

Methods: Focus group discussion, in-depth interviews, qualitative survey with research and field teams and documents review were conducted to explore the key challenges Results culture of ad hoc decision making was common where policy makers relied more on making phone calls to resolve program level issues. Due to structural issues, selection of study site was done by convenience where LHW-P was functional and intervention could be implemented. Setting up a surveillance system for reporting of diarrhea and pneumonia cases was challenging due to rural geography and unavailability of maps. Selection of LHWs was challenging due to unavailability of updated lists. Due to lack of culture of accountability in the LHW-P, case reporting remained low initially. Lack of transport and absence of culture of providing written feedback were the main barriers to implementing idea of feedback cards for LHWs. Presence of a district focal person proved crucial to successfully implementing NIGRAAN. Finding and retaining qualified staff in a rural area remained a constant hurdle. Since NIGRAAN was a behavior change intervention and both intervention and control arms were located in the same district, results showed likely contamination in the control arm. *Conclusion:* Future studies in this area may benefit from this information by being better informed

Keywords: implementation research, research challenges, health systems research

13.40
POLICY MAKERS PERCEPTIONS
REGARDING THE PERFORMANCE OF THE
LHW - PROGRAM: IS THERE A KNOW DO
GAP? FINDINGS FROM THE NIGRAAN
PROJECT

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Background: Little data is available about LHW-P managers and policy makers' understanding and perceptions to resolve the issue of stagnant under-5 mortality attributable to diarrhea and pneumonia. An exploratory qualitative study was done through Project NIGRAAN to assess provincial policy makers' views about the challenges encountered by LHW-P for improving the quality of services provided.

Methods: Seven face to face in-depth interviews were held complemented with semi structured questionnaire administered to nine senior and mid-level district and provincial level policy makers. Responses from both methods were grouped, compared and then merged to arrive at □ve themes; suboptimal skills and technical competence, motivation, governance and accountability, negligible supervision and weak management information system.

Results: Policy makers were aware that LHWs and LHSs' community case management (CCM) skills are suboptimal. Weak supervision, lack of training, irregular provision of salary and transportation were cited as major factors contributing towards this poor performance. A number of respondents considered LHWs to be overburdened but few suggested any solutions to reduce this work load. Health workers' motivation was considered to be affected by lack

of supplies and dearth of recognition for their services. Although mindful of the important uses of data collected by LHW-P, policy makers did not comment on its utility for evidence-based decision making.

Conclusion: Policy makers are aware of the LHW-P challenges that lead to suboptimal CCM for childhood diarrhea and pneumonia. In the absence of political commitment and ownership, improvements in quality and performance will remain a dream.

Keywords: policy makers' perceptions, LHW program, Pakistan

13.41
CAREGIVER KNOWLEDGE, PRACTICES
ABOUT CHILDHOOD DIARRHEA AND
PNEUMONIA AND THEIR PERCEPTIONS
OF LHW PROGRAM.. FINDINGS FROM
NIGRAAN IMPLEMENTATION RESEARCH
PROJECT

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Background: The knowledge and practices of Lady Health Workers (LHWs) in Pakistan for community case management (CCM) of childhood diarrhea and pneumonia are suboptimal. Hence these skills have failed to translate to improved CCM practices by caregivers (mothers). This study explores if there was any improvement in caregiver's knowledge and practices about childhood diarrhea and pneumonia and their perceptions and utility of the lady health worker program before and after a supportive supervision intervention in a randomized control trial.

Methods: Cross sectional household surveys were conducted with community care givers at baseline and end line in project NIGRAAN. With 80% power and 95% confidence interval, at least 8,500 households were to be sampled. Using systematic random technique every fourth household was interviewed; 2,125 in each arm. The data collection instrument was adapted from Pakistan demographic and health survey 2012-13. The extent to which the intervention and control groups differed from baseline to end line was assessed using chi square test.

Results: Comparing baseline to end line, there were significant improvements in caregiver's knowledge of loose motion and dehydration ($P<0.05$) as signs and symptoms childhood diarrhea. There was also a significant increase in caregiver's knowledge of presenting features of pneumonia ($P<0.05$). The proportion of caregiver's seeking advice from public sector significantly improved in intervention arm ($P<0.05$). Private sector however was the overall preferred choice for care seeking during an episode of ARI. There were significant improvements in awareness about LHW's and their household visits ($P<0.05$). However, the actual care seeking from LHWs stayed low ($<0.5\%$) for both diarrhea and ARI.

Conclusion: Despite high awareness of LHW program and frequent LHW visits, caregivers lack confidence in LHWs for childhood diarrhea and pneumonia resulting in their low utility as frontline health workers. Training focused on childhood illness, transportation and provision of supplies and medicines can improve LHW performance and contribute to their better utility

Keywords: diarrhea, pneumonia, community case management

13.42

IMPROVING COMMUNITY CASE MANAGEMENT OF DIARRHOEA AND PNEUMONIA IN DISTRICT BADIN, PAKISTAN THROUGH A CLUSTER RANDOMISED STUDY—THE NIGRAAN TRIAL PROTOCOL

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Background: Diarrhoea and pneumonia contribute 30% of deaths in children under 5 in Pakistan. Pakistan's Lady Health Workers Programme (LHW-P) covers about 60% of the population but has had little impact in reducing morbidity and mortality related to these major childhood killers. An external evaluation suggests that lack of supportive supervision of LHWs by lady health supervisors (LHSs) is a key determinant of problem. Project NIGRAAN aims to improve knowledge and skills of LHWs and community caregivers through supervisory strategies employed by LHSs.

Methods/Design: NIGRAAN is a cluster-randomised trial in District Badin, Pakistan. There are approximately 1100 LHWs supervised by 36 LHSs in Badin. For this study, each LHS serves as a cluster. All LHSs who are functional are eligible. Thirty-four LHSs are allocated to either intervention or control arms in a ratio of 1:1 through computer-generated simple randomisation. Five LHWs from each LHSs are randomly picked. All 34 LHSs and 170 LHWs will be actively monitored. The intervention consists of training to build LHS knowledge and skills, clinical mentorship and written feedback to LHWs. Pre- and post-intervention

assessments of LHSs, LHWs and community caregivers will be conducted via focus group discussions, in-depth interviews, knowledge assessment questionnaires, skill assessment scorecards and household surveys. Primary outcome is improvement in CCM practices of childhood diarrhoea and pneumonia.

Discussion: NIGRAAN takes a novel approach to implementation research and explores whether training of LHSs in supervisory skills results in improving the CCM practices of childhood diarrhoea and pneumonia. The enablers and barriers towards improved CCM would provide recommendations to policymakers for scale up of intervention nationally and regionally.

Keywords: Community case management, Supportive supervision, Implementation Research

13.43

CAN SUPPORTIVE SUPERVISION IMPROVE CASE MANAGEMENT OF CHILDHOOD DIARRHEA AND PNEUMONIA? RESULTS FROM NIGRAAN TRIAL IN BADIN PAKISTAN

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Background: The lady health workers (LHWs) of “Lady Health Worker Programme” (LHW-P) provide basic services including management of childhood diarrhea and pneumonia-the leading killers in children under-five. Few problems with the supervision of LHWs by Lady Health Supervisors (LHSs) still need optimization, limiting their effectiveness in treating childhood diseases.

Methods: NIGRAAN is a cluster-randomised trial in District Badin. 34 supervisors were randomly assigned (17 each) to either intervention or control groups. A baseline household survey explored care giver perspectives about LHW-P and their health seeking practices. All LHSs and 170 LHWs (randomly selected) were selected for in depth knowledge and periodic skill assessments. Focus groups were also conducted. LHSs in both arms received refresher, followed by in-depth training for intervention arm LHSs on clinical supervisory and mentorship skills including a written feedback to LHWs. For timely flow of information, LHWs were trained to notify their LHSs via SMS, and plan a supervisory follow-up visit. Every LHS was provided a mobile phone.

Results: Though suboptimal at baseline, LHW knowledge was relatively better for diarrhea than pneumonia. In terms of knowledge LHSs were slightly better, but often lacked clinical skills. Not surprisingly, caregivers (97%) preferred doctor for treatment rather than LHW-P. The intervention LHSs showed almost three fold rise for knowledge of diarrhea and pneumonia with two fold rise for supervisory skills compared to control LHSs. The supportive supervision translated into two-fold increase in LHWs’ knowledge and skills for diarrhea and three-fold for pneumonia .

Conclusions: Supportive supervision has the potential to improve CCM of diarrhea and pneumonia. The lessons learnt from NIGRAAN can potentially be extended to Pakistan and beyond.

Keywords: Community case management, Implementation Research, Supportive supervision

13.44 SIGNIFICANCE OF YOUTH SEXUALITY EDUCATION AT SCHOOLS: A LITERATURE REVIEW

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Introduction: Human sexuality is a natural part of human development through every phase of life so why its education are being ignored to youth in schools. While, this age lay the foundation for civilized individuals and school prepares for the real world. This literature review aims to establish the significance of sexuality education among youth in schools.

Method: A comprehensive literature review has been done from 2011 to date, using various scientific database including PubMed, CINHALL, Science direct and Generic search engines.

Findings: Sexual education at school addresses age-appropriate physical, emotional, mental and social dimensions of human sexuality. So, it provides a formal platform which accepts sexual education as part of youth growth rather than marked it as taboo and guide them to build positive attitudes, beliefs and behaviors towards sexuality and their decisions will be based on knowledge. Moreover, lack of formal curriculum, misconception and acceptance to the early youth sexual education and incompetency of parents and teachers to deal this sensitive yet significant subject hinders its introduction to the educational system. However, it is a preventive measure to overcome various health and social issues such as teenage pregnancies, baby dumping, gender inequalities, fatal diseases like Hepatitis B and C, child sexual abuse and sexually transmitted diseases such as HIV/AIDS.

Recommendations: NGOs and government should work together to design and implement a culturally sensitive and age appropriate formal

curriculum regarding youth sexual education. NGOs and health care professionals who work in community and schools and media can also play a vital part to promote its acceptance, alleviate the misconceptions and educate parents and teachers regarding sexual education for youth in schools.

Keywords: Youth, Sexuality Education, Sexual health issues

13.45 MOTIVATING FACTORS OF COMMUNITY HEALTH WORKERS FOR MATERNAL, NEWBORN, AND CHILD HEALTH IN LOW AND MIDDLE-INCOME COUNTRIES: A SYSTEMATIC REVIEW

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Objectives: This systematic review aims to assess and synthesize motivating factors of CHWs for MNCH in a way relevant to policy and program development in LMICs.

Methods: For the systematic review, PubMed, Embase, ISI Web of Science, IBSS, and CINAHL were searched to reach peer-reviewed literature. Searches were limited to English language and a time period starting at 1980, that coincide with global emergence of CHW programs. Reference lists of included studies were searched to identify additional studies on the topic. Of the 2456 records identified, 827 records were selected and assessed for inclusion criteria. Thirteen of 827 records were included as well as an additional five records identified through reference searching. These records were assessed with the data extraction form. After full-text review, fifteen studies were included.

Results: Our thematic analysis built on a conceptual framework stratifying CHW motivating factors into individual, community, and health system levels. Social responsibility and altruism retained its motivating influence because CHWs sourced pride from helping the community and were encouraged by health improvements. Family support was mentioned often as reason for attrition, supplemented by all other individual level factors. Workload and incentives were most influential in CHW demotivation. CHWs felt burdened by unexpected large and draining workloads compounded by evening, nighttime, and weekend work schedules.

Conclusion: The CHW motivation model offers program planners and policymakers a way of identifying when each motivating factor is most relevant and how and with which stakeholders motivating factors can be addressed to improve or protect CHW motivation.

Keywords: CHW, Motivation, MNCH

13.46

HEALTH AWARENESS OF INHABITANTS OF URBAN SQUATTER SETTLEMENTS REGARDING HEPATITIS, DENGUE AND TUBERCULOSIS IN KARACHI, PAKISTAN

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Introduction: More than 9.2 million (40%) people live in squatter settlements in Karachi with poor awareness of health issues. This ignorance has led to an explosive increase in the spread of diseases like Hepatitis, Tuberculosis and Dengue. Approximately every 13th Pakistani is infected with either Hepatitis B or C. In the Middle East and Asia Pacific Region, Pakistan comes second after Egypt for highest

Hepatitis C prevalence rates which accounts for around 4-5% of the population being infected. In developing countries with very poor sanitary conditions and hygienic practices, most children (90%) have been infected with hepatitis A before the age of 10. Similarly, Pakistan has experienced a number of dengue fever outbreaks since 1992. In the 2005 Karachi outbreak 4,500 dengue cases were registered followed by outbreaks in Punjab and other areas. Besides, Pakistan is still facing a high burden of TB and ranks fourth among the six high TB burden countries.

Methods and Results: The AGAHI program is a health awareness model of University-Community partnership whose objective is to improve and enhance the health awareness services offered by Urban Health Program (UHP) Dept of Community Health Sciences (CHS) Aga Khan University (AKU). UHP is a Primary Health Care (PHC) program in the urban squatter settlements of Karachi. It was initiated in 1985 by CHS-AKU as a community campus partnership model with an overall goal to contribute to reductions in health inequities and address the underlying socio-economic determinants of health through sustainable community-oriented health and social development initiatives. The program provides health and socio-economic services to the poor disadvantaged communities of Sultanabad and Rehri Goth in Karachi. AGAHI applies novel solutions that take advantage of latest scientific developments to provide health education and awareness emphasizing behavior change for vaccine uptake, personal and food hygiene, care seeking and compliance to treatment for the prevention and control of communicable diseases like Hepatitis, Tuberculosis and Dengue. In a short span of 12 months, AGAHI has been able to conduct 80 health awareness sessions with total participants of more than 4000 including males and females of different age groups and occupations. Through this project all population segments in both the Rehri Goth and Sultanabad communities (approximately 75,000 each) are targeted utilizing models of success in other areas for instance school sessions, role plays, lane sessions, household inspections, sanitation

drives, poster competitions, training of health care workers, awareness walks, medical camps, door to door campaign, insecticide residual spraying and collaboration with religious leaders, public sector and Non-Governmental Organizations. Moreover, the high risk and vulnerable populations are identified through facility based records and community based work, screened for the three communicable diseases (374 screened), counseled with family and referred for treatment through liaison with other providers. A survey is being conducted to assess the knowledge of these communities regarding communicable diseases in comparison with the neighboring communities to see the impact of this rigorous and dedicated project.

Keywords: Urban, Agahi, Health awareness

13.47

STRENGTHENING HEALTH SYSTEM: USING MOBILE PHONES FOR CO- ORDINATED COMMUNITY CASE MANAGEMENT OF CHILDHOOD DIARRHEA AND PNEUMONIA IN DISTRICT BADIN, PAKISTAN

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Background: Fourth evaluation of Lady Health Worker's Program identified weak supervision of Lady Health Workers (LHWs) by their supervisors (LHSs) as a determinant of poor community case management of childhood diarrhea and pneumonia. Weak supervision was explained by lack of coordination among them. To improve coordination between LHWs and LHSs, this study used mobile phones for timely case reporting by LHWs and supervisory follow-up by LHSs.

Materials and Methods: Short Message Service was added to track diarrhea and pneumonia cases within existing Management Information System of the Lady Health Worker's Program in District Badin. Total 34 LHSs and 170 LHWs were enrolled. The LHSs were given mobile phones for real-time communication with LHWs. Upon case identification, LHWs relayed information using text messages and arranged appropriate follow-up with LHSs.

Results: Between the first and final quarters of surveillance, LHW to LHS case reporting via text messages improved from 43% to 98%. Almost all cases were reported within 24 hours of identification. LHSs followed up cases at households and provided written feedback to LHWs. LHWs provided oral rehydrating salts to 23% diarrhea and antibiotics to 20% pneumonia cases only. Referral rates to other facilities were high (76% diarrhea; 88% pneumonia). Outcome of cases was tracked via mobile phones 72 hours later; 47% were recovering with private, 26% with government facility and only 3% with LHW treatment.

Conclusion: Mobile phones have the potential to improve supportive supervision by enhancing coordination among health workers for timely case reporting and appropriate follow-ups. This could be a useful strategy for strengthening health system.

Keywords: Mobile phones, CCM, Diarrhea and Pneumonia

13.48

ROTAVIRUS BURDEN IN CHILDREN < 5 YEARS IN OSHIKHANDASS, A RURAL NE PAKISTANI VILLAGE: 20-YEAR FOLLOW-UP

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Introduction: Diarrhea is a major cause of 700,000 deaths annually; 197,000 due to rotavirus [2014, Kazi]. In Pakistan, diarrhea causes 16% of child deaths [2013, Quadri]. Studies on RV diarrhea in rural communities are limited. This community-based study assessed changes in rotavirus epidemiology over time in Oshikhandass, where vaccine is not introduced. **Methods:** Lady Health/Research Workers trained in diarrhea management and supervised by senior health staff visited children weekly, collecting clinical data and stool samples from diarrhea cases. In our first study (1989-1991), samples were frozen (-20°C) and transported to ICDDR-Bangladesh and CDC-USA for testing using ELISA Immunoassay for rotavirus, astrovirus, and adenovirus-40/41. In the second study (July-December 2013), samples were processed for rotavirus only at NIH-Islamabad, using ProSpecT Microplate Assay to detect Group-A RV. The cut-off value was calculated with 0.200 absorbance units. **Results:** 539 samples were tested for RV in the first study: 43/539 (8.0%, B=+2.1%) tested positive (8 positive for adenovirus-40/41 and

astrovirus). 27/539 (5.0%) tested positive for adenovirus-40/41 and 2/539 (0.4%) adenovirus-40/41 and astrovirus. Of 107 samples tested in the second study (clinical data available for 97), 9/107 (8.4%, B=±5.3%) tested positive. Mothers reported bloody diarrhea in 20/539 (5.8%) of children positive for RV in the first study, and 7/97 (7.2%) in the second. In the second study, 2/97 (2.1%) were referred to health facilities. **Conclusion:** Overall burden of RV has not changed from 1989/91-2013 based on our limited 2013 sample. Introduction of RV vaccine may change this. Further investigation of children requiring referral and hospitalization is underway.

Keywords: Rotavirus, Epidemiology, Diarrhea

13.49

ASSOCIATION OF ACUTE CORONARY SYNDROME (ACS) WITH INDOOR AIR POLLUTION DUE TO BIOMASS FUEL AMONG WOMEN IN RURAL SINDH, PAKISTAN: A MATCHED CASE CONTROL STUDY

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Introduction: About 41% of the world's population use biomass fuel for cooking. Biomass combustion produces toxic chemicals including particulate matter (PM). PM in ambient air is associated coronary heart disease. However, association of coronary heart disease with indoor air pollution due to biomass fuel use is unclear.

Objective: The risk of acute coronary syndrome (ACS) was assessed among rural women, according to their type of fuel for cooking. **Methods:** The study was conducted at two

tertiary care hospitals in respective rural districts of Nawabshah and Mirpurkhas in Sindh province of Pakistan. A total of 374 cases of ACS and two age matched controls (748 controls) were recruited from the same respective hospitals. Exposure to fuel and other confounding variables for ACS was ascertained using questionnaire. The results were adjusted for socio-demographic characteristics, active and passive smoking, physical activity, diet and obesity (waist to hip ratio). Conditional logistic regression was conducted to estimate adjusted matched odds ratio (Adj mOR) with 95% confidence interval (95% CI). In addition, population attributable fraction (PAF) was also estimated.

Results: Preliminary analysis for 307 cases and 614 controls are presented here. After adjusting for potential confounders, biomass fuel use was strongly associated with ACS. As compared to women using natural gas, biomass users were at higher risk of ACS (Adj mOR. 4.5; 95% CI: 1.4-14.6). In the final model consumption of chewable tobacco, oil, and consumption of meat, waist to hip ratio equal to or more than 0.85 were significantly associated with increased risk of developing ACS. PAF of ACS in relation to biomass fuel use was estimated to be 55% (95% CI: 51.7-58.2%)

Conclusion: This study is first of its kind and it provided evidence that biomass fuel use for cooking is associated with ACS. It also demonstrated that the risk is reduced if natural gas (a cleaner fuel) is used for cooking.

Keywords: acute coronary syndrome, biomass fuel, matched case control

13.50

STATUS OF CHILDHOOD DIARRHEA IN RURAL NORTHERN PAKISTAN: 20 YEAR FOLLOW-UP FROM 1989-1996 TO 2012-2014

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Introduction: A longitudinal study on diarrhea among children <5 was conducted 1989-1996 and again 2012-2014 in a small village, Oshikhandass, Gilgit-Baltistan. In the first study, diarrhea was the second cause of child mortality. Interventions introduced 1996-2002 included water-filtration plants, improved pit-latrines, and flush-toilets. The second study explored changes in diarrhea incidence.

Methods and Materials: Lady Health/Research Workers trained in diarrhea management visited households weekly: if diarrhea occurred, treatment/referral was given, including antibiotics for bloody diarrhea, and follow-up visits were made until the child recovered. Frequency and characteristics of cases was assessed.

Results: In the first study, 1847 children were followed: 1123/1847 (60.8%) had diarrhea at least once, with 2807 cases total. 71.9% of episodes were watery, 25.2% loose, 18.8% mucoid, and/or 12.5% bloody. Cases were categorized as acute (<7 days) (56.7%), prolonged (7-13 days) (37.5%) or persistent (≥14days) (8%). Thirty-five diarrhea-related deaths occurred 1989-1996. In the second study, 1176 children were followed: 521/1176 (44.3%) had diarrhea at least once, with 1184 cases total. Again, episodes were mostly watery (78.9%) or

loose (42%), then mucoid (31.2%), bloody (6.3%) . One diarrhea-related death occurred. In 2012-2014, mean diarrhea episodes/household was less in households with access to a functional water treatment plant (0.79 versus 1.26 episodes), and when households boiled/bleached water (0.97) as opposed to straining/letting-stand (1.43).

Conclusion: While frequency of episodes and diarrhea-related mortality decreased between studies, some characteristics of diarrhea remain similar. In this setting, improved water access and treatment practices are key factors in curtailing cases of childhood diarrhea

Keywords: Diarrhea, Followup study, Northern Pakistani village

13.51

LEAD ISOTOPES RATIO (LIR) ANALYSIS AND SOURCE APPORTIONMENT OF LEAD AMONG PREGNANT WOMEN, NEWBORNS AND CHILDREN IN KARACHI, PAKISTAN

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Introduction: Lead in petrol has been controlled since 2001 in Pakistan. However, high blood lead levels have been reported among new-borns and young children in recent surveys. We objectively assessed lead levels and isotope ratio (LIR) to identify possible sources of lead exposure among pregnant women and young children (1-3 years) in Karachi, Pakistan.

Methods: Based on pregnant women's blood lead levels, 2 families (blood lead concentration; approximately 50 µg/dL), 2 families (20 µg/dL) and 4 families (10 µg/dL) out of 66 were selected. Concurrently, 3-day food duplicate samples for women and young child, house-dust, drinking water, house dust, respirable dust, soil

near the house and petrol and engine lubricant purchased in their neighbourhood were collected and in-vitro bioaccessible lead was assessed for each source.

Results: Lead in food contributed to largely up to 60% among the high lead body burden families. Among less exposure groups, house-dust and respirable dust were equally important contributor for lead exposure to lead in food especially among young children in Karachi. LIR of food and blood sample contains similar to that in petrol.

Conclusion: First, a surveillance study of lead in food is urgently needed to devise countermeasures to reduce dietary intake of lead, specially higher exposure group. Further studies are needed to identify routes of contamination of food in this population. Second, household cleaning practices and behavioral interventions were needed to decrease the lead exposure among young child in the households in Pakistan..

Keywords: lead, isotope, source apportionment

13.52

IDENTIFYING ADOLESCENTS AT RISK OF SOCIAL ANXIETY DISORDER USING LIEBOWITZ SOCIAL ANXIETY SCALE FOR CHILDREN AND ADOLESCENTS

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Introduction: Social anxiety disorder (SAD) is common among adolescents; prevalence range from 9–34%. People with SAD have intense fear of situations where they are exposed to strangers, who are likely to negatively evaluate

them. Data indicate that people living with SAD have diminished perceptions of quality of life i.e. they are less satisfied with their life experiences.

Methods: This cross-sectional study was conducted in Karachi, Pakistan from December 2015 to February 2016. We recruited 450 high-school students of ages 14–17 using a self-administered questionnaire that was based on the Liebowitz Social Anxiety Scale for Children and Adolescents (LSAS-CA-SR) and the brief version of the World Health Organization Quality of Life (WHOQOL-BREF) questionnaire.

Results: We found a SAD prevalence of 23.8%, with a preponderance of children from public than private schools (33% vs. 18%, $p < 0.001$). SAD status, however, was not associated with gender and age. Higher levels of SAD were found to be correlated with a poorer quality of life. Our study also found that students with SAD had statistically significant lower quality of life scores, as compared to students without SAD.

Conclusion: SAD is prevalent among Pakistani school adolescents and has a substantial negative effect on quality of life. Adolescents must be targeted with interventions such as group treatment and mentorship programs that are effective in tackling the menace of social anxiety.

Keywords: Social Anxiety Disorder, Adolescents, Quality of Life

13.53

EXTERNAL LEAD CONTAMINATION OF PREGNANT WOMEN'S NAILS FROM SURMA IN PAKISTAN: ARE NAILS RELIABLE BIOMARKERS?

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The negative health effects of heavy metal elements are public health concerns, especially lead influence fetus in its mother's body. The lead concentrations in Pakistani pregnant women's nails were measured to estimate the lead exposure. Thirteen nail samples were high lead concentrations above the fatal lead poisoning case, and it was supposed the possibility of an external contamination of the nails. In Pakistan, eye area cosmetics such as Surma (also known as Kohl and Kajal) is one of the important source of lead pollution. Total 30 cosmetic samples were collected in Pakistan and determined the lead contamination by EDXRF. Lead content as the metal composition of four Surma products were more than 96%. From the SEM observations, Surma containing lead was made from a powder of galena (ore of lead sulfide). Moreover, leaded Surma was composed of inhalable particles, classified PM10, that was able to deposit in the respiratory system. Relative bioavailability of lead in the Surma was determined by the in vitro bioaccessibility assay, and the mean was 5.2%. This result was represented that if pregnant woman (assuming a body weight of 60 kg) take in only 29 mg leaded Surma in a week, it will exceed the former PTWI. The correlation between leaded Surma and lead contaminated nails was confirmed by lead isotope ratios analysis and leaded Surma was involved with lead contaminated nails of Pakistani pregnant women. These results were suggested that lead in the nail was derived from exposure to lead pollutions and external contamination by leaded Surma. Thus, leaded Surma is important in lead contamination of pregnant women's nails in Pakistan. And nail is not suited to a biomarker of lead exposure in the countries using Surma, because leaded Surma is made an overestimate of the lead exposure.

Keywords: lead, surma, nails

13.54

RISK ASSESSMENT FOR ARSENIC-CONTAMINATED GROUNDWATER ALONG RIVER INDUS IN PAKISTAN

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Background and Objective: The study determined the risk zone and estimated the population at risk of adverse health effects for arsenic exposure along the bank of River Indus in Pakistan.

Methods: A cross-sectional survey was conducted in 216 randomly selected villages of one of the districts along River Indus. Wells of ten households from each village were selected to measure arsenic levels. The location of wells was identified using global positioning system device, and spatial variations of the groundwater contamination were assessed using geographical information system tools. Using layers of contaminated drinking water wells according to arsenic levels and population with major landmarks, a risk zone and estimated population at risk were determined, which were exposed to arsenic level ≥ 10 $\mu\text{g/L}$.

Results: Drinking wells with arsenic levels of ≥ 10 $\mu\text{g/L}$ were concentrated within 18 km band along the river bank. Based on these estimates, a total of 13 million people were exposed to ≥ 10 $\mu\text{g/L}$ arsenic concentration along the course of River Indus traversing through 27 districts in Pakistan.

Conclusion: This information would help the researchers in designing health effect studies on arsenic and policy makers in allocating resources for designing focused interventions for arsenic mitigation in Pakistan. The study methods have implication on similar populations which are affected along rivers due to arsenic contamination.

Keywords: Arsenic, drinking groundwater, global positioning system

13.55

EXTERNAL LEAD CONTAMINATION OF WOMEN'S NAILS BY SURMA IN PAKISTAN: IS THE BIOMARKER RELIABLE?

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The adverse health effects of heavy metals are a public health concern, especially lead influence fetus in its mother's body. The lead concentrations in Pakistani pregnant women's nails, used as a biomarker, were measured to estimate the lead exposure. A total of 84 nail sample were analyzed. Thirteen (15.5%) nail samples had levels above the lethal concentration where human survival was not possible, raising the possibility of an external contamination. Eye cosmetics, such as surma (also known as kohl and kajal), are one of the important sources of lead exposure in Pakistan. High lead content products were found in eye cosmetic samples (surma/kajal) that were made in Pakistan and Saudi Arabia. From the scanning electron microscopy observations, it was observed that surma containing lead was made from a powder of galena (ore of lead sulfide). Moreover, leaded surma consists of inhalable particles (less than 10 micron). Relative bioavailability of lead in the surma was determined by the in vitro bioaccessibility assay, as 5.2%. The correlation between leaded surma and lead contaminated nails by lead isotope ratios analysis indicated lead contamination of nails by surma. These results suggest that lead in the nails were derived from exposure to lead and external contamination by leaded surma. Therefore, nails are not suited as a biomarker for lead exposure in the countries using surma,

because leaded surma can overestimate the lead exposure.

Keywords: lead, nails, contamination

13.56

INEQUITIES IN ANTENATAL CARE, AND INDIVIDUAL AND ENVIRONMENTAL DETERMINANTS OF UTILIZATION AT NATIONAL AND SUB-NATIONAL LEVEL IN PAKISTAN: A MULTILEVEL ANALYSIS

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Introduction: Although Pakistan Demographic and Health Survey (PDHS) is an inclusive investigation, nonetheless published report 2012-2013 offer limited evidence regarding antenatal care (ANC). Pakistan being large country and after 18th amendment principally policies are made at provincial level, it is vital to have sub-national (province-wise) evidence for any policy implication.

Objectives: This study assessed the individual and environmental determinants of ANC using Andersen's model of health care utilization and multilevel analysis.

Methods: PDHS 201-13 data was analyzed. Separate models of determinants were developed for national, urban/rural and five provinces using multivariate analysis applying sampling weights.

Results: Recommended ANC coverage is low in Pakistan (37%) and gross inequities exist in ANC coverage, predominantly across provinces (15 to 79%). Women education, health literacy and socio-economic status were strong predictors of increased ANC utilization and these have stronger influence, almost twice, in urban communities. In contrast, women's education had no influence on ANC utilization in Khyber Pkhtun Khwa (KPK) and Baluchistan

(BC) provinces. Notably, husband's education was significantly associated with ANC utilization in KPK only. Health literacy, wealth quintile, and parity were equally important predictors across all provinces. At multilevel analysis, besides province-wise differences, communities with average higher level of women education were about 12 times more likely to use ANC. In contrast to PDHS report, urban location was not a predictor for ANC. Furthermore, ANC utilization was more in developed communities.

Conclusion: This study highlights conspicuous differences across provinces and points to diminishing urban rural gap in service utilization. Furthermore, it delineates critical environmental factors for improving utilization of ANC such as average women education and community development. BC and KPK seem more enclave provinces compared to other three provinces of Pakistan. Therefore, area specific strategies should be developed to increase uptake of maternal service utilization

Keywords: antenatal care, multilevel analysis, Pakistan

13.59

CLINICAL PROFILES AND OUTCOME OF PATIENTS PRESENTING TO THE EMERGENCY DEPARTMENT WITH HEAT-RELATED ILLNESS - A SINGLE CENTER CROSS-SECTIONAL STUDY

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Background: Heat-related illness is a common feature during the summers. Karachi, the largest

metropolitan city of Pakistan suffered from high ambient temperatures in June 2015 causing increased morbidity and mortality. The aim of this study is to analyze the clinical profiles and outcome of patients with heat related illness who presented to the emergency department during the Karachi Heat Wave Catastrophe.

Methods: We conducted a cross sectional study from 17 to 22 June 2015 at the emergency department of Aga Khan University hospital. Data on demographics, co-morbid illness, clinical presentation symptoms, laboratory and clinical outcomes were collected. Outcome data studied included mortality and Length of hospital stay. *Results:* A total of 401 patients were enrolled in our study during the heat wave days. 203 (50) were males followed by females 198 (49). The majority of our patients were 70 years and plus 103 (26) with a mean of 52+25. Only 65(16) of our patients have diabetes followed by heart disease in 19 (4.7). Fever was the predominant presenting symptom in 278 (69) of our patients. 50 (12) of our patients were intubated at presentation to the emergency department. 215 (54) of our patients were admitted with 174 (43) in ward followed by ICU 24(6). 50(12) of our patients were either dead at presentation or suffered death during in hospital admission. Mean length of stay was 2+3.

Conclusion: Heat related illnesses causing significant morbidity and mortality that portends the need for preventive measures to prevent such catastrophe.

Keywords: Heat related illness, mortality in heat related illness, Emergency

13.60 PROMISING BIOMARKERS OF ENVIRONMENTAL ENTEROPATHY AND GROWTH FALTERING IN CHILDREN IN A RURAL DISTRICT OF PAKISTAN

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Background: Environmental Enteropathy (EE) is a multifactorial process in children triggered by repeated clinical and subclinical episodes of diarrhea, inadequate sanitation and ingestion of faecally contaminated water. It is characterized by chronic inflammation, villous blunting, increased enteric permeability and lymphocytic infiltration of the small bowel lamina propria. Children in resource-limited settings often remain undetected as no biomarker is available per se for early identification of EE.

Methods: A total of 380 children at birth were enrolled in a prospective cohort study in a rural district of Pakistan. Blood samples were collected at 6 and 9 months of age and tested for C-reactive protein (CRP) and ferritin by turbidometric assay on Hitachi analyzer. Linear mixed effects models were used to determine the associations of biomarkers with growth faltering. ROC analysis was performed to determine cut-offs of biomarkers providing optimum sensitivity (80%) and corresponding maximum specificity to predict growth faltering. *Results:* Our results showed that higher levels of circulating ferritin were significantly associated with growth faltering [HAZ change/year comparing highest to lowest quartiles for 6-month ferritin: -0.89, 95% CI: -0.67 to -1.11, P-trend<0.001; 9-month: -0.75 (-0.51 to -1.00), P-trend<0.001]. Almost similar associations were observed for CRP [6-month: -0.28 (-0.04 to -0.53), P-trend=0.14; 9-month: -0.48 (-0.23 to -

0.73), P-trend<0.001]. In ROC analyses, the quantitative cut-offs for ferritin were >19.55 ng/ml and >10.76 ng/ml at 6 and 9 months and had sensitivity and specificity of ~81% and ~50% respectively to predict growth faltering between two groups of <-1 vs. >0 HAZ at 18 month. The cut-offs for CRP were 0.4 and 1.0 mg/L at 6 and 9 months with sensitivity and specificity of ~81% and ~35%.

Conclusions: Our data suggests that high levels of ferritin and CRP during early life may be associated with significant declines in HAZ from birth to 18 months. These findings inform the need to study these biomarkers as indicators of EE with potential preventive and therapeutic targets

Keywords: Environmental Enteropathy, Biomarker, Stunting

13.61

A RELATIONSHIP BETWEEN DOMESTIC CHORES AND LEVELS OF ACHIEVEMENT AMONG 8TH GRADE FEMALE STUDENTS IN PAKISTAN

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Drop out of students from schools due to the lack of family support and more work pressures at home to help their mothers have been cited in literature scarcely. This study was designed to explore the relationship between academic performance of 8th grade female students in age 12 to 16 years and their involvement in domestic chores. The hypothesis was that a negative correlation exists between number of hours spent on domestic chores and level of academic achievement. A research instrument containing 23 questions was developed and validated. Data

from 150 students of Public Schools in Lahore was collected. Descriptive statistics cross tabulation, histogram and Spearman Brown Rho correlation coefficient methods were applied to understand the relationship between domestic chores and level of achievement using SPSS V: 13. The results indicated that increase in time spent on domestic works decreased the level of achievement of students ($p=0.05$). The correlation (-0.209) between working hours and academic achievement was moderate. The relationship between 10 specific domestic chores performed and academic achievement was somewhat weaker (-0.167) but was at a significant level ($p=0.05$). The inconsistency in considering domestic chores as a duty (48%) and should be a duty (70%), reflected the opinion of the parents frequently conveyed to them and not the actual opinion of the respondents. The results confirmed the hypothesis. The lack of family support has a significant affect on the education of female child. Parents and guardians must take care of the fragile concept of education if their children are to succeed at school.

Keywords: Female students, Domestic Chores, Achievement

Renal/Urology

14.1 NEUTROPHIL GELATINASE-ASSOCIATED LIPOCALIN (NGAL): AN EMERGING BIOMARKER FOR ACUTE KIDNEY INJURY

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Introduction/Objectives: In current clinical practice serum creatinine is the commonly used marker for diagnosis of acute kidney injury (AKI). Unfortunately due to delayed increase in serum creatinine, it is unable to accurately estimate timing of injury. The purpose of this study was to assess the ability of plasma Neutrophil Gelatinase-Associated Lipocalin (NGAL) to predict AKI in critically ill adult patients. *Methods and Materials:* This cross sectional study was done at Section of Chemical Pathology, Department of Pathology and Laboratory Medicine at Aga Khan University Hospital Karachi, from December 2014-August 2015. Subjects from intensive care unit (ICU) diagnosed with sepsis were included in study after written informed consent. Blood samples were collected on day one of ICU admission (within 12 hours) then at 24 and 48 hours. Plasma NGAL was analyzed using a kit from Triage, and NGAL cutoff of >150ng/ml was used to identify AKI. The primary outcome measure was occurrence of AKI as per Risk-Injury-Failure (RIFLE; based on >0.3mg/dl rise in Creatinine in 48 hours) criteria on 48 hrs of ICU stay.

Results: The mean age of patients (n=33) was 43.9±15.7 years, 72.7% were males. Duration of hospital stay ranged from 2 to 36 days (mean 10.3±8.96 days). Mean serum creatinine were 0.96±0.3mg/dl, 1.22±0.46mg/dl, and 1.38±0.61mg/dl and NGAL was

269.91±190.5ng/ml, 451±290ng/ml and 670.27±337.52ng/ml at 12, 24 and 48 hrs postadmission respectively. Based on RIFLE criteria 79% developed AKI at 48hrs of ICU admission. Of them NGAL was able to correctly identify 52%, 70% and 100% after 12, 24 and 48 hrs respectively. On ROC analysis, plasma NGAL (>150ng/ml) at 24 hrs for diagnosing AKI showed AUC 0.6, with sensitivity and specificity of 65% and 45% respectively. *Conclusion:* Results shows that pNGAL is earlier predictor of AKI in a heterogeneous adult ICU population, in which the timing of renal insult is largely unknown. It allows the diagnosis of AKI up to 48 h prior to a clinical diagnosis based on RIFLE criteria for AKI. Early identification of high risk patients may allow potentially beneficial therapies to be initiated early in the disease process before irreversible injury occurs. **Key Words:** Acute kidney injury, plasma neutrophil gelatinase associated lipocalin, sepsis, intensive care unit

Keywords: NGAL, Acute kidney injury, Early marker

14.2 EVALUATION OF 'CKD-EPI PAKISTAN' EQUATION FOR ESTIMATED GLOMERULAR FILTRATION RATE (EGFR): A COMPARISON OF PREDICTION EQUATIONS

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Background: To facilitate prompt detection of chronic kidney disease, many organizations now recommend reflex reporting of estimated

glomerular filtration rate (eGFR) whenever serum creatinine (Cr) is measured.

Objective: To compare CKD-EPI Pakistan equation, Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) equation, Cockcroft Gault (CG) and 4-variable Modification of Diet in Renal Disease (MDRD) formulae with creatinine clearance (CrCl) calculated through a timed urine collection. *Methods:* Laboratory data of subjects ≥ 18 years ordering 24 hour urinary CrCl from June to October 2013 was retrieved. Statistically comparison of eGFR using CKD-EPI, CKD-EPI Pak, CG and MDRD with the timed urine collection CrCl was done using regression analysis.

Results: Mean age of the group (n=670) was 51.3 ± 15.4 years, 55.7 % being males. Mean BMI of males and females was 27.8 ± 13 kg/m² and 27.6 ± 5.8 kg/m² respectively. Mean GFR using 24 hour creatinine clearance was 57.1 ± 35.9 ml/min/1.73m². Urinary creatinine clearance showed strong correlation with CG, MDRD, CKD-EPI and CKD-EPI Pak $r=0.7$, $r=0.7$, $r=0.82$, and $r=0.83$ respectively. Sensitivity was highest for the CKD-EPI Pakistan (84.7%). Similarly CKD-EPI Pakistan equation showed the highest agreement (88.7%) with CrCl compared to the other formulae.

Conclusion: The CKD-EPI Pak equation is more accurate and precise than the CG, CKD-EPI and MDRD in estimating GFR in Pakistani population.

Keywords: GFR, creatinine, CKD-EPI

14.3

CLINICAL MIMICRY:FABRY DISEASE MASQUERADING AS LUPUS?

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Case: A 42-year-old gentleman presented with recent onset hypertension, low grade fever and reduced appetite with some degree of weight loss. He has had unilateral hearing loss since childhood. On examination, we found multiple small reddish, tiny, discrete papules around periumbilical area, which according to him had been present since birth. Investigations revealed serum creatinine of 1.1mg/dl and 2.4grams of proteinuria. He had positive antinuclear antibodies and serological test results consistent with possible systemic lupus erythematosus (SLE). Kidney biopsy showed profoundly enlarged finely vacuolated podocytes, endothelial and mesangial cells with mesangial proliferation on light microscopy suggestive of Fabry's disease (FD). Immunofluorescence was full house positive. Echocardiogram findings were consistent with HYPERTROPHIC OBSTRUCTIVE CARDIOMYOPATHY. The patient had been followed up for almost five years so far and his kidney function has been fairly stable with persistent non-nephrotic range proteinuria. Interestingly, he has never received any immunosuppressive therapy and he had not developed any extra renal manifestations of SLE.

Conclusion: There are very few cases of coexisting SLE and FD reported in the literature. However, there is a high prevalence (57%) of autoimmune markers in patients with FD. The pathophysiological mechanism underlying the development of autoantibodies could be explained, at least in part, by the suggestion that immunogenic galactocerebrosides accumulating in FD represent a continuous stimulus inducing the immune system.

14.4 PARTIAL INTESTINAL OBSTRUCTION SECONDARY TO ADULT POLYCYSTIC KIDNEY DISEASE -- A CASE REPORT

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Introduction: Adult polycystic kidney disease (ADPKD) is a common inherited disorder which can cause an irreversible decline in kidney function. Its inheritance is autosomal dominant with a prevalence of 1 in 400-1000 live births. It is usually asymptomatic, but it may become clinically evident with renal or extra-renal manifestations. Here, we narrate a case who presented with partial intestinal obstruction due to compression of the bowel loops by the enlarged kidneys, a complication that is rarely described in literature.

Case: A 78 year old male, diagnosed case of ADPKD presented to clinic with one week history of abdominal distension and progressive constipation. His baseline creatinine was around 2.2-2.6. His abdomen was distended, non-tender, and tympanic and bowel sounds were sluggish. Initial lab workup showed static renal function, leukocytosis with a CRP of 9.9. Abdominal x-ray showed dilated small and large bowel loops without evidence of pneumoperitoneum. Intestinal obstruction was suspected and a rectal catheter and a nasogastric tube were passed. Both the tubes were removed once his condition improved but soon he again started having abdominal distension. CT scan was done which showed grossly enlarged kidneys with complete replacement of renal parenchyma by hypodense, well-defined cysts of variable sizes. Kidneys were occupying almost the entire abdomen pushing the bowel loops anteriorly compressing the small bowel loops. There was no evidence of cyst hemorrhage or infection. Partial intestinal obstruction secondary to ADPKD was diagnosed and Nephrectomy was planned but since the patient had other comorbid conditions, he was not fit for general anesthesia. Surgery was deferred and conservative management was continued.

Conclusion: Intestinal obstruction is a rare complication of ADPKD and should always be kept in differential diagnosis in ADPKD patients presenting with persistent constipation.

Respiratory Diseases

15.1

COMPARISON OF ACID FAST SMEAR AND GENOTYPE MTBDRPLUS LINE PROBE ASSAY FOR RAPID DIAGNOSIS OF TUBERCULOUS PLEURAL EFFUSION

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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 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 and MTBDRplus.

Results: We enrolled 135 patients with suspected TPE with mean age of 49.58±20.41 years. 38 (25.9%) had a history of TB contact. Effusion size was mild in 46 (34%), moderate in 76 (56%) and massive in 13 (9%) patients. Pleural fluid AFB smear was positive in 5 (3.7%) cases and MTBDRplus was positive in 8 (5.92%) cases. AFB culture was positive in 13 (9.6%) cases. Considering AFB culture as gold standard, sensitivity of MTBDRplus was significantly higher in comparison with AFB smear [38.46% (95% CI: 15.13-67.72%) vs.

15.38 (95% CI: 1.92-45.45%) p= 0.004]. There was no significant difference in specificity [97.54% (95% CI: 92.44-99.36%) vs. 97.54 (95% CI: 92.98-99.49%) 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

15.2

RANDOMIZED TRIAL OF AMOXICILLIN VERSUS PLACEBO FOR FAST BREATHING PNEUMONIA (RETAPP)

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Background: Current guidelines recommend antibiotic therapy for all children with fast breathing pneumonia in resource limited settings, presuming that most pneumonia is bacterial. High quality clinical trial evidence to challenge or support the continued use of antibiotics, as recommended by the WHO is lacking. Therefore a randomized controlled trial is being conducted to evaluate the non-inferiority of placebo with standard antibiotic treatment in a representative population in Karachi, Pakistan.

Methods and materials: This is a randomized double blinded placebo-controlled non-inferiority trial using parallel assignment with 1:1 allocation ratio, being conducted at primary healthcare centres located in two low income

squatter settlements of Karachi. Children aged 2-59 months with WHO defined fast breathing pneumonia without any danger signs are being randomized to receive either 3 days of oral Amoxicillin (standard) or matching placebo (control), 1215 children will be enrolled in each arm. Primary outcome is the difference in cumulative treatment failure between the two groups, defined as a new clinical sign based on preset definitions indicating illness progression or mortality on day 0, 1, 2 or 3 of therapy. Nasopharyngeal swabs are collected for pneumococcal and viral carriage.

Results: In 12 months of trial period from September 2014 till August 2015, total children seen at triage are 19,363. Of these children coming to primary health centre 11,161 (58%) presented with cough or difficulty in breathing and considered eligible. Out of these eligible children, only 2,216 (20%) met the inclusion criteria i.e. have history of cough for less than two weeks and fast breathing. About 40% of all fast breathing under 5 years occurs in babies 2-11 months of age. Of these children with fast breathing, 1056 children have been enrolled so far. Our blinded placebo trial, so far, shows low failure rate of 3% with study drug. Further recruitment is to be continued

Conclusion: The trial results will strengthen the evidence base to re-consider the WHO guidelines for management of pneumonia with prudent use of antibiotics. Findings will be generalizable to resource limited settings with low HIV prevalence and malaria endemic countries with Hib and Pneumococcal vaccines in their national immunization plan.

Keywords: Fast breathing pneumonia, Amoxicillin, Infant

15.3

SEASONAL DRIVERS OF WHO DEFINED FAST BREATHING PNEUMONIA- IMPACT OF VIRAL ACTIVITY IN THE NASOPHARYNGEAL NICHE

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Background: The association between nasopharyngeal carriage of viruses and mild to moderate lower respiratory tract infections is poorly understood. We explore this association in an ongoing trial of fast breathing pneumonia with an objective to estimate the proportions of viral carriage in children with fast breathing pneumonia

Methods: The study is being conducted in two primary health care centers in low income peri-urban communities located in Karachi, Pakistan. Children 2 to 59 months old identified to have cough and tachypnea as defined by WHO without danger signs and other illness like T.B., asthma, enteric illness are included. Viral carriage is assessed by taking nasopharyngeal swabs and are analyzed using LUMINEX xTAG Respiratory Viral Panel assay. The data has been collected for the period from September 2014 to August 2015

Results: About 20% of children in our community, who presented with respiratory symptoms at primary health center, have fast breathing. From these 2126 fast breathing children, 1055 children are enrolled, nasopharyngeal results are available on 712 children. Rhinovirus was detected in 49% of the children, followed by Respiratory Syncytial Virus (RSV) in 6%, Human Metapneumovirus in 5%, with Human Bocavirus and Adenovirus in 3% of the cases. Subtypes of ParaInfluenza type III was detected in 7%, type IV in 5%, type

I in 3% and type II in 1%, while Influenza was found in 2% of the cases. The subtypes of Coronavirus and Influenza subtypes were detected in less than or equal 2% of the cases. The peak of Rhinovirus is found to be corresponding with increased presentation of cough and difficulty breathing in the months of October and January suggests a positive epidemiological association. The peak of RSV in late summer (August to October) corresponds to increased episodes of fast breathing pneumonia suggests them to have important role in pathogenesis of the disease. Rising trends of Human Metapneumovirus can be seen during early summer i.e. from March with peak in May. The peak of parainfluenza III coincides with increased episodes of tachypnea during January and February and Parainfluenza IV during December march and May which seems to follow conventional seasonality pattern

Conclusion: The variation and pattern in detection of virus among children is corresponding with symptoms of fast breathing pneumonia. This makes a case for exploring the role of antibiotics as prescribed by WHO among children with fast breathing pneumonia and conducting association studies over longer periods of time with carriage rates in controls.

Keywords: fast breathing pneumonia, nasopharyngeal colonization, children under five

15.4 UTILIZATION OF THE CLINICAL RESPIRATORY SCORE FOR PREDICTING OUTCOMES IN CHILDREN WITH RESPIRATORY DISTRESS PRESENTING TO THE EMERGENCY DEPARTMENT: A PROSPECTIVE OBSERVATIONAL STUDY

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Introduction: Respiratory distress is a common presenting complaint in children brought to the ED. It is important to recognise severity of illness using an appropriate tool, so that patients can be stabilized and dispositioned promptly. *Objective:* To determine effectiveness of the Clinical Respiratory Score (CRS) in predicting clinical outcomes in children presenting with respiratory distress to the ED.

Methods: We conducted an observational study in children (1 month to 16 years) with respiratory distress presenting to the ED of the Aga Khan University, Karachi, from November 2015 to March 2016. We assessed severity of illness using the CRS, an easy to use, quick tool that takes into account parameters such as respiratory rate and auscultatory findings. The CRS was measured at initial presentation, prior to any standard of care management. Associations between CRS and clinical outcomes were explored.

Results: A total of 112 children were enrolled; median age 12 months, 70% male. Commonest provisional diagnoses were pneumonia (30%), bronchiolitis (21%) and asthma (17%). Almost third of the children were admitted to intensive care. Patients with severe CRS were more likely to be admitted to intensive care (61% vs.21%

with mild-moderate CRS; OR: 5.7; 95% CI: 2.2-15.3, $p < 0.001$).

Conclusion: The CRS is beneficial for prediction of clinical disposition in children with respiratory distress, and utilizing it in evidence-based ED protocols is a logical next step.

Keywords: CRS, Respiratory Distress, pneumonia

15.5

ASSOCIATION BETWEEN DIFFERENT CHARACTERISTICS OF PATIENT WITH AIR TRAPPING ON BODY PLETHYSMOGRAPHY

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Introduction: Air trapping is an abnormal retention of air in the lungs where it is difficult to exhale completely. Air trapping can be measured by lung volume study and imaging. Increase in air trapping results in greater degree of dyspnea. It has also been used to determine the response to therapy. This study aims to find factors associated with the air trapping.

Method: All the patients who underwent lung volumes by bodyplethysmography in the last 3 years 01/2013 to 12/2015 at AKUH is collected and analyzed retrospectively. Different characteristics of the patient like age, gender, smoking status and BMI and air trapping. RV/TLC ratio measured by bodyplethysmography is used to determine the presence of air trapping. The patients with ratio greater than 120% labeled to have air trapping. All of the variables i.e Independent (age, gender, smoking and body mass index) and Dependent

i.e. air trapping were recorded in a nominal data. Age was recorded as ≤ 40 and > 40 and BMI ≤ 25 and > 25 .

Results: Data of 279 patients was recorded. 2x2 frequency tables were generated for each variable i.e. age, gender; smoking and BMI. Chi square applied. P value < 0.05 is taken as significant. The results showed that p value for age 0.9, smoking 0.3, BMI 0.6 and gender 0.7 were identified.

Conclusion: It showed that age, gender, smoking and BMI is not significantly correlated with the air trapping. Further studies are required to find the factors associated with the air trapping.

Keywords: Airtraping, Bodyplethysmography, BMI(Body mass index)

15.6

CLINICAL CHARACTERISTICS OF PATIENTS WITH IDIOPATHIC PULMONARY FIBROSIS IN A TERTIARY CARE CENTER OF A DEVELOPING COUNTRY

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Background: Idiopathic pulmonary fibrosis (IPF) is a specific form of chronic progressive fibrosing interstitial pneumonia of unknown cause. It is common in adults and carries a poor prognosis. Very limited data is available from South East Asia on IPF.

Objectives: To determine the clinical features and management of IPF in at tertiary care center of Pakistan *Methods:* This is a retrospective study conducted at Aga Khan University Hospital Karachi Pakistan from January 2005 till

December 2015 .All patients with the diagnosis of IPF on the basis of clinical, radiological features on HRCT and lung biopsy (where available) were included. The information regarding demographic variables, clinical presentation, and spirometry were recorded on preformed performa.

Results: 217 patients with diagnosed IPF were reviewed. 50.7% were males with a man age of 67±12 years. 192 (88%) were presented with cough and dyspnea as presenting symptoms.47 (21%) patients had diabetes and 39 (17%) were hypertensive.115(52%) were smoker.11(6%) patients were presented with subacute symptoms . 38 (17.5%) patients had clubbing.15(6.9%) were with COPD. On spirometry almost all had restrictive pattern. PAH is identified in 56 (25%) of patients. HRCT showed basilar involvement in almost all patients . Before 2012 137(63%) patients were on steroids and immunosuppressants. 35% (n=77) patients are on pirfenidone since its available in 2012.

Summary: This is the first largest study on IPF at tertiary care centre in Pakistan that describes the clinical features, presentation and management of IPF.Further multicentre studies are required for further understanding and enhancing knowledge of the disease.

Keywords: IPF Idiopathic Pulmonary Fibrosis, ILD Interstitial Lung Diseases, Pirfenidone

15.7

ASSESSMENT OF DIABETES AMONGST TUBERCULOSIS PATIENTS PRESENTING AT A TERTIARY CARE FACILITY IN PAKISTAN

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Background: Pakistan ranks 6th amongst high tuberculosis burden countries worldwide and ranks 5th worldwide for diabetes (DM) incidence. Although both these factors are independently known, the rate of diabetes amongst TB patients is not well known. We aimed to determine the prevalence of diabetes amongst patients with TB presenting at tertiary care health centers in Karachi, Pakistan.

Methods: A total of 216 patients with TB were recruited and their blood samples taken for testing of glycosylated hemoglobin (HbA1c) and random blood sugar (RBS). Diabetes was defined as; HbA1c > 6.5 %, RBS > 180 mg/dl; Pre-diabetes as HbA1c, 5.7-6.4 % and Normoglycemic as HbA1c and Normoglycemic as HbA1c <5.7 %.

Results: Data for 211 patients was available and showed that, 24 (11.4%) had diabetes. Of these, 17 were newly diagnosed while 7 were known diabetics. Pre-diabetes was identified in 45 (21.3%) cases.

Of the TB patients, 165 were newly diagnosed whilst 46 were re-treatment cases. The majority of patients (60%) were underweight with a BMI less than 18.5.

Conclusions: This study identified 11.4% diabetics amongst TB patients presenting to a tertiary care facility. Despite the high DM incidence in Pakistan, 71% of the diabetics in the group studied did not know their status. Given the negative impact of diabetes on

treatment outcomes in TB, it is important that screening for diabetes be included as initial work up for TB patients. Identification and management of diabetes would result in improved outcomes for TB treatment.

Keywords: tuberculosis, diabetes, co-morbidity

15.8

RAPID DIAGNOSIS OF PULMONARY TUBERCULOSIS IN CHILDREN BY XPRT MTB/RIF TESTING OF GASTRIC ASPIRATE AND STOOL SAMPLES

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Background: Childhood tuberculosis (TB) is largely paucibacillary disease and difficult to diagnose. TB incidence in Pakistan is 231/100,000 but young children remain under-diagnosed as they do not produce sputum and it is difficult to get specimens to test pulmonary TB. Gastric aspirate based testing for Mycobacterium tuberculosis (Mtb) is recommended but the method is only conducted at tertiary care facilities and culture takes weeks. There is a need to improve MTB testing in childhood TB and to reduce delay in diagnosis and management of the disease.

Method: We recruited children suspected of pulmonary TB with a TB score (Kenneth-Jones score) of ≥ 5 . Patients were recruited from the Pediatric Department of AKUH and CHK, DUHS. Gastric aspirate and stool samples were collected prior to anti-tuberculous treatment (ATT). Gastric aspirates were tested using the Xpert MTB/RIF assay and by Mycobacterium tuberculosis (MTB) culture whilst stool samples were tested by Xpert MTB/RIF. Fifty children met the required criteria for our study.

Results: A total of 27 male and 23 female children were recruited into the study. They had a mean age of 6 years and a mean TB (KJ) score of 7. Stool samples from 50 children suspected of pulmonary TB were tested by Gene Xpert MTB/RIF assay. Results were compared with gastric aspirate (GA) Xpert and culture. Ten TB cases were identified by Xpert Stool testing and 11 by Xpert GA testing. Against the composite reference standard (CRS), Xpert in stool had a sensitivity of 62.5% (95% CI= 35.9 – 83.7), specificity of 100% (86.7 – 100), PPV of 100% (95% CI = 65.5 – 100) and NPV of 84.2% (95% CI = 68.1 – 93.4). Stool testing can be suitable for TB diagnosis in a resource poor setting.

Conclusions: We have shown the value of using stool as a specimen alternate to gastric aspirate for testing by Xpert MTB/RIF assay in children who are below 5 years of age. In a resource poor endemic setting testing stool sample as an alternate to gastric aspirate may be valuable due to the limited facilities available. Therefore, stool provides an easy sample for testing for pulmonary TB in young children

Keywords: tuberculosis, pediatric, Xpert MTB/RIF assay

15.9

CORRELATING GYRA/B MUTATIONS OF MYCOBACTERIUM TUBERCULOSIS ISOLATES WITH MINIMUM INHIBITORY CONCENTRATIONS OF OFLOXACIN

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Objective: This study aimed to correlate gyrA and gyrB gene mutations with Minimum Inhibitory Concentrations (MICs) of ofloxacin (OFX) in Mycobacterium tuberculosis (MTB) isolates.

Methods: MICs of OFX were determined for 50 MTB isolates using resazurin microtiter assay (REMA). These isolates were characterized as OFX resistant (n=28) and OFX susceptible (n=22) by phenotypic testing at 2µg/mL cutoff level. The presence of mutations in Quinolone resistance determining region (QRDR) of *gyrA* and *gyrB* genes of 319 and 412 bp, respectively, was determined by PCR based sequencing method. Sequencing results were analyzed by BLAST on NCBI with H37Rv MTB reference strain. Type of *gyrA* and *gyrB* mutations was compared with MIC determined for OFX by REMA assay. The possible association of *gyrA/B* mutations and MIC level for OFX was analyzed by Chi-square test using the Statistical Package for Social Sciences software (SPSS Inc., Chicago, IL, USA).

Results: Mutations were observed in the *gyrA* gene of 64% (18/28) OFX resistant MTB isolates. Frequency of mutations were 18% (n=5), 3.5% (n=1) and 43% (n=12) on codons 90, 91 and 94 respectively. Although isolates with mutation on codon 94 showed increased MICs (4-8µg/mL) of OFX as compared to the isolates with mutation on other codons, however it was statistically insignificant (p-value=0.243). One isolate with double mutation on codons 90 and 91 also showed higher MICs for OFX. None of the OFX resistant isolates exhibited mutation in *gyrB* gene. Mutations were not observed in *gyrA* and *gyrB* gene in all the OFX susceptible MTB isolates.

Conclusions Findings: of this study supports association of mutation in *gyrA* gene with OFX resistance among MTB isolates, however, it does not signify association between type of *gyrA* mutation and MIC level of OFX.

Keywords: M. tuberculosis, *gyrA* gene, ofloxacin

15.10 POTENTIAL OF BLACK PEPPER: FROM FOOD OF CHOICE TO REMEDY OF CHOICE FOR AIRWAY DISORDERS

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Objective: Black pepper (*Piper nigrum*), a popular spice, is medicinally used in airway disorders. This study determines efficacy and explores the pharmacological basis for the folkloric medicinal use of black pepper in airways disorders, using in vivo and in vitro assays.

Methods: The in-vivo experiments were conducted in anaesthetized rats for the assessment of bronchodilator activity. Isolated tissue preparations of guinea-pig trachea were used for further studying the possible mode of action using isometric transducers coupled with PowerLab data acquisition system. **Results:** HPLC fingerprint analysis of the crude extract of *Piper nigrum* (Pn.Cr) and its fractions showed piperine, piperidine, eugenol and catechin as plant constituents. In anesthetized rats, Pn.Cr and piperine relieved carbachol (CCh)-induced bronchospasm. In isolated guinea-pig trachea, Pn.Cr and piperine inhibited CCh and K⁺ (80 mM)-induced contractions, potentiated isoprenaline concentration-response curves (CRCs) and suppressed Ca²⁺ CRCs. In guinea-pig atria, Pn.Cr and piperine showed stimulatory and inhibitory effects on rate and force of contraction. Its fractions showed similar activities with varied potency in the in vivo and in vitro assays.

Conclusion: These results suggest that black pepper possesses bronchodilator effect, putatively mediated through dual inhibition of phosphodiesterase enzyme and Ca²⁺ influx, which may substantiate its potential as a functional food for airway disorders. Interestingly, the crude extract was as potent as piperine, the main active principal, indicating a significant contribution of other constituents and/or presence of synergistic interaction amongst different chemical constituents in pepper.

Keywords: Piper nigrum, Bronchodilator, Phosphodiesterase inhibitor

15.11

SPECTRUM AND SUSCEPTIBILITY PATTERN OF NON-TUBERCULOUS MYCOBACTERIAL INFECTIONS IN PAKISTAN: 2012-2015

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Background: Roll-out of anti-tuberculous drugs and Xpert MTB/RIF across Pakistan is showing an increase in non-tuberculous mycobacterial (NTM) disease, as evidenced by rising isolation rates at the Aga Khan University Clinical Laboratories, Karachi, Pakistan. We describe here the risk factors and characteristics of patients with NTM disease, their spectrum and susceptibility pattern.

Methods: From Jan2012-Nov2015, 323 samples yielded NTM on routine bacterial and mycobacterial cultures (pulmonary:300 and

extra-pulmonary:23), identified by growth rate, pigment production and selected biochemical tests. Susceptibilities to clarithromycin, moxifloxacin, linezolid, imipenem and amikacin were tested by broth microdilution as recommended by CLSI (M24-A2, 2012). Information on underlying lung disease, history of tuberculosis, surgery and trauma were compiled from clinical records.

Results: Of the 300 pulmonary isolates, 116 were nonchromogenic slow-growers (106 *M. avium-intracellulare* complex), 46 photochromogens, 3 scotochromogens, 95 rapidly-growing mycobacteria (RGM) and 40 NTM, not further identified. Of these patients, male:female ratio was 1.5, 78.6% were adults and 17.6% were elderly. Amongst those whose status was known, underlying lung disease was present in 26% (28/108), and 60.7% (91/150) had prior history of TB and history of anti-tuberculous therapy. There were 23 cases of extra-pulmonary NTM: 12 RGM, 3 slow-growers and 8 unclassified. For all NTMs tested, susceptibility to amikacin was 100%, clarithromycin 88%, linezolid 89%, moxifloxacin 52% and imipenem 19%.

Conclusion: Spectrum of pulmonary and extrapulmonary NTM disease is different: *M. avium-intracellulare* complex dominating in pulmonary while RGM in extra-pulmonary infections. Our susceptibility results identify clarithromycin, amikacin and linezolid as empiric options for NTM disease.

Keywords: Non-tuberculous Mycobacteria, Clarithromycin, Amikacin

15.12

DIAGNOSTIC PERFORMANCE OF GENEXPERT (XPRT® MTB/RIF) IN BRONCHOALVEOLAR LAVAGE FOR DIAGNOSIS OF PULMONARY TUBERCULOSIS

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Background: Tuberculosis (TB) remains one of the leading infectious causes of morbidity and mortality worldwide. According to the World Health Organization (WHO) global TB report 2013, there were 8.6 million incident cases of TB with an estimated mortality of 1.3 million. Its diagnosis relies on sputum smear whose sensitivity is low and sputum culture for AFB, which is time consuming. Hence in the past decade, diagnostic techniques based on nucleic acid amplification have been developed. This study was done to see the diagnostic accuracy of Xpert MTB/Rif in Bronchoalveolar lavage samples in our population.

Method: It was retrospective study. All patients who underwent bronchoscopy for evaluation of tuberculosis in pulmonary section of Aga Khan University hospital, Karachi from June 2014 to Dec 2015 were included. There files were reviewed after ethical approval. Total 480 files were reviewed and 88 patients met our inclusion criteria. Patient who were already on TB treatment were excluded. Data was entered into SPSS version 22. Sensitivity and specificity of Xpert MTB/Rif with culture as reference method was determined.

Results: Out of 480 reviewed files, total 88 patients had confirmed pulmonary TB on cultures. 67% were male with a mean age of 38 ± 18 years. Only 25% had known history of TB contact. 26% were diabetic. Most common presenting complaints were fever (78%) and

cough (64%). Mean duration of symptoms were 3 ± 1.5 months. Common chest x-rays findings were infiltrates (88%), cavitations (13%), and miliary pattern (7%). 3 patients had MDR TB on culture and 1 patient had XDR TB, that was sensitive to ethionamide only. AFB smear was positive in 57 (64%) patients Sensitivity 67% (95% CI 55%-77%) and Specificity 48% (95% CI 21%-73%). Xpert MTB/Rif was positive in 64 (73%) patients Sensitivity 86% (95% CI 76%-93%) and Specificity 93% (95% CI). All patient who showed rif resistance on Gene Xpert, also showed resistance of rifampin on culture. Only one specimen showed discrepancy in rifampin resistance. Sensitivity of Xpert MTB/Rif for Rifampin resistance detection assay was 98% and Specificity was 99.9%

Conclusion: Xpert MTB/Rif detected TB cases more accurately and rapidly in BAL than smear with early detection of MDR TB. The use of Xpert MTB/Rif in BAL for TB diagnosis will lead to early and appropriate treatment of such cases in our setting.

Keywords: Tuberculosis, Xpert MTB/Rif, MDR TB

15.13

BEHAVIOUR CHANGE INTERVENTION FOR SMOKELESS TOBACCO CESSATION IN SOUTH ASIANS (BISCA): ITS DEVELOPMENT, FEASIBILITY AND FIDELITY TESTING IN PAKISTAN AND IN THE UK

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Background: People of South Asian-origin are responsible for more than three-quarters of all the smokeless tobacco (SLT) consumption worldwide; yet there is little evidence on the effect of SLT cessation interventions in this population. South Asians use highly addictive and hazardous SLT products that have a strong socio-cultural dimension. We designed a bespoke behaviour change intervention (BCI) to support South Asians in quitting SLT and then evaluated its feasibility in Pakistan and in the UK.

Methods: We conducted two literature reviews to identify determinants of SLT use among South Asians and behaviour change techniques (BCTs) likely to modify these, respectively. Iterative consensus development workshops helped in selecting potent BCTs for BCI and designing activities and materials to deliver these. We piloted the BCI in 32 SLT users. All BCI sessions were audiotaped and analysed for adherence to intervention content and the quality of interaction (fidelity index). In-depth interviews with 16 participants and five advisors assessed acceptability and feasibility of delivering BCI, respectively. Quit success was assessed at six months by saliva/urine cotinine.

Results: The BCI included 23 activities and an interactive pictorial resource that supported these. Activities included raising awareness of the harms of SLT use and benefits of quitting, boosting clients' motivation and self-efficacy, and developing strategies to manage their triggers, withdrawal symptoms, and relapse should that occur. Betel quid and Guthka were the common forms of SLT used. Pakistani clients were more SLT dependent than those in the UK. Out of 32, four participants had undetectable cotinine at six months. Fidelity scores for each site varied between 11.2 and 42.6 for adherence to content – max score achievable 44; and between 1.4 and 14 for the quality of interaction - max score achievable was

14. Interviews with advisors highlighted the need for additional training on BCTs, integrating nicotine replacement and reducing duration of pre-quit session. Clients were receptive to health messages but most reported SLT reduction rather than complete cessation.

Conclusion: We developed a theory-based BCI that was also acceptable and feasible to deliver with moderate fidelity scores. It now needs to be evaluated in an effectiveness trial.

Keywords: tobacco, smokeless, chewing, South Asian, behavioural support, behaviour change, fidelity, adaptation, cessation, feasibility

15.15

COMPARISON OF ACID FAST SMEAR AND GENOTYPE MTBDR PLUS LINE PROBE ASSAY FOR RAPID DIAGNOSIS OF TUBERCULOUS PLEURAL EFFUSION

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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 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 and MTBDRplus.

Results: We enrolled 135 patients with suspected TPE with mean age of 49.58 ± 20.41 years. 38 (25.9%) had a history of TB contact. Effusion size was mild in 46 (34%), moderate in 76 (56%) and massive in 13 (9%) patients. Pleural fluid AFB smear was positive in 5 (3.7%) cases and MTBDRplus was positive in 8 (5.92%) cases. AFB culture was positive in 13 (9.6%) cases. Considering AFB culture as gold standard, sensitivity of MTBDRplus was significantly higher in comparison with AFB smear [38.46% (95% CI: 15.13-67.72%) vs. 15.38 (95% CI: 1.92-45.45%) $p=0.004$]. There was no significant difference in specificity [97.54% (95% CI: 92.44-99.36%) vs. 97.54 (95% CI: 92.98-99.49%) $p=0.096$].

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

15.16 CLINICAL CHARACTERISTICS OF PATIENTS WITH IDIOPATHIC PULMONARY FIBROSIS IN A TERTIARY CARE CENTER OF A DEVELOPING COUNTRY

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Background: Idiopathic pulmonary fibrosis (IPF) is a specific form of chronic progressive fibrosing interstitial pneumonia of unknown cause. It is common in adults and carries a poor prognosis. Very limited data is available from South East Asia on IPF.

Objectives: To determine the clinical features and management of IPF in at tertiary care center of Pakistan

Methods: This is a retrospective study conducted at Aga Khan University Hospital Karachi Pakistan from January 2005 till December 2015. All patients with the diagnosis of IPF on the basis of clinical, radiological features on HRCT and lung biopsy (where available) were included. The information regarding demographic variables, clinical presentation, and spirometry were recorded on preformed performa.

Results: 217 patients with diagnosed IPF were reviewed. 50.7% were males with a mean age of 67 ± 12 years. 192 (88%) were presented with cough and dyspnea as presenting symptoms. 47 (21%) patients had diabetes and 39 (17%) were hypertensive. 115 (52%) were smokers. 11 (6%) patients were presented with subacute symptoms. 38 (17.5%) patients had clubbing. 15 (6.9%) were with COPD. On spirometry almost all had restrictive pattern. PAH is identified in 56 (25%) of patients. HRCT showed basilar involvement in almost all patients. Before 2012 137 (63%)

patients were on steroids and immunosuppressants. 35% (n=77) patients are on pirfenidone since its available in 2012.
Summary: This is the first largest study on IPF at tertiary care centre in Pakistan that describes the clinical features, presentation and management of IPF. Further multicentre studies are required for further understanding and enhancing knowledge of the disease.

Keywords: IPF Idiopathic pulmonary fibrosis,

15.17

ISOLATED REDUCTION IN RESIDUAL VOLUME ON BODY PLETHYSMOGRAPHY IS AN EARLY INDICATOR OF PARENCHYMAL LUNG DISEASE

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Background: Isolated reduction in residual volume (RV) on pulmonary function test (PFTs) is not less frequently observed in our population. Previous study showed that isolated reduction in RV with normal total lung capacity (TLC), diffusion lung capacity (DLCO), and normal expiratory flow rates is sometime associated with underlying lung parenchymal disease or chest wall deformity.

Objective: To evaluate the clinical significance of the isolated reduction in RV with normal VC, DLCO, expiratory flow rates and the effect of BMI on it.

Methods: This is a retrospective, observational study conducted at Aga Khan University Hospital Karachi, Pakistan. All adult patients who underwent body plethysmography for evaluation of dyspnea from 2012 to 2015 were enrolled. Medical records, body

plethysmography and chest imaging was reviewed.

Results: A total of 320 Pfts were reviewed. 20 had low residual volumes with normal TLC, DLCO and expiratory flow rates. 8 (40%) had lung parenchymal abnormality on chest imaging. 5 (25%) had diffuse parenchymal lung disease while 3 (15%) had atelectasis /mild fibrosis. No chest wall deformity was found in either case. It was observed that 17 (85%) were overweight /obese. Echo/MPS was done in 12 (60%) patients which was normal.

Conclusion: Isolated reduction in RV may be an early indicator of lung parenchymal abnormality on PFTs. Population based studies on large sample size is required for further evaluation and impact of BMI on it.

Keyword: RV residual volume,

15.18

DIAGNOSTIC PERFORMANCE OF GENEXPERT (XPRT® MTB/RIF) IN BRONCHOALVEOLAR LAVAGE FOR DIAGNOSIS OF PULMONARY TUBERCULOSIS

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Department of Medicine, Aga Khan University, Karachi*

Background: Tuberculosis (TB) remains one of the leading infectious causes of morbidity and mortality worldwide. According to the World Health Organization (WHO) global TB report 2013, there were 8.6 million incident cases of TB with an estimated mortality of 1.3 million. Its diagnosis relies on sputum smear whose sensitivity is low and sputum culture for AFB, which is time consuming. Hence in the past decade, diagnostic techniques based on nucleic acid amplification have been developed.

Objective: To evaluate the diagnostic accuracy of the Xpert MTB/Rif in bronchoalveolar lavage samples for the diagnosis of pulmonary tuberculosis.

Method: It was retrospective study. All patients who underwent bronchoscopy for evaluation of tuberculosis in pulmonary section of Aga Khan University hospital, Karachi from June 2014 to Dec 2015 were included. There files were reviewed after ethical approval. Total 480 files were reviewed and 88 patients met our inclusion criteria. Patient who were already on TB treatment were excluded. Data was entered into SPSS version 22. Sensitivity and specificity of Xpert MTB/Rif with culture as reference method was determined.

Results: Out of 480 reviewed files, total 88 patients had confirmed pulmonary TB on cultures. 67% were male with a mean age of 38 ± 18 years. Only 25% had known history of TB contact. 26% were diabetic. Most common presenting complaints were fever (78%) and cough (64%). Mean duration of symptoms were 3 ± 1.5 months. Common chest x-rays findings were infiltrates (88%), cavitations (13%), and miliary pattern (7%). AFB smear was positive in 57 (64%) patients Sensitivity 67% (95%CI 55%-77%) and Specificity 48% (95%CI 21%-73%) . Xpert MTB/Rif was positive in 64 (73%) patients Sensitivity 86% (95%CI 76%-93%) and Specificity 93% (95%CI 68%-99%) patients had MDR TB on culture and 1 patient had XDR TB. All patients who showed Rifampicin resistance on Xpert MTB/Rif also showed resistance on culture. Sensitivity of Xpert MTB/Rif for Rifampin resistance detection assay was 98% and Specificity was 99.9%.

Conclusion: Xpert MTB/Rif detected TB cases more accurately and rapidly in BAL than AFB smear with early detection of MDR TB. The use of Xpert MTB/Rif in BAL for TB diagnosis will lead to early and appropriate treatment of such cases in our setting.

Keywords: Tuberculosis, bronchoalveolar lavage, Xpert MTB/Rif, MDR TB, Pakistan

15.19

CARDIAC TAMPONADE AS THE INITIAL MANIFESTATION OF PULMONARY ADENOCARCINOMA

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Introduction: Neoplastic pericarditis can be presented as acute pericarditis, pericardial effusion, effusive constrictive pericarditis or cardiac tamponade. For the majority of patients, a clinical manifestation of neoplastic pericarditis is absent or remains unrecognised during their life.

Case: 21 years old male with no prior known comorbid, presented in the emergency department with acute onset dyspnea and palpitation and non-resolving fever for the past 15 days. He was tachycardiac and was found to be in shock and later got intubated secondary to hypoxia. Chest Xray revealed enlarged heart, Echocardiogram confirmed the diagnosis of pericardial temponade. Pericardiocentesis was done, and pericardial fluid cytology revealed malignant cells with immunohischemistry favouring aadenocarcinoma lung. CT chest showed bilateral mediastinal and hilar lymphadenopathy. He got better and discharged to be followed up in oncology clinic as an outpatient.

Conclusion: Cardiac tamponade as the initial manifestation of malignancy is rare and rare is also malignant pericardial effusion due the adenocarcinoma of the lung in a non-smoker. So malignancy should be considered in otherwise

healthy patients admitted to hospitals with the aforementioned symptoms.

15.20

PLEURAL HYDATID DISEASE PRESENTING AS RECURRENT HYDROPNEUMOTHORACES; REPORT OF A CASE

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Introduction: Hydatid disease is an important health problem worldwide, occurring mainly in the sheep and cattle raising areas. Extra-pulmonary intrathoracic hydatid disease is a rare entity. We report a case of a young man presenting with recurrent pneumothoraces who was found to have pleural echinococcosis.

Case: A 40 year old gentleman presented in the emergency room with worsening dyspnea over the last three days. He reported low grade fever and a weight loss of 3 kg in the last 40 days. He belonged to a rural area. His past history of note included asthma and he was reactive for hepatitis C but not treated. Two weeks ago, he was treated for a hydropneumothorax requiring tube thoracostomy. Pleural fluid studies were suggestive of an empyema and he was initiated treatment with augmentin and ciprofloxacin. Antituberculous treatment was later started empirically considering a long duration of symptoms. A followup chest X-Ray had showed a complete resolution of the pneumothorax.

In the ER, his vitals included a heart rate of 102 beats per minute, a respiratory rate of 28 breaths per minute and blood pressure of 102/65 mm Hg. He was afebrile. His SPO₂ on room air was 95%. A chest X-Ray was performed which showed a right sided hydropneumothorax, a

rounded opacity in the left lower zone. A repeat tube thoracostomy was performed which drained a small amount of clear fluid. A CT Scan was done which showed an intrafissural empty cyst between the right middle and upper lobe and another fluid filled cystic lesion in the left lower lobe. He was planned for a video assisted thoracoscopy and a pleural biopsy. The intra-operative findings were suggestive of a hydatid cyst with multiple daughter cysts as the cystic lesion was aspirated. The pleural histopathology confirmed the intra-operative findings showing multiple scolices. The patient was started on albendazole. He made an uneventful recovery post-surgery and has been followed up to date.

Conclusion: Primary pleural hydatidosis is a rare occurrence of hydatid disease. In endemic regions, cystic lesions with non-specific clinical signs and symptoms should alert for hydatid disease even if it is rare.

Keywords: pleural hydatidosis, hydropneumothorax, video assisted thoracoscopy.

15.21

WOMEN WITH HABITUAL SMOKELESS TOBACCO USE: DEPENDENCE, ABSTINENCE SYMPTOMS AND ASSOCIATION

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Background: Smokeless tobacco has become increasingly popular among women in Karachi, Pakistan, particularly in the low socioeconomic group who provide labor in industries and homes. Popular ones are gutka, naswaar, paan and chaalia. One of the main reasons for

difficulty in quitting are the abstinence symptoms and dependence.

Objective: To determine the frequency of symptoms on 24- hour abstinence and dependence in women with habitual use of smoke-less tobacco in a squatter settlement in Karachi

Materials and Methods: 99 women between ages 15-75years were interviewed to determine the frequency of abstinence symptoms. The modified Fagerstrom test for nicotine dependence (for smokeless tobacco) was used to determine dependence.

Results: 99 women were interviewed. The average age was 34.4 ± 11.6 years. 70 women showed dependence. 8.1% (n=8) were found to have high dependence (score > 8), 22.2% (n=22) had moderate dependence (score 5-7), 30.3% (n=30) had low to moderate dependence (score 3-4) and 10.1% (n=10) had low dependence (score <2). 19 women had no dependence. 7 out of 8 women with high dependence were gutka users. 78 women reported abstinence symptoms, most frequent being headache (n=62), followed by 'low' mood (n=30), vertigo (n=20), bodyaches (n=22) and decreased appetite (n=4). The highest frequency of both dependence and abstinence symptoms were found in gutka users. A significant association between the presence of dependence and abstinence symptoms were found using linear regression. (adjusted $R^2=0.119$, $p=0.001$)

Conclusion: A high frequency of habitual smokeless tobacco users exhibit dependence and abstinence symptoms. Using the Fagerstrom test, a significant association is found between the two.

Keywords: women, smokeless tobacco, dependence

15.22

PNEUMONIA IN NEUTROPENIC PATIENTS WITH HAEMATOLOGIC MALIGNANCIES AND DISORDERS: FREQUENCY AND PREDICTORS OF MORTALITY AT A TERTIARY CARE HOSPITAL IN KARACHI, PAKISTAN

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Introduction: Neutropenia is a common manifestation of a haematologic malignancies and disorders; either due to the disease process itself or chemotherapy. Patients with neutropenia are at a high risk of developing severe pneumonia with life threatening complications and admission in a critical care unit.

Objective: To determine the frequency and risk factors for mortality in neutropenic adults with haematological malignancies and disorders admitted with pneumonia.

Materials and Methods: A retrospective cross-sectional survey was done. Data from January, 2011 to December, 2015 was collected on 111 neutropenic patients with haematologic malignancies

Results: Of the 111 patients enrolled in the study, 65.8 % (n=73) were male. The average age was 45.8 ± 17.9 years. The average length of hospital stay was 11 ± 9 days. 40 had acute myeloid leukemia, 20 acute lymphoblastic leukemia, 16 multiple myeloma, 12 non-Hodgkin's lymphoma, 6 aplastic anemia, 4 myelodysplastic syndrome, 3 Hodgkin's lymphoma, 3 thalassemia, 2 autoimmune hemolytic anemia, 2 chronic lymphoid leukemia and 3 had diffuse large B cell lymphoma. 55.9 % (n=62) had severe neutropenia (Absolute neutrophil count < $500 \times 10^9/L$). 24 were managed on non-invasive ventilation (NIMV)

and 23 patients required invasive mechanical ventilation (9 electively intubated and 14 failing NIMV). 13 patients developed bacteremia and 12 had a positive sputum/BAL culture. The overall mortality was 28.8% (n=32/111). The mortality in mechanically ventilated patients was 52.1% (n=12/23). The independent factors associated with mortality were multiorgan dysfunction (OR 3.53, 95% CI 1.37-9.12, p=0.009), requirement of mechanical ventilation (OR 2.75, 95% CI 0.98-7.71, p=0.05 and bacteremia(OR 3.55, 95% CI (1.02 to 12.35), p=0.05) . The severity of neutropenia influenced the mortality being 32.3% (n=20/62) in severe neutropenia and 25 % (n=5/20) and 24% (n=7/29) in moderate and mild neutropnia respectively.

Conclusion: Pneumonia in the presence of neutropenia carries a high mortality despite optimum therapy. It is higher in those requiring mechanical ventilation. Severity of neutropenia influence the mortality.

Keywords: pneumonia, neutropenia, mortality

15.23

FREQUENCY AND PREDICTORS OF NIMV (NON-INVASIVE VENTILATION) FAILURE IN PATIENTS WITH HAEMATOLOGICAL MALIGNANCIES PRESENTING WITH ACUTE RESPIRATORY FAILURE (ARF) AT A TERTIARY CARE HOSPITAL IN KARACHI, PAKISTAN

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Introduction: Patients with haematological malignancies (HM) are frequently at risk of developing acute respiratory failure (ARF) secondary to sepsis and its complications. Few

studies have evaluated the outcome of non-invasive ventilation (NMIV) in these patients.

Objective: To determine the frequency and predictors of NMIV failure in ARF in patients with haematological malignancies.

Methods: Data on patients between ages of 18 to 75 years with HM who required NIMV due to ARF was collected from January, 2012 to December 2014 at Aga Khan University hospital, Karachi, Pakistan. Patients with “not for intubation” status as advance directive were excluded.

Results: Data on 54 patients was collected. The average age was 47.7±17.9 years. 66.7 % (n=36) were male. 35.2 % (n=19) failed NIMV and had to be intubated for invasive mechanical ventilation (IMV) out of which 47.4% (n=9) expired. The average length of hospital stay in patients successfully weaned on NIMV was 8.9±5.4 days while that of patients requiring IMV was 12.9±7.6 days. Independent factors associated with NIMV failure were requirement of vasopressors (OR 15.16, 95% CI 3.22-71.38, p= 0.0006), acute renal failure (OR 17.25, 95% CI 0.57-63.49, p=0.0003) and presence of bilateral pulmonary infiltrates (OR 7.79, 95% CI 1.91 to 31.01, p=0.004). Other factors that were studied but were not found to be statistically significant were presence of neutropenia (p=0.911) and hypercapnia at presentation (p=0.89).

Conclusion: The frequency of NIMV failure in patients with HM presenting with ARF is high. Those who fail NIMV are at a high mortality risk.

Keywords: non-invasive mechanical ventilation, acute respiratory failure, haematological malignancy

15.24

TRACHEAL LEIOMYOMA PRESENTING AS A CARCINOID TUMOR

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Introduction: Tracheal leiomyomas constitute only 1% of the primary tracheal tumors. We report a case of tracheal leiomyoma that presented with symptoms of a carcinoid tumor. **Case:** A 37 year old male presented with progressive dyspnea, low grade fever, palpitations, scanty hemoptysis and a documented weight loss of 10 kg over the last six months. He had audible wheeze usually in the mornings. He had been treated for asthma but his dyspnea persisted. His vitals and room air oxygen saturations were normal however a stridor was heard at the base of the neck. A CT Scan was done which showed a rounded polypoid lesion partially obstructing the trachea at the D2 level. He was admitted urgently for bronchoscopy followed by the resection of the tumor and tracheal repair by sleeve-resection method. The resected polypoidal mass was a pale, pink fleshy tumour measuring 3x2x2 cm. It was diagnosed to be leiomyoma on the basis of spindle cells with elongated nuclei and pale cytoplasm and reactivity with Alpha Smooth Muscle Actin (ASMA) while S-100 and Desmin were negative. He was followed up as an out-patient for a year and remained disease free. **Conclusion:** Tracheal leiomyoma is a rare neoplasm which, although benign, but owing to its potentially life-threatening complication of airway obstruction, immediate resection is the mainstay of treatment. Long term prognosis is good.

Keywords: benign tracheal tumors, tracheal obstruction, tracheal surgery

15.25

CLINICAL FEATURES AND OUTCOME IN OBESE PATIENTS WITH UNDIAGNOSED OBSTRUCTIVE SLEEP APNEA ADMITTED WITH RESPIRATORY FAILURE IN A TERTIARY CARE CENTER

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Background: Obstructive sleep apnea (OSA) is common in obese patients. Undiagnosed OSA is associated with increased morbidity and mortality when they are presented with respiratory failure. Very limited data is available in these patients from developing countries. **Objective:** To determine the clinical features and outcome in obese patients with undiagnosed OSA admitted with respiratory failure on their first presentation. **Methods:** An observational study was conducted from January 2015 –December 2015 in obese patients admitted with respiratory failure at Aga Khan University Hospital in Karachi Pakistan. Patients were assessed regarding their knowledge, clinical features for underlying OSA based on clinical history and Epworth sleepiness scoring (ESS) and outcome. Patients with known COPD were excluded. **Results:** 68 patients were enrolled. Mean age was 56.75 ± 11.69 years and 38(55.9%) were female. 73.5% had no knowledge regarding OSA. The mean BMI was 34.5 ± 1.9 and 52 (76.47%) had hypertension. Mean ESS was 15.9 ± 4.4 and Malapatti IV in 57(83.8%) patients. All were admitted with hypercapnic respiratory failure, 64 (94.1%) required NIMV and

16(23.5%) required endotracheal intubation. Mean hospital stay was 9.3 ± 7.1 days and 82.4% discharged on home NIMV. Mortality rate was 5.9%. Polysomnography was done in 18 patients (26.1%) on follow up visit with mean RDI 58.12 ± 30.42 .

Conclusion: Awareness of OSA in developing countries is very limited. Undiagnosed OSA is common in obese patients admitted with respiratory failure. ESS is an important screening tool to screen such patients. Initiation of NIMV therapy on the clinical ground improves the outcome in these patients.

Keywords: Obstructive sleep Apnea, Respiratory failure, Obesity

15.26

CLINICAL FEATURES, SPECTRUM AND SUSCEPTIBILITY PATTERN OF NON TUBERCULOUS MYCOBACTERIUM ISOLATED FROM PULMONARY SAMPLES AT TERTIARY CARE CENTER, PAKISTAN

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Background: Non tuberculous mycobacterium (NTM) causes infections in patients with underlying structural lung disease. Increased number of NTM isolates has been observed in pulmonary samples of patients with underlying lung disease.

Objective: To determine the clinical features, spectrum and susceptibility pattern of NTM isolated from pulmonary samples at Aga Khan University (AKU), Pakistan.

Methods: A retrospective study conducted from January 2011 to December 2014 at AKU,

Karachi Pakistan. Patients with lung infiltrates and culture positive for NTM were included. clinical features, spectrum and susceptibility pattern of NTM were studied.

Results: 73 patients with NTM were reviewed and 30 patients met the inclusion criteria, 20(66.7%) were male with mean age 48.23 ± 23.80 years. Symptoms were nonspecific. 14(46.66%) had prior history of TB, 5 (16.66%) bronchiectasis, 5 (16.66%) were asthmatic, 3 (10.0%) had underlying malignancy, 3(10.0%) were on steroids and 2(6.6%) had previous CTS surgery. Imaging showed nodules in 11(36.6%), cavitation in 7 (23.33%) and cystic changes in 5 (16.66%). Most commonly isolated specie was M. Kansasii 4(13.33%), followed by M. abscessus 3(10.0%). 17(56.6%) were sensitive to amikacin and 8(26.66%) sensitive to clarithromycin.

Conclusion: Pulmonary NTM incidence is currently rising and should be consider as important source of infection in patient with underlying lung diseases. Large multicenter study is needed to know the prevalence in this part of world.

Keywords: Non tuberculous mycobacterium, incidence.

15.27

PATTERN AND RISK FACTORS OF INTERSTITIAL LUNG DISEASE AT A TERTIARY CARE CENTER IN PAKISTAN

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Introduction: Interstitial lung diseases (ILDs) also known as diffuse parenchymal lung diseases are a heterogeneous group of diseases

that involve varying degrees of inflammation and fibrosis of the lungs comprising of over 200 different entities. The diagnosis of interstitial lung disease require a multidisciplinary approach including a pulmonologist, radiologist and a pathologist. The registries from different countries have shown interesting differences in incidences and patterns of various forms of ILDs.

Objectives: With our study, we hope to gather more information about interstitial lung disease and plan future research and therapeutic interventions in our setting.

Methods: This is a retrospective, observational study conducted at Aga Khan University Hospital Karachi, Pakistan. All adult patients with suspected interstitial lung disease on the basis of clinical history or radiological features on HRCT scan of chest, over the last 10 years from January 2005 till December 2015 were included in the analysis.

Results: A total of 537 patients were included in the study. The most common ILD pattern was Idiopathic pulmonary fibrosis (N=251, 46.7%) followed by Nonspecific interstitial pneumonia (N=170, 31.7%) and Sarcoidosis (N=72, 13.4%). Most of the patients were females (N=323, 60.1%) as compared to males (N=214, 39.9%) with mean age 60.5 (SD +/- 14.9) years. Majority of the patients were non-smokers (N=373, 69.5 %) as compared to current or former smokers (N=164, 30.5%).

Conclusion: This study describes the different patterns of interstitial lung disease in Pakistan which will help us in better understanding and guide us towards early diagnosis and management of this disease entity.

Keywords: Interstitial lung disease, Idiopathic pulmonary fibrosis, Non-specific interstitial pneumonitis, Sarcoidosis

Techniques/Innovations

16.1 COMPARING THE EFFECTIVENESS OF FEED-FORWARD ON STUDENTS' OUTLINES/DRAFTS: AN INTERVENTIONAL STUDY

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Introduction: Written feedback helps students to improve their academic future work. However, students like to have feed-forward instead of feedback. Feed-forward is defined as teachers' comments or feedback provided to students on drafts prior to actual assignment submission. The current literature describes two common methods used in feed forward: that is on outlines or drafts. However, the existing literature does not guide that which approaches of feed-forward is better to facilitate students' subsequent learning.

Method: A Quasi-experimental study design was used to determine the effectiveness of feed-forward on outline versus drafts. Study was conducted in a private nursing institution in Karachi, Pakistan. Using universal sampling, 118 students were enrolled. The students were equally divided in to two groups, each comprising of 59 students in control and intervention arm. The control group received the feed-forward through standard practice i.e. feed-forward on their outlines, and intervention group received feed-forward on the drafts of their scholarly paper.

Results: The performance of intervention arm showed better results on the set outcomes on overall assignment score, academic writing scores of students on IELTS bands and reduced number of students' visit to the faculty for clarification of written feedback.

Conclusion: The study results concluded that feed-forward on drafts is more useful in enhancing students learning versus feed-forward on an outline.

Keywords: Feed-forward, Outline Versus Draft, written feedback

16.2 OUTCOME AND COST EFFECTIVENESS OF ULTRASONOGRAPHICALLY GUIDED SURGICAL CLIP PLACEMENT FOR TUMOR LOCALIZATION IN PATIENTS UNDERGOING NEO-ADJUVANT CHEMOTHERAPY FOR BREAST CANCER

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Background: To determine the outcome and cost saving by placing ultrasound guided surgical clips for tumor localization in patients undergoing neo-adjuvant chemotherapy for breast cancer.

Materials and Methods: This retrospective cross sectional analytical study was conducted at the Department of Diagnostic Radiology, Aga Khan University Hospital, Karachi, Pakistan from January to December 2014. A sample of 25 women fulfilling our selection criteria was taken. All patients came to our department for ultrasound guided core biopsy of suspicious breast lesions and clip placement in the index lesion prior to neo-adjuvant chemotherapy. All the selected patients had biopsy proven breast cancer.

Results: The mean age was 45 ± 11.6 years. There were no complications seen after clip placement in terms of clip migration or hemorrhage. The cost of commercially available markers was approximately PKR 9,000 (US\$ 90) and that of the surgical clip was PKR 900 (US\$ 9). The cost of surgical clips in 25 patients was PKR 22,500 (US\$ 225), when compared to the commercially available markers which may have incurred a cost of PKR 225,000 (US\$

2,250). The total cost saving for 25 patients was PKR 202,500 (US\$ 2, 025), making it PKR 8100 (US\$ 81) per patient.

Conclusions: The results of our study show that ultrasound guided surgical clip placement in index lesions prior to neo-adjuvant therapy is a safe and cost effective method to identify tumor bed and response to treatment for further management.

Keywords: breast cancer, neoadjuvant chemotherapy, surgical clip marker

16.4 ISOFLURANE ALONE VS SMALL DOSE PROPOFOL WITH ISOFLURANE FOR REMOVAL OF LARYNGEAL MASK AIRWAY IN CHILDREN

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Background: Current practice of LMA removal in pediatric patients is diverging between awake and deep LMA removal. The safe and correct timing of smooth LMA removal is still unclear; however, ideal condition for smooth LMA removal would be unobstructed, unstimulated and protected airway with minimal emergence and the recovery timing. Our study aim is to compare smooth LMA removal under deep plane of anesthesia by two different techniques; presence of 1.2 isoflurane MAC versus less than 0.5 isoflurane MAC with low dose of propofol at the time of LMA removal in children.

Methods: Fifty ASA I & II children age 2-10 years scheduled to undergo short elective surgical procedures requiring general anesthesia and spontaneous breathing technique were enrolled. Anesthesia induction, maintenance and analgesia (caudal) were standardized in all patients. Patients were randomly assigned into one of the study group: alone isoflurane (group-D) and propofol with isoflurane (group-P). At

the end of surgery and 5 minutes prior to LMA removal the predetermined isoflurane MAC was achieved. Inflated LMA was removed in group-D at MAC of isoflurane 1.2 and in group-P the LMA was removed at MAC of isoflurane less than 0.5 with addition of propofol 1 mg/kg. All study subjects were monitored for demographic, number of LMA insertion attempts, adverse airway events (coughing, hypersalivation, teeth clenching, oxygen desaturation <90%, airway obstruction, laryngospasm, bronchospasm), retching, vomiting, duration of anesthesia & surgery and duration of emergence & recovery room stay.

Results: Significant differences were not seen in patient's demographics, ASA status, duration of surgery, duration of anesthesia and number of LMA insertion attempts in study subjects. Statistically insignificant difference were found for the cough and hypersalivation in both groups. Incidence of airway obstruction (36% in group-D versus 12% in group-P) and teeth clenching (28% in group-D versus 14% in group-P) were significant in group-D. The duration of emergence time was statistically significant in group-P (6.88min) compared to group-D (9.76min). The recovery room stay was similar in both groups. The laryngospasm and hypoxemia was seen in one patient in group-D. **Conclusions:** Deep anesthesia technique by addition of propofol with isoflurane (less than 0.5 MAC) was found to be smooth LMA removal in children.

Keywords: laryngeal mask airway, pediatric, technique

16.5

AWAKE CRANIOTOMY FOR BRAIN TUMORS IN PAKISTAN: AN INITIAL REPORT FROM A DEVELOPING COUNTRY

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Background: Awake craniotomy offers safe resection of brain tumors. It is in common use in developed country but its practice in developing countries is limited, including Pakistan until recently. We present our experience of initial sixteen awake craniotomies of the country.

Methods: It is a retrospective case series conducted at The Aga Khan University Hospital. It includes all the cases of awake craniotomy, by a single neurosurgeon, over the period of seven months. Preoperative and postoperative variables were assessed including radiology. Frequencies and percentages were reported for the categorical data, and mean was calculated for continuous data. Spss v19 was used for analysis.

Result: Sixteen patients were enrolled in the study, eleven males and five females. The mean age was 40.3 years. The most common presenting complain was seizures, followed by headache. The pathologies observed included oligodendroglioma, GBM, astrocytoma, central neurocytoma and metastasis. Preoperative mean KPS score was 76, which increased to 96 postoperatively at discharge. Two intraoperative complications were observed, seizure and brain edema, in the cases. Gross total resection was achieved in ten cases, whereas five cases showed residual disease. The study had mean operative time of 178 minutes and mean length of stay of 4.3 days.

Conclusion: Awake craniotomy is highly effective in maintaining postoperative functionality of the patient following glioma resection. It is also associated with shorter hospital course and so lower cost of management.

Keywords: Awake Craniotomy, Developing Country, Glioma

16.6

COMPARISON OF POLYMERASE CHAIN REACTION AND IMMUNOHISTOCHEMISTRY ASSAYS FOR ANALYZING HUMAN PAPILLOMAVIRUS INFECTION IN ORAL SQUAMOUS CELL CARCINOMA

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Objective: Polymerase Chain Reaction and Immunohistochemistry are two well-known techniques used for the diagnoses of genetic diseases, cancerous tumours and different pathogens. This study was conducted to compare and analyze the techniques (PCR & IHC) for their sensitivity to Human Papilloma Virus in Oral squamous cell carcinoma.

Methods: This study is based on samples retrospectively collected from 47 patients with primary OSCC who were diagnosed and treated at The Aga Khan University Hospital (a major referral center in Pakistan) during the period of January 2010 to December 2013. Inclusion criteria were complete clinicopathologic data, adequate clinical follow up and availability of sufficient paraffin- embedded tumor material. HPV general and type specific 16 and 18 were investigated by means of PCR. HPV

immunoreactivity was further investigated by means of immunohistochemistry.

Results: Among the 47 evaluated patients, 32 (68.1%) male and 15 (31.9%) female, PCR detected the presence of HPV in 32 (68.1%) patients while IHC showed no positive test results. Results detected from IHC were insignificant and negative. p53 was positive in 32 (68.1%) patients and negative in 15 (31.9%). HPV type 16 being most prevalent showing positivity in 27 (57.4%) patients.

Conclusion: We conclude that PCR is more sensitive and reliable when diagnosing and detecting HPV for oral squamous cell carcinoma rather than IHC as results suggest that results from IHC were all negative and insignificant, hence PCR should be the first initial diagnostic test for detecting HPV due to its better sensitivity and successful detection of HPV.

Keywords: Human Papilloma Virus, Polymerase Chain Reaction, Immunohistochemistry

16.7 FLOW CYTOMETRY-BASED NK CELL CYTOTOXICITY ASSAY

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Objective: Natural killer (NK) cells are the first line of defense against tumor cells. Chromium (Cr) release assay has been used as a standard method to test the susceptibility of target cells to NK cells. Chromium release assay involves the use of radioisotope ⁵¹Cr; therefore, researchers have been interested in developing an assay that would help in exploring the effects of NK cells on target cells without the use of radioisotope. I have used a flow cytometry-based assay to study the interaction of target cells and NK cells.

Methods: NK cell-sensitive erythroleukemia (K562) cells were labeled with Vybrant 3,3'-Diocetadecyloxycarbocyanine Perchlorate (DiO) and co-cultured with freshly isolated, peripheral blood mononuclear cells (PBMNCs) cells containing NK cells at different effector-to-target (E:T) ratios. Cells were then stained with 7-aminoactinomycin D (7-AAD) and analyzed by flow cytometry to evaluate cell death.

Results: Increased NK cell cytotoxicity toward K562 target cells was observed with increased numbers of NK cells.

Conclusion: This flow cytometry-based assay which does not require ⁵¹Cr can be used to study the susceptibility of various types of malignant cells to NK cells.

Keywords: Flow cytometry, Cytotoxicity Assay, Natural Killer Cells

16.8 VALIDATION OF METHEMOGLOBIN REDUCTION TEST UTILIZING SODIUM NITRITE FOR FORMULATION OF POSITIVE SAMPLES

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Introduction: Accrediting bodies require laboratories to practice strict quality control (QC) measures to ensure reliability of test results. Method validation is an integral part of laboratory's QC program and must be performed before starting any test. Methemoglobinemia is a condition in which iron in hemoglobin molecule is converted to ferric form resulting in inability to bind oxygen reversibly. Clinically it presents as cyanosis, headaches, and shortness of breath. Methemoglobinemia can be a life-threatening

complication after exposure to a range of chemicals such as nitrates, nitrites, aniline and drugs such as dapson. The methemoglobin concentration is used to diagnose and guide treatment of methemoglobinemia. **Aims and Objectives:** The purpose of this study was to validate methemoglobin reduction method by spectrophotometry using sodium nitrite for converting normal hemoglobin samples to positive methemoglobin samples. **Materials & Methods:** The study was conducted at Section of Hematology, Aga Khan University Hospital in April 2015. Freshly drawn EDTA blood samples of normal adult males and females were included. Patients from both sexes and all age groups were included in the study. Samples were mixed with varying concentration of sodium nitrite in order to define the concentration required to produce methemoglobin in the range of 60-100%. The sample tubes were incubated for half an hour at 37^oC. The blood sample's methemoglobin concentration was measured using the spectrophotometer. The absorbance at 630 nm was used to determine the methemoglobin concentration. SPSS version 19 was utilized for statistical analysis. Consequently, the results of positive and negative samples were utilized for validation of the test method. **Results:** A total of 20 samples were included in the study. Out of 20, ten samples were used as negative control, whereas 10 samples were analyzed after treating with sodium nitrite. Age range was 38-75 years. There were 6 females and 4 males. A concentration of 0.1 gm /3ml of normal whole blood sample gave a 60% hemoglobin concentration. By increasing concentration (0.1gm, 0.15gm, 0.2gm and 0.25gm and 0.3gm /3 ml) gave a methemoglobin concentration upto 100%. The conversion of hemoglobin to methemoglobin increased linearly, with a corresponding increase of sodium nitrite concentration. The correlation of

co-efficient between methemoglobin percentage and sodium nitrite concentration was 0.976. The final validation study passed the statistical analysis.

Conclusion: Validation of each testing method should be performed before initiating a test in order to ensure reliability of test results. Methemoglobin can be formulated in vitro for this purpose utilizing ≥ 0.1 gm/ 3ml of sodium nitrite.

Keywords: Validation, methemoglobin, sodium nitrite

16.9 COMPARISON OF TWO METHODS OF HUMAN GENOMIC DNA EXTRACTION FROM PERIPHERAL BLOOD MONONUCLEAR CELLS (PBMNCS)

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Introduction: Optimal extraction of human high molecular weight genomic DNA is required for various assays including genotyping. Various methods have been developed to optimize the extraction of genomic DNA from different sources. Our aim is to two compare two methods for extraction of genomic DNA from PBMNCs. Method A is based on organic extraction of DNA using phenol:chloroform:isoamyl alcohol while method B mainly involves direct precipitation of DNA using salt and ethanol. **Methods:** PBMNCs will be lysed with buffer which is mainly comprised of sucrose, Triton X-100, MgCl₂ and Tris-Cl. Lysed cells will be subjected to proteinase K digestion. In method A, organic extraction of DNA will be performed using phenol and subsequently with phenol:

chloroform: isoamyl alcohol. In method B, this particular step will be omitted and instead, direct precipitation of DNA will be done using sodium chloride, isopropanol and ethanol. In method A, precipitation of DNA will be carried out using sodium acetate and ethanol. DNA obtained from both the methods will be solubilized in TE buffer. The concentration (in ng/dl) and purity (based on 260/280 ratio) of the DNA samples will be measured using nanodrop. Presence of DNA will also be confirmed by performing PCR for housekeeping gene.

Results: This study is ongoing.

Conclusion: We intend to gauge the effectiveness of two methods of genomic DNA extraction on the basis of two aspects. Firstly, the DNA needs to be intact, concentrated and pure. Secondly, time duration and labor intensity of methods in question will be addressed.

Keywords: Genomic DNA, DNA extraction, Peripheral blood mononuclear cells

16.11

ASSESSING PARTICIPANTS' KNOWLEDGE IN ONLINE EHEALTH CERTIFICATE COURSE: A PRETEST-POSTTEST STUDY

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Introduction: Aga Khan Development Network eHealth Resource Centre has designed a year-long online certificate course in eHealth comprising of 10 modules and a capstone. The course is designed to build the eHealth capacities of professionals in the health care sector. During the first year of the course delivery, i.e. from April 2015 to March 2016, a cohort of 20 participants were enrolled in the course.

Objectives: This study aims to assess change in the level of participants' knowledge as a result of the course. The research question of the study is: Is there a difference in the level of participants' knowledge before and after the delivery of the eHealth certificate course?

Methods: The study utilizes a pre-post design to measure the effectiveness of each module by using pre-posttests which were developed using the course content and were reviewed by content experts. The tests were administered to all participants before and after each module. The questions were the same on both pre- and post-tests. Only participants who completed both tests were included in the analysis. The difference was computed for each module by subtracting the percentage of correct answers on the pre-test from the percentage of correct answers on the post-test.

Results: The average difference in the percentage of pre-posttests for all modules showed a 13.64% increase in the level of participants' knowledge.

Conclusion: The results provide an insight on the concepts and competencies that were well received during the course and the ones that require further attention.

Keywords: Pre-posttests, eHealth, eLearning

16.12

PANCREATICOGASTROSTOMY – AN ALTERNATE FOR DEALING WITH PANCREATIC REMNANT AFTER PANCREATODUODENECTOMY – EXPERIENCE FROM AGA KHAN UNIVERSITY HOSPITAL

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Introduction & Purpose of study: Whipple's pancreaticoduodenectomy (PD) has been refined over the years to be a safe operation with a reported mortality rate of less than 3% in most of the recent series though morbidity rate still remains high (30-50%). Among the causes of morbidity, pancreatic fistula, hemorrhage and delayed gastric emptying are the common ones. The pancreatic fistula is the single most important cause of mortality following pancreaticoduodenectomy. To manage the pancreatic remnant and prevent these complications, surgeons have used two main anastomotic techniques: pancreaticojejunostomy (PJ) and pancreaticogastrostomy (PG). Results of recent studies have shown significant differences in the incidence of pancreatic fistulas between these two methods, it has been found that PG is associated with fewer overall complications than PJ. The preference to use PG rather than PJ after pancreaticoduodenectomy is mainly because of the advantages provided by the relatively thick gastric wall, low pH, and lack of enterokinase in the stomach. Presented here is, background concept, technique and our experience of PG in Whipple's procedure done at Aga Khan University Hospital, Karachi.
Material and Methods: Retrospective review of charts was done for the patients who underwent Whipple's pancreaticoduodenectomy at Aga Khan University Hospital and had

pancreaticogastrostomy as a preferred anastomosis for pancreatic stump.

Results: 42 patients underwent pancreaticoduodenectomy who had pancreaticogastrostomy as a preferred anastomosis for the pancreatic stump. 27 patients were male. None of our patients had the complication of post-operative pancreatic fistula. 13 (31 %) of our patients had morbidities including delayed gastric emptying (4 patients), wound infection (3 patients), haemorrhage from pancreatic stump (5 patients) and Choledochojejunostomy leak (1 patient). Mortality is reported to be 11.9 % (5 patients) in this case series.

Conclusion: Pancreaticogastrostomy seems to be a safe alternative and easier anastomosis to perform with lesser post-operative morbidity and mortality. As our experience and numbers will grow, we should be able to contribute with more reliable data.

Keywords: Pancreaticogastrostomy, whipple procedure, pancreas

16.13

EVALUATION OF OPERATIVE NOTES FOR INGUINAL HERNIAE REPAIR IN A TERTIARY HEALTHCARE INSTITUTE - ARE STANDARDS BEING MET?

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Objective: To determine the concordance of operative notes (for inguinal herniae repair) with the Royal College of Surgeons, Edinburgh guidelines.

Methods: This was a prospective cross sectional study conducted from May to October, 2013 at

the Aga Khan University Hospital, Karachi, Pakistan. The operative notes of adult patients undergoing open tension free mesh repair inguinal hernia were reviewed. The frequency of adherence to RCS guidelines was evaluated for an entire note as well as each component of the operative note. Stratified analysis was done for effect modifiers i.e. age, gender, year of residency, graduating medical institute of resident and case location. Data obtained was analyzed using SPSS.

Results: A total 89 operative notes were reviewed and 66.3 % of the operative notes were found to be in complete concordance with RCS guidelines. 'Operative findings' and 'closure technique' were the most frequent missing component, 28.1% and 21.3 %, respectively. No statistically significant difference of concordance was observed on the basis of resident's age (≤ 28 years = 63.8 % vs. > 28 years = 71 %, $p=0.63$), resident's gender (male = 70.2% vs. female = 59.4 %, $p=0.35$), level of residency (Junior = 53.1% vs. Senior = 73.7 %, $p= 0.06$), graduating institute (private = 52 % vs. Government medical institute = 71.9 %, $p=0.08$) and case location (day care = 62.8 % vs. In-patient = 69.6%, $p= 0.51$).

Conclusion: This study identifies key areas of weakness i.e. important and intricate details of operative notes like findings and closure techniques, in the operative note-keeping. The fact that there was no difference in the operative notes of residents from different graduating institutes emphasizes the need to develop a standard curriculum regarding medical documentation in all medical institutes of Pakistan.

Keywords: operative notes, inguinal hernia, guidelines

16.14 IMPACT OF CHILD-FRIENDLY ACTIVITIES ON PATIENT SATISFACTION IN THE PEDIATRIC EMERGENCY DEPARTMENT OF A LOW TO MIDDLE INCOME COUNTRY

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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: There were 303 patients enrolled in each group. Mean age was around 5 years, with over half male, for both groups. 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). Although patients most commonly presented

with pain to the PED, no significant difference was observed between the groups for degree of pain / fear.

Conclusion: Child-friendly activities in the PED did not improve patient satisfaction. Additional strategies are 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

16.15

DECONVOLUTION GIVES CLARITY TO WIDEFIELD MICROSCOPY

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Introduction: Widefield epi-fluorescence microscopy (WFM) is an integral part of a microscopy imaging suite. Limitation associated with WFM is that it collects the entire fluorescent signal coming from focal plane as well as above and below the focal plane. This results in the degradation of contrast which appeared as blurred image. Moreover, situation becomes much worst when the sample thickness exceeds a certain limit. Current advancement however, made it possible to remove that blur by using computational model called deconvolution. Nonetheless, a confocal laser scanning microscope (CLSM) is still needed when the sample thickness is $> 20 - 30\mu\text{m}$.

Objective: To introduce a computational solution to remove blur from images captured via widefield epi-fluorescence microscopy.

Materials & Methods: Skin tissue $10\mu\text{m}$ thick was stained with biotinylated Lycopersicon esculentum and streptavidin conjugated cy3.

Nuclei were counterstained with DAPI.

Acquisition software NIS-Elements version 4.5 and Deconvolution modules were used for imaging and post imaging analysis respectively. Images captured using Nikon DS-Qi2 monochrome camera.

Results: The blur appeared to be removed by deconvolution thus dramatically increasing contrast. By applying 3D Deconvolution Real Time and 3D Deconvolution on selected region of interest, blur was found to be removed concurrent to the time of acquisition.

Conclusion: Owing to the advancement in imaging field along with strong computational algorithms and sensitive cameras widefield microscopy has found to be a much more sensitive imaging tool.

Keywords: widefield microscopy, deconvolution, thick tissue

16.16

GETTING THE MOST FROM A WIDEFIELD MICROSCOPE

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Introduction: Current advancement in the field of imaging has strengthened the widefield microscope to give much faster and better results than a confocal microscope does. At present widefield microscopy is not only used for multi-color imaging and live cell imaging but also in 3D imagery where a confocal microscope used to have the monopoly. Along with sensitive CCD camera and powerful computers it becomes an ideal choice for quantitative fluorescence. Besides widefield microscopy provides an economical alternate to confocal microscopy in many imaging applications.

Objective: To highlight the potential strength of widefield microscopy. *Methods:* 2D and 3D multicolor imaging was performed using bovine pulmonary artery endothelial cells (BPAEC). Cells were stained with MitoTracker® Red for mitochondria, Alexa Fluor® 488 phalloidin for F-actin and DAPI for nuclei. Acquisition software NIS-Elements version 4.5 was used for imaging and post imaging quantitation. *Results:* No huge difference was found when fluorescently labelled cells were imaged by wide field microscope and confocal laser scanning microscope. Images were captured in lesser time than it takes to image via confocal. Fluorescence intensity of flourophore dyes were measured via intensity line profile and intensity surface plot. 3D image was reconstructed using optical sections of 0.3µm using stained samples of BPAEC.

Conclusion: A widefield microscope with a fully motorized stage and integrated software is an ideal economical imaging tool for quantitative fluorescence imaging. *Key words:* widefield microscope, fluorescence, confocal microscope.

Keywords: widefield microscope, fluorescence, confocal microscope

Trauma and Violence

17.1

PREDICTING COMPLICATIONS IN ACUTE CARE SURGERY PATIENTS

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Aim: In order to refine our understanding of how young-onset rectal cancer patients differ from older patients in our population, we conducted a study focusing on the clinicopathological features and oncologic outcomes in these two age groups.

Methods: Patients diagnosed with rectal cancer were retrospectively reviewed from January 2005 to December 2010.

Results: Total of 143 patients. 31% were below age 40. Mean age 50.9 (+/-15.9). Tumors localized to upper one third of rectum were 54% and rests were lower one third. Most common tumors were moderately differentiated adenocarcinoma (70%) however, poorly differentiated adenocarcinoma were more in young. 46.2% patients presented as stage III. 22% of patients had recurrence with the survival rates low in young age groups, equal in terms of gender and low in poorly differentiated, mucinous and stage III tumors.

Conclusion: Results obtained from this study showed few differences in disease pattern and outcome between the two age groups. However, these findings can further be used in comparison with the international data and for our future references.

Keywords: Critical Care, Scoring, Acute Care Surgery

17.2

CAN CLINICAL EVALUATION DETERMINE THE NEED FOR PELVIC X-RAY IN AWAKE AND STABLE BLUNT TRAUMA PATIENTS?

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Aim: Pelvic fractures is common and can be potentially life threatening. The early diagnosis of pelvic fractures resulting from blunt abdominal trauma traditionally relies on the anterior-posterior pelvic radiograph although sometimes it may not give a definitive diagnosis of pelvic fractures. So reliability of pelvic x-ray has been questioned and ways of removing pelvic x-ray from the ATLS protocol are being observed on the basis of finding the reliability of clinical examination in finding out pelvic fractures in alert and awake, hemodynamically stable patient and also to avoid the unnecessary exposure of radiation and reduce the financial burden.

Methods: This is a cross sectional study conducted in the department of surgery, Aga Khan University Hospital, Karachi. This study included patients with blunt trauma mainly the road traffic accident victims presenting the emergency department with GCS of 15, hemodynamically stable and alert and awake. Clinical examination of pelvis of these patients were done on three different examination maneuvers and assessment of pelvic made which was then compared to routine pelvic x-ray findings.

Results: Total of two twenty one (221) of blunt trauma patients were reviewed having mechanism of injury being road traffic accident and history of fall. Of these 221 patients thirty

two (32) were not entered in the study as they had GCS of < 15, fifteen patients were not included as they have abdominal tenderness, forty one (41) patients had associated lower limb injuries. So the final of one thirty three (133) patients were included in our study. Of these 133 patients majority of patients were male around 91.7% and 8.9% were females. Mean age of patients included in this study 37 with standard deviation of +/- 14.2. Fourteen patients were positive for pelvic fracture on clinical examination and positive on PXR categorized as true positive (TP), fourteen patients were positive for pelvic fracture on clinical exam but negative on PXR and categorized as false positive (FP), two patients were negative for pelvic fracture on clinical exam but positive on PXR categorized as false negative (FN), one hundred and three patients were negative for pelvic fracture both on clinical exam and PXR and were labelled as true negative (TN). Sensitivity, Specificity, Positive predictive value and Negative predictive value were calculated by using two X two table. Sensitivity of clinic examination was found to be 87.5%, Specificity 88.03%, Positive Predictive Value 50% and Negative predictive value 98.09%.

Conclusion: In relation to above mention findings new protocol can be advised for alert and awake patients and pelvic x-ray can be avoided helping in reducing the financial burden to patient, reducing emergency hassle and unnecessary radiation.

Keywords: Radiation in ER, Blunt Trauma, Clinical Examination

17.3 DOMESTIC VIOLENCE AMONG FEMALE HEALTHCARE PROVIDERS

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Objective: To estimate the prevalence of domestic violence among married female healthcare providers within the Pakistani context. *DESIGN:* A systematic review has been done. *PLACE AND DURATION:* From January 1992 to December 2011 the international and national published literature on domestic violence analyzed and scrutinized.

Methodology: Used different electronic databases search engines (CINAHL, Medline, Pub Med, PsycInfo, and Global health), Ancestral, hand searching, and citation tracking. The searched result based on 250 published quantitative articles in English language published in scientific journals; finally 54 articles were selected to review.

Results: Of the total 54 researched articles revealed that worldwide domestic violence prevalence is ranged of 10% - 69% however, in Pakistan it is 30% to 79%. Verbal violence is the most common type which further leads to other form of domestic violence such as emotional, physical, and sexual violence. Internationally, very limited literatures were available on domestic violence among female healthcare providers but, no literature was found in the Pakistani context.

Conclusion: Our literature review reveals that globally female are significantly experiencing in a large proportion with domestic violence and verbal violence in more common. Further research is also need in this regard especially on the ground of domestic violence among healthcare providers.

Keywords: Intimate Partner Violence, Married Female, Healthcare Providers

17.4 QUALITY OF LIFE AFTER DAMAGE CONTROL LAPAROTOMY FOR TRAUMA

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Introduction: Though short term survival advantage of damage control laparotomy in management of critically ill trauma patients is established, there is little known about the long term quality of life of these patients. Facial closure rate after damage control laparotomy is reported to be 20-70 percent. Abdominal wall reconstruction in those who failed to achieve facial closure is challenging and can potentially affect quality of life of these patients.

Methodology: We conducted retrospective matched cohort study. Adult patients who underwent damage control laparotomy from Jan 2007 till Jun 2013 were identified through medical record. Patients who had concomitant disabling brain injury or limb injuries requiring amputation were excluded. Age, gender and presentation time matched non exposure group of patients who underwent laparotomy for trauma but no damage control were identified for each damage control laparotomy patient. Quality of life assessment was done via telephonic interview at least one year after the operation, using Urdu version of EuroQol Group Quality of Life (QOL) questionnaire EQ5D after permission. Wilcoxon signed rank test was used to compare QOL scores and McNemar test was used to compare individual parameters of QOL questionnaire. Study was approved by institutional ethical review committee.

Results: Out of 32 patients who underwent damage control laparotomy during study period, 20 fulfilled the selection criteria for which 20 matched controls were selected. Median age of patients (IQ Range) was 33 (26-40) years. Facial closure rate in damage control laparotomy group was 40% (8/20). One third of those who did not achieve facial closure (4/12) underwent abdominal wall reconstruction. Self-reported QOL score of damage control laparotomy patients was significantly worse than non-damage control group ($p = 0.032$). There was no statistically significant difference in two groups regarding individual QOL measures.

Significantly more patients in damage control group were requiring use of abdominal binder, and more patients in damage control group had to either change their job or had limitations in continuing previous job. Our study was not adequately powered to detect factors responsible for worse QOL in damage control group.

Conclusion: Quality of life of damage control patients is worse than their age and gender matched patients who underwent trauma laparotomy but not damage control. Adequately powered studies need to be conducted to explore factors responsible for this finding for potential improvement. **Key Words:** Damage Control Laparotomy, Laparostomy, Quality of Life

Keywords: Damage Control Laparotomy, Laparostomy, Quality of Life

17.5 STRATEGIES TO OVERCOME WOMEN'S VIOLENCE IN PAKISTAN

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Background: Gender based violence (GBV) among women's is the major domestic and

health problem in Pakistan. However, working on the following area is very challenging and required practical solutions to enhance and improve women's living.

Objective: To elucidate the causes and impact of GBV with possible solution that suitable in Pakistani setting.

Methods: By the using the keywords, different English language articles and documents were reviewed on MEDLINE that published during the year of 2010 to 2015.

Conclusion: The practical long term solutions suitable for the GBV is 1) Improving mother education, 2) Removing gender discrimination in early childhood years. There is a colossal impact of GBV not only on women' life but also life of their children and families. GBV may result in the physical, psychological or social consequences; but it can be negotiated by considering many possible implementations in our setting. Out of these solutions, improving mother and early childhood education seems to be long term solution to eliminate GBV from its roots.

Keywords: GBV, discrimination, strategies to reduce GBV

17.6

A DECADE OF CHANGE TRENDS IN SURGICAL MORTALITY; AUDIT FROM A TERTIARY CARE HOSPITAL

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Background: Mortality is an important indicator of Quality of Care and may be used to study changing trends and patterns of disease. During the last 25 years, growth and development of our

institution has led to a perception among surgical faculty that more sick and complex cases are now being managed at our institution.

Methods: A retrospective audit of the trend of mortality in the general surgery service at our hospital over the last decade was conducted to reflect the complexity of cases being seen at our hospital. Mortalities of 8 separate years, a decade apart, namely 1997, 1998, 1999, and 2000 as initial years (Group-I) and 2011, 2012, 2013 and 2014 as recent years (Group-II) were reviewed.

Results: Total number of admissions and surgeries performed during these two periods experienced an increase of 50.7% & 64.2 % respectively. The total mortality showed an increase with 139 (mortality rate 0.96 %) seen in Group I to 285 (mortality rate 1.31 %) seen in Group II a percentage increase of 105 %.

Comparing the operative mortality i.e. within 30 days of admission, between the two periods separately, a decrease in rate was observed; mortality rate dropped from 1.21 % to 1.16 % of all surgeries. Analyzing non-operative mortality separately a significant increase was observed, from six deaths in Group I comprising 4.3 % to 76 non-operative deaths in Group II corresponding to 26.7 % (p=0.000). A significant change in cause of death was noted in two areas; deaths due to Trauma increased from 12.9 % to 25.3 %, p=0.04, a reverse trend was seen in deaths due to GI bleeding 11.5 % to 3.2 %, p=0.001. Significantly more patients in Group-II had higher ASA levels (ASA IV or V) as compare to Group-I (62% vs. 46%, p=0.00). There was a significant decrease in the mean length of hospital stay from 14.7 days in Group I to 9.2 days in Group II (p=0.001).

Conclusion: In conclusion, our study showed an increase in total mortality rate over the years, the change was mainly due to an increase in non-operative mortality. Trauma became the predominant cause of death overtaking

malignancies. There is a significant rise in patients with higher ASA levels indicating more sick and critical patients presenting to hospital.

Keywords: mortality, quality of care, surgery

17.7

IMPACTS OF INCREASED DOMESTIC VIOLENCE RATES IN PAKISTAN

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Introduction/objective: Domestic violence is a pattern of different abusive behaviors in any relationship which are used by one partner to gain and maintain the power and control over another intimate partner. It cannot be just physical, sexual, emotional, economic and psychological too. This tends to humiliate, isolate, blame, hurt etc to someone. Women's are the most vulnerable to such threats in various forms

Method: A case was encountered from clinical setting a 35 yr old woman reported that due to multiple extra marital affairs of her husband on questioning she was beaten and verbally abused that made her mental situation to worsen causing depression. The literature reviews articles referred from Google scholar paper, PubMed and science direct.

Results: JPMA, January 2007 study shows that four in every five women suffers through domestic violence. In Karachi 34% of women reported physical violence among them 50% were beaten during pregnancy too. Another study estimates 99% housewives and 77% working women's were beaten by their husbands. Study done in 2014 by Roberto A. Ferdman showed that victims may have a long lasting damage to their health that includes heart

diseases, stroke, addicted heavy drinkers, asthma etc.

Recommendations: At national level this issue should be recognized as serious matter of concern by the government. Although it is but it needs a consistent follow up in order to avoid worst consequences. Government should also provide best of health facilities and proper screening of all types of domestic abuses and violence. There must be enough educational and awareness programs consisting of doctors, nurses and teachers by one to one teaching, counseling or grouped based teaching so that we can prevent these types of violence's in families and communities.

Keywords: domestic violence, health damage, trauma

17.8

BI-LINGUAL PICTORIAL STORYBOOKS – A NOVEL METHOD TO GENERATE KNOWLEDGE ABOUT ROAD SAFETY AMONG PRIMARY SCHOOL CHILDREN IN RESOURCE-LIMITED SETTINGS

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Background: Road traffic injuries (RTIs) commonly affect the younger population in low-and-middle-income countries. School children can be educated about road safety using books. This study assessed use of bi-lingual pictorial storybooks to improve RTI prevention knowledge among school children studying in Urdu and English medium schools.

Methods: This pretest-posttest study was conducted in eight public and nine private

schools of Karachi, Pakistan between February-May 2015. Children aged 8-12 years from grades 4 and 5 were enrolled (n=410). The intervention was an interactive discussion about RTI prevention using a bi-lingual (Urdu and English) pictorial storybook. A baseline test (total score 7) was conducted to assess children's pre-existing knowledge about RTI prevention before giving the intervention. Two post-tests were conducted; first immediately after the intervention, and second after two months. Test scores were analyzed using McNemar test and paired sample t-test. .

Results: There were 57% girls in study sample and 55% public schools students. Compared to the baseline score (5.1±1.4), the number of correct answers increased in both subsequent tests (5.9±1.2 and 6.1±1.1 respectively, $p<0.001$). Statistically significant improvement in mean scores was observed based on gender and school type over time ($p<0.001$). The intervention was beneficial for both genders, grades and school types. Over time, males got higher mean scores than females, and grade 4 and government school students showed a progressively higher learning gradient than grade 5 and private school students.

Conclusion: Interactive discussion using bi-lingual pictorial storybooks helped primary school children understand about RTI prevention. RTI prevention education classes may be incorporated into school curricula using the storybooks as teaching tools

Keywords: Road Traffic Injuries, Bi-lingual Pictorial Storybooks, School Children

17.9

GLOBAL CHANGES IN CHILD AND ADOLESCENT ROAD TRAFFIC INJURY MORTALITY BY ROAD USER TYPE ACROSS COUNTRY ECONOMIC CATEGORIES BETWEEN 1990 AND 2013

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Background and Objective: The burden of death due to RTIs affects predominantly vulnerable road users (pedestrians, bicyclists and motorcyclists) in aggregated age data. However, the knowledge about burden by road user category is limited for children and adolescents. The objective of this study is to investigate global changes over time among children and adolescents' road traffic mortality in vulnerable and non-vulnerable road users stratified by country economic level between 1990 and 2013. *Methods:* Country-level data extracted from the Global Burden of Disease study were split into four income levels. Mortality rates and percent change in rates (with 95% confidence intervals) between 1990 and 2013 were calculated by three categories of vulnerable road users (pedestrian injury by road vehicle, pedal cycle vehicle, motorized vehicle with two wheels) and non-vulnerable road users (motorized vehicle with three or more wheels).

Results: Between 1990 and 2013 there is a global reduction in the rate of RTI mortality among children and adolescents for both vulnerable and non-vulnerable roads users except for an increase among 3 or more wheelers (non-VRUs) from LICs (28%; 95% CIs -1.4, -0.2). In 1990 and 23 years later in 2013 the mortality rates are higher among VRUs compared to non-VRUs except for HICs. The

rates of pedestrian mortality are the highest globally and in LICs, LMICs and UMICs in 2013 except in HICs.

Conclusion: Young non-VRUs of LICs do not follow the general pattern of RTI reduction observed by other country economic categories.

Keywords: road traffic injuries, children and adolescents, global

(71.4%). The most common body parts to be injured were the upper limb (18.5%) and head (10.5%).

Conclusion: Majority of tip over injuries among children were caused by TVs or TV trolleys. TV tip over is a preventable home safety issue that needs to be disseminated to caretakers of children under 5 years of age. Placing TV in stable places such as mounting it in walls is one protective way.

Keywords: TV, tip over, pediatric injuries

17.10

TIP OVER DANGERS FOR CHILDREN IN OUR HOMES: DATA FROM EMERGENCY DEPARTMENT

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Introduction: Overwhelming majority (90%) of all the injuries that children sustain is unintentional. Most of injuries among children occur within the home environment.

Objective: To describe injury patterns and outcomes for pediatric injuries resulting from tip-overs of furniture in the home environment reported in emergency department.

Methods: We reviewed pediatric (<16 years) injuries caused by tip over of furniture and appliances retrospectively from January 2010 to December 2014 in Emergency Department of Aga Khan University Hospital. Telephonic interviews with parents of these injured children were also conducted to collect information about the injury scene and other factors that may help prevention efforts.

Results: From 2010-2014, 55 children visited ED with tip over injuries. Of the total children, 69% were boys. The most common cause of tip over was TV/TV trolley (40%), followed by miscellaneous household items. Among those injured by TV/TV trolleys, 71% were boys and the majority (93%) were <5 years of age. The size of TV screen was less than 34 for all cases. Majority were admitted to intensive care unit

Women and Child Health

18.1 EVALUATION OF COMMON RISK FACTORS RELATED WITH BREAST CARCINOMA IN FEMALES: A HOSPITAL BASED STUDY IN KARACHI, PAKISTAN

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Abstract Introduction: Breast malignancy is one of the leading causes of death in female worldwide. There are a number of risk factors associated with breast cancer but in Karachi Pakistan there is insufficient data available.

Material and Methods: A case control study was conducted on females, age group between 30-80. This study was done by a retrospective data collection in Aga Khan University Hospital Karachi, Pakistan. A total of 108 females with primary malignancy of breast were included and 108 controls were also included from same data. Relationship of these factors with disease was studied using logistic regression to calculate Odds ratios and 95 % confidence interval.

Results: A total of 14 variables were analyzed and based on Odds ratio and confidence interval for each of breast cancer factors 7 variables were found to be “the risk factors” for development of breast cancer, these factors were the older age, family history of breast cancer, family history of other carcinomas, personal history of breast carcinoma, early age of menarche, older age of mother at first delivery and lesser number of children. Five factors i.e. parity, breast feeding, Oral Contraceptive Pills consumption, past history of oophorectomy and hysterectomy showed protective association. One variable i.e. use of hormonal replacement therapy showed controversial association and one of the variable i.e. the marital status was not significant in this study.

Conclusion: It is concluded that most of the well-known risk factors of breast cancer are also associated with breast cancer in the female population of Karachi Pakistan. High risk patient can be focused by the help of this study and screening can be more effective in the early diagnosis before clinically evident breast malignancy.

Keywords: Female, Mammogram, Karachi, Risk Factors,, Breast Cancer

18.3 ACCURACY OF MAGNETIC RESONANCE IMAGING IN PRETREATMENT LYMPH NODE ASSESSMENT FOR GYNECOLOGICAL MALIGNANCIES

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Objective: To determine the accuracy of magnetic resonance imaging (MRI) in detection of metastasis in pelvic and para-aortic lymph nodes from different gynecological malignancies.

Materials and Methods: This retrospective cross sectional analytic study was conducted at the Department of Diagnostic Radiology, Aga Khan University Hospital Karachi Pakistan from January 2011 to December 2012. A sample of 48 women, age range between 20-79 years, fulfilling inclusion criteria were included. All patients had histopathologically proven gynecological malignancies in the cervix, endometrium or ovary and presented for a pretreatment MRI to our radiology department.

Results: MRI was 100% sensitive and had a 100% positive predictive value to detect lymph node metastasis in lymph nodes with spiculated margins and 100% sensitive with a 75% positive

predictive value to detect lymph node metastasis in a lymph node with lobulated margins. The sensitivity and positive predictive value of MRI to detect heterogeneous nodal enhancement were 100% and 75% respectively.

Conclusions: Our study results reinforce that MRI should be used as a modality of choice in the pretreatment assessment of lymph nodes in proven gynaecological malignancies in order to determine the line of patient management, distinguishing surgical from non-surgical cases.

Keywords: MRI, Lymph Nodes, Females, Malignancies

18.4

STRIKING THE RIGHT CHORDS: DETECTING INPATIENT MEDICAL HARM RATE BY APPLYING HYBRID FORM OF IHI TRIGGER TOOL

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Background: Our mission of providing exemplary care to patients can only be achieved by creating a harm free environment. AKUH had adapted IHI's (Institute of Health care improvement) Global Trigger Tool (GTT) to identify patient harm rate. Focusing on our patient population ie Obsgyn & Pediatrics, we at AKH- Garden adopted IHI Perinatal Trigger tool (PTT) to identify harm rate since 2013. Later we feel this PTT not effectively serve all our patients, also Global and other tools were far beyond our need. So we constitute a Hybrid trigger tool (HTT) i.e. a customized and integrated form of two IHI tools i.e. GTT and

PTT with the help of experts, as per our need and patient population. The beauty of this tool is that it effectively, practicably and relevantly focused on all our patient population.

Methodology: Retrospective study from July, 2013 to Dec, 2014 using standard IHI's PTT later HTT was implemented from Jan 2015 to date. Randomly selected 20 couplets (mother and baby) closed medical records were reviewed per monthly. Deming's PDSA cycle was implemented as a problem solving methodology. Pareto Analysis was done to identify the problem & further more quality tools were utilized for studying & resolve problem.

Results: Out of 360 reviews 30 Adverse Events (AEs) were identified in 18 months study from PTT and later 14 AEs identified from HTT from Jan-June, 2015. Comparison done for the last six months between HTT and PTT. HTT is more effective in detecting harm. We identified that out of 14 AEs 6 new AEs were identified in HTT which were never identified in PTT as the triggers never existed in it. Moreover, Quality patient safety department of SH through CMEs trained 30 staffs including Doctors, nurses & quality patient safety professionals from all 4 SH's and they are successfully conducting audits on HTT in their respective areas. HTT auditing also improved voluntary reporting of AEs because of enhanced awareness.

Conclusion: We strongly recommend HTT for secondary care hospitals catering services to Women and child health as GTT and PTT were not effectively, practicably and relevantly focused & cover these patient population.

Keywords: Aga Khan Hospital for Women, Garden, Perinatal Trigger Tool, Hybrid Trigger Tool

18.5 SEXUAL AND REPRODUCTIVE HEALTH AND ASSOCIATIVE RIGHT, IN THE CONTEXT OF PAKISTAN

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Purpose: To line out sexual and reproductive associative right for frame work of gender equity and safe mother hood.

Methodology: Current statistic of domestic violence is supported with recent literature and integrated with Sexual and reproductive and associative health rights. In Pakistan 70 to 90% of women are subject of domestic violence including honor killing, spousal abuse, acid burn and rape (Malik, 2014). Sexual and reproductive health may define as state of physical, mental, emotional and social wellbeing in context of sexuality and reproduction. Sexual and reproductive health rights are the basic rights of couple or an individual to have privacy, equality and security; for freely and responsibly decision of spacing, number and timing of the children to attain optimum sexual and reproductive health. Health illiteracy and religio-cultural factors are main hindrance in participation of Pakistan women in decision making of number and spacing of children. Secondly institutional access to the people is not enough to eradicate self or public stigmatization. Health literacy means to make aware a woman about her sexual and reproductive life. In society of Pakistan domestic violence is consider as private matter not as the social concern. Which enhance mortality infant and mortality under five rates (MIR & MU5R).

Conclusion: Despite of legislation women empowerment is not attained in Pakistan due to rejection of religious parties. Due to incongruence with stake holders in policy making it is very difficult in its implementation. Secondly it is time to make efforts for health literacy in women in collaboration community centers and nongovernmental organization.

Clinical Implication: Domestic violence has its various types one of important type violence is to keep women unaware of her sexual and reproductive associative right. Considering women as birth machinery is lead threat of safe motherhood.

Keywords: SRHR, Voilence, Empowerment

18.6 FREQUENCY OF IUGR AT SECONDARY CARE HOSPITAL KARACHI

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Introduction: Intrauterine growth restriction (IUGR) is the second leading contributor to the prevailing perinatal mortality and morbidity. The prevention of IUGR is a public health priority in many developing countries. The objective of the study was to determine the frequency of IUGR among births taken place at secondary care hospital of Aga Khan University Hospital Karachi (AKUH).

Methodology: This was a retrospective study included all the IUGR neonates (defined as babies with abnormal Doppler ultrasound and weight less than 10%tile for gestational Age).Data including demographic information gestational age, birth weight, gender, mode of delivery, Apgar score, maternal age, parity, outcome of IUGR babies, Amniotic fluid index and Umbilical artery blood flow was retrieved from patient medical records.

Results: The frequency of IUGR was 1.31%. Mean birth weight was 2 kg, Term gestation were 58.8% while 41.2% were preterm. Maternal age ranged between 17 – 40 years. Maternal anemia was most common contributing factor 31.2%, followed by GDM and PIH 12.2%

each. Oligohydromnios was seen in 7.8% and reduced End diastolic flow seen in 97.8% of cases. 64.4% of IUGR babies were delivered through caesarian section and 35.6% were delivered vaginally. Hyperbilirubinemia was the most common short term neonatal outcome of IUGR 66% followed by polycythemia 11.3%. *Conclusion:* we have found low number of IUGR, good prenatal care, better management and close surveillance of pregnancy can reduce IUGR deliveries, perinatal morbidity and mortality..

Keywords: FREQUENCY, intrauterine fetal growth restriction, DOPPLER ULTRASOUND

18.7

CULTURAL PRACTICES OF REARING PRETERM INFANTS: A QUALITATIVE STUDY IN A TERTIARY CARE HOSPITAL IN KARACHI, PAKISTAN

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Introduction: Mothers from different culture have different experiences in rearing their preterm babies. There is scarcity of data in appraising the cultural practices and challenges of rearing a preterm infant and how culture influences Pakistani mothers' nurturing their preterm infants. This paper presents the cultural practices of feeding and hygiene of preterm infants in Pakistan. Qualitative descriptive-exploratory design was utilized in a largest government tertiary care hospital in Karachi, Pakistan.

Methods: Purposive sampling was utilized to recruit 17 mothers, who met inclusion criteria. The semi-structured interview was used to

collect the data, which lasted for approximately 45-60 minutes. Thematic analysis was conducted to analyze the key findings of the study. Welcoming newborn with 'honey' and herbal remedies were reported as a common ritual among mothers.

Results: Findings revealed differences in the time period of initial bath given to the preterm, ranges from 3 days to 1 month. These custom variations of rearing preterm have its own meaning in the prescribed culture; however, these customs are the insights to explore more on its effects on infants' health.

Conclusion: This study provides useful insights into several practices of cultures which serve as the determinants of infants' nutrition and health status.

Keywords: Feeding, Preterm, Qualitative

18.8

PILOT TESTING OF LOT QUALITY ASSURANCE SAMPLING METHODOLOGY TO MONITOR COVERAGE OF BIRTH REGISTRY IN THATTA

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Background: Lot quality assurance sampling (LQAs) is a special type of cross-sectional study used to classify prevalence of exposure or outcomes. We used LQAs as a method of monitoring coverage of birth registry in Thatta.

Objectives: The objective of the study was to assess coverage of Supervision Area (SA) by the community coordinators for pregnancy enrollment, delivery information or 42-day visit after delivery and assess data quality by asking for; Hemoglobin test, weight of baby taken

within 48 hours of birth and by measuring height.

Materials and Methods: This supervisory survey was conducted at 14 clusters of Thatta district. Data were collected using a small questionnaire especially designed for the purpose. To assess quality of data, observers measured height of the mother. Data collected during LQAs survey were compared with the Birth registry (BR) data using BR ID assigned to women during routine data collection. We used a sample size of 19 women per supervision area with predefined decision rule of 16. For example, of 19 interviews in a SA, if 16 women said that community coordinator visited a household in past 30 days than that area will be classified as adequate coverage ($\geq 95\%$). The sample was selected using two-stage sampling strategy 1) Identification of interview location (Villages) and 2) identification of households. The data were entered in MS Excel and analyzed using SPSS version 20.0.

Results: Overall, 246 households were approached, of these 228 (19 per supervision area) were selected from each 14 clusters). Two low-performing areas were identified according to our decision rule. Overall weighted coverage in 12 clusters was 87% (95% CI: 83-91%). For data validation, the agreement between observed versus BR data for hemoglobin was 0.608 ($P < 0.001$), correct information on pregnancy outcome 100% and weight of baby taken within 48 hours was 0.644 ($P < 0.001$). We also compared height taken by observer versus BR data and found that the variation between measurements is explained by linear regression model was 89.7% and Bland Altman plot showed good agreement.

Conclusion: We concluded that LQAs is a simple and powerful study design that empowers local supervisor to take an informed decision for resource allocation.

Keywords: LQAs, Coverage, Birth registry

18.9 PREDICTORS OF MORTALITY AMONG SEVEN SIGNS OF SEPSIS IN YOUNG INFANTS

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Objective: To determine predictors of mortality among seven signs of WHO defined severe infection in young infants. **Methods:** This study was conducted in 2 semi urban and one urban slums of Karachi from Sep 2003 to Aug 2004. Young infants aged 0-59 days old presented with clinical signs suggestive of an illness were enrolled. After diagnosis the physician decides whether infant need hospital referral or center based management. Sick infants were referred to tertiary care hospital. The infants were followed on day 8, 14, 21 and 1 month. Multiple logistic regression was used to see association of clinical signs with mortality.

Findings: A total of 3011 birth recorded during study period and of them 2950 young infants were enrolled. Of 2950 enrolled infants 94 (3.2%) were died on day 7 follow-up. Univariate analysis showed that feeding difficulty (2.309, 95%CI 1.206-4.421), temperature ≤ 35.5 (3.93, 95%CI 1.831-8.446), respiratory rate (RR) ≥ 60 (3.686, 95%CI 2.412-5.634) and convulsion (4.681, 95%CI 1.973-11.315) are predictors of mortality. After multivariable analysis temperature ≤ 35.5 (3.248, 95%CI 1.350-7.815), RR ≥ 60 (3.675, 95%CI 2.315-5.835) and convulsion (3.354, 95%CI 1.314-8.563) were independent predictors of mortality in young infants adjusted for age and other signs with sensitivity of 68% and specificity of 74%.

Conclusion: In conclusion amongst seven signs of sepsis, defined by WHO, fast breathing, low temperature and convulsions are independent predictors of mortality in young infants.

Keywords: Young infants, predictors, Mortality

18.10

MATERNAL AND NEWBORN OUTCOMES IN PAKISTAN COMPARED TO OTHER LOW AND MIDDLE INCOME COUNTRIES IN THE GLOBAL NETWORK'S MATERNAL NEWBORN HEALTH REGISTRY: AN ACTIVE, COMMUNITY-BASED, PREGNANCY SURVEILLANCE MECHANISM

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Background: Despite global improvements in maternal and newborn health (MNH), maternal, fetal and newborn mortality rates in Pakistan remain stagnant. Using data from the Global Network's Maternal Newborn Health Registry (MNHR) the objective of this study is to compare the rates of maternal mortality, stillbirth and newborn mortality and levels of putative risk factors between the Pakistani site and those in other countries.

Methods: Using data collected through a multi-site, prospective, ongoing, active surveillance system to track pregnancies and births in communities in discrete geographical areas in seven sites across six countries including Pakistan, India, Kenya, Zambia, Guatemala and Argentina from 2010 to 2013, the study compared MNH outcomes and risk factors. The MNHR captures more than 60,000 deliveries annually across all sites with over 10,000 of them in Thatta, Pakistan.

Results: The Pakistan site had a maternal mortality ratio almost three times that of the other sites (313/100,000 vs 116/100,000). Stillbirth (56.5 vs 22.9/1000 births), neonatal mortality (50.0 vs 20.7/1000 livebirths) and perinatal mortality rates (95.2/1000 vs 39.0/1000 births) in Thatta, Pakistan were more than twice those of the other sites. The Pakistani site is the only one in the Global Network where maternal mortality increased (from 231/100,000 to 353/100,000) over the study period and fetal and neonatal outcomes remained stagnant. The Pakistan site lags behind other sites in maternal education, high parity, and appropriate antenatal and postnatal care. However, facility delivery and skilled birth attendance rates were less prominently different between the Pakistani site and other sites, with the exception of India. The difference in the fetal and neonatal outcomes between the Pakistani site and the other sites was most pronounced amongst normal birth weight babies.

Conclusions: The increase in maternal mortality and the stagnation of fetal and neonatal outcomes from 2010 to 2013 indicates that current levels of antenatal and newborn care interventions in Thatta, Pakistan are insufficient to protect against poor maternal and neonatal outcomes. Delivery care in the Pakistani site, while appearing quantitatively equivalent to the care in sites in Africa, is less effective in saving the lives of women and their newborns. By the metrics available from this study, the quality of obstetric and neonatal care in the site in Pakistan is poor. Trial registration The study is registered at clinicaltrials.gov [NCT01073475].
Keywords: Pakistan, maternal mortality, stillbirth, neonatal mortality

Keywords: maternal mortality, stillbirth, neonatal mortality

18.11 POSTPARTUM CONTRACEPTIVE USE AND UNMET NEED FOR FAMILY PLANNING IN FIVE LOW-INCOME COUNTRIES

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Background: During the post-partum period, most women wish to delay or prevent future pregnancies. Despite this, the unmet need for family planning up to a year after delivery is higher than at any other time. This study aims to assess fertility intention, contraceptive usage and unmet need for family planning amongst women who are six weeks postpartum, as well as to identify those at greatest risk of having an unmet need for family planning during this period.

Methods: Using the NICHD Global Network for Women's and Children's Health Research's multi-site, prospective, ongoing, active surveillance system to track pregnancies and births in 100 rural geographic clusters in 5 countries (India, Pakistan, Zambia, Kenya and Guatemala), we assessed fertility intention and contraceptive usage at day 42 post-partum.

Results: We gathered data on 36,687 women in the post-partum period. Less than 5% of these women wished to have another pregnancy within the year. Despite this, rates of modern contraceptive usage varied widely and unmet need ranged from 25% to 96%. Even amongst users of modern contraceptives, the uptake of the most effective long-acting reversible contraceptives (intrauterine devices) was low. Women of age less than 20 years, parity of two or less, limited education and those who deliver at home were at highest risk for having unmet need.

Conclusions: Six weeks postpartum, almost all women wish to delay or prevent a future

pregnancy. Even in sites where early contraceptive adoption is common, there is substantial unmet need for family planning. This is consistently highest amongst women below the age of 20 years. Interventions aimed at increasing the adoption of effective contraceptive methods are urgently needed in the majority of sites in order to reduce unmet need and to improve both maternal and infant outcomes, especially amongst young women. Study registration [Clinicaltrials.gov \(ID# NCT01073475\)](https://clinicaltrials.gov/ct2/show/study/NCT01073475) Keywords: Contraception, low-middle income countries, obstetric care, family planning

Keywords: Contraception, low-middle income countries, obstetric care

18.14 LOST TO FOLLOW-UP AMONG PREGNANT WOMEN IN A MULTI-SITE COMMUNITY BASED MATERNAL AND NEWBORN HEALTH REGISTRY: A PROSPECTIVE STUDY

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Background: It is important when conducting epidemiologic studies to closely monitor lost to follow up (LTFU) rates. A high LTFU rate may lead to incomplete study results which in turn can introduce bias to the trial or study, threatening the validity of the findings. There is scarce information on LTFU in prospective community-based perinatal epidemiological studies. This paper reports the rates of LTFU, describes socio-demographic characteristics, and pregnancy/delivery outcomes of mothers LTFU in a large community-based pregnancy registry study.

Methods: Data were from a prospective, population-based observational study of the Global Network for Women's and Children's Health Research Maternal Newborn Health Registry (MNHR). This is a multi-centre, international study in which pregnant women were enrolled in mid-pregnancy, followed through parturition and 42 days post-delivery. Risk for LTFU was calculated within a 95% CI.

Results: A total of 282,626 subjects were enrolled in this study, of which 4,893 were lost to follow-up. Overall, there was a 1.7% LTFU to follow up rate. Factors associated with a higher LTFU included mothers who did not know their last menstrual period (RR 2.2, 95% CI 1.1, 4.4), maternal age of < 20 years (RR 1.2, 95% CI 1.1, 1.3), women with no formal education (RR 1.2, 95% CI 1.1, 1.4), and attending a government clinic for antenatal care (RR 2.0, 95% CI 1.4, 2.8). Post-natal factors associated with a higher LTFU rate included a newborn with feeding problems (RR 1.6, 94% CI 1.2, 2.2).

Conclusions: The LTFU rate in this community-based registry was low (1.7%). Maternal age, maternal level of education, pregnancy status at enrollment and using a government facility for ANC are factors associated with being LTFU. Strategies to ensure representation and high retention in community studies are important to informing progress toward public health goals. Trial registration Registration at the Clinicaltrials.gov (ID# NCT01073475).

Keywords: Community based registry, maternal and newborn registry, maternal and newborn registry

18.15 STILLBIRTH RATES IN LOW-MIDDLE INCOME COUNTRIES 2010 - 2013: A POPULATION-BASED, MULTI-COUNTRY STUDY FROM THE GLOBAL NETWORK

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Background: Stillbirth rates remain nearly ten times higher in low-middle income countries (LMIC) than high income countries. In LMIC, where nearly 98% of stillbirths worldwide occur, few population-based studies have documented characteristics or care for mothers with stillbirths. Non-macerated stillbirths, those occurring around delivery, are generally considered preventable with appropriate obstetric care.

Methods: We undertook a prospective, population-based observational study of all pregnant women in defined geographic areas across 7 sites in low-resource settings (Kenya, Zambia, India, Pakistan, Guatemala and Argentina). Staff collected demographic and health care characteristics with outcomes obtained at delivery.

Results: From 2010 through 2013, 269,614 enrolled women had 272,089 births, including 7,865 stillbirths. The overall stillbirth rate was 28.9/1000 births, ranging from 13.6/1000 births in Argentina to 56.5/1000 births in Pakistan. Stillbirth rates were stable or declined in 6 of the 7 sites from 2010-2013, only increasing in Pakistan. Less educated, older and women with less access to antenatal care were at increased risk of stillbirth. Furthermore, women not delivered by a skilled attendant were more likely to have a stillbirth (RR 2.8, 95% CI 2.2, 3.5). Compared to live births, stillbirths were more likely to be preterm (RR 12.4, 95% CI 11.2, 13.6). Infants with major congenital anomalies

were at increased risk of stillbirth (RR 9.1, 95% CI 7.3, 11.4), as were multiple gestations (RR 2.8, 95% CI 2.4, 3.2) and breech (RR 3.0, 95% CI 2.6, 3.5). Altogether, 67.4% of the stillbirths were non-macerated. 7.6% of women with stillbirths had cesarean sections, with obstructed labor the primary indication (36.9%).

Conclusions: Stillbirth rates were high, but with reductions in most sites during the study period. Disadvantaged women, those with less antenatal care and those delivered without a skilled birth attendant were at increased risk of delivering a stillbirth. More than two-thirds of all stillbirths were non-macerated, suggesting potentially preventable stillbirth. Additionally, 8% of women with stillbirths were delivered by cesarean section. The relatively high rate of cesarean section among those with stillbirths suggested that this care was too late or not of quality to prevent the stillbirth; however, further research is needed to evaluate the quality of obstetric care, including cesarean section, on stillbirth in these low resource settings. Study registration Clinicaltrials.gov (ID# NCT01073475) Keywords: Stillbirth, low-middle income countries, obstetric care

Keywords: Stillbirth, low-middle income countries, obstetric care

18.16

A PROSPECTIVE POPULATION-BASED STUDY OF MATERNAL, FETAL, AND NEONATAL OUTCOMES IN THE SETTING OF PROLONGED LABOR, OBSTRUCTED LABOR AND FAILURE TO PROGRESS IN LOW- AND MIDDLE-INCOME COUNTRIES

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Background: This population-based study sought to quantify maternal, fetal, and neonatal morbidity and mortality in low- and middle-income countries associated with obstructed labor, prolonged labor and failure to progress (OL/PL/FTP). *Methods* A prospective, population-based observational study of pregnancy outcomes was performed at seven sites in Argentina, Guatemala, India (2 sites, Belgaum and Nagpur), Kenya, Pakistan and Zambia. Women were enrolled in pregnancy and delivery and 6-week follow-up obtained to evaluate rates of OL/PL/FTP and outcomes resulting from OL/PL/FTP, including: maternal and delivery characteristics, maternal and neonatal morbidity and mortality and stillbirth. *Results:* Between 2010 and 2013, 266,723 of 267,270 records (99.8%) included data on OL/PL/FTP with an overall rate of 110.4/1000 deliveries that ranged from 41.6 in Zambia to 200.1 in Pakistan. OL/PL/FTP was more common in women aged 3500g, and women with a BMI >25 (RR 1.4, 95% CI 1.3 – 1.5), with the suggestion of OL/PL/FTP being less common in preterm deliveries. Protective characteristics included parity of ≥ 3 , having an infant < 28 days (RR 1.9, 95% CI 1.6 – 2.1), or a neonatal infection (RR 1.2, 95% CI 1.1 – 1.3). As compared to operative vaginal delivery and cesarean section (CS), women experiencing OL/PL/FTP who gave birth vaginally were more likely to become infected, to have an infected neonate, to hemorrhage in the antepartum and postpartum period, and to die, have a stillbirth, or have a neonatal demise. Women with OL/PL/FTP were far more likely to deliver in a facility and be attended by a physician or other skilled provider than women without this diagnosis.

Conclusions: Women with OL/PL/FTP in the communities studied were more likely to be primiparous, younger than age 20, overweight, and of higher education, with an infant with

birthweight of >3500g. Women with this diagnosis were more likely to experience a maternal, fetal, or neonatal death, antepartum and postpartum hemorrhage, and maternal and neonatal infection. They were also more likely to deliver in a facility with a skilled provider. CS may decrease the risk of poor outcomes (as in the case of antepartum hemorrhage), but unassisted vaginal delivery exacerbates all of the maternal, fetal, and neonatal outcomes evaluated in the setting of OL/PL/FTP.

Keywords: Obstructed Labor, Maternal Mortality, Maternal Morbidity

18.18 PREVALENCE AND DETERMINANTS OF UNINTENDED PREGNANCY: SYSTEMATIC REVIEW

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Background: Unplanned pregnancy is one of the leading causes of maternal mortality and morbidity in the world. The objective of this systematic review was to synthesize the findings of various studies regarding prevalence and determinates of unintended pregnancy. Data sources: A range of electronic databases was searched for studies conducted in developing countries and published between 1990 and 2015. English-language publications were searched using relevant keywords, and reference lists were hand searched.

Review methods: A systematic review was carried out for all the quantitative studies which met the inclusion criteria. The quality of selected studies was assessed using Newcastle–Ottawa Scale. Results: Twenty-two papers were

included in the review. Average prevalence of unintended pregnancy was estimated to be 35% ranging from 13% to 82%. The predictors of unintended pregnancy were found to be, socio-demographic factors include women's age, women's education, parity, birth order and interval, previous pregnancy intention, age at the time of marriage, socioeconomic status, marital status, religion, caste, and ethnicity.

Conclusion: Main correlates were found to be age, parity, educational and economic status. This means that undertaking outreach in poor countries might be helpful in fulfilling the needs of Family planning for these women. Furthermore, community-based distribution of family planning methods or counseling should be targeted to the illiterate older aged women of reproductive age with poor socioeconomic status.

Keywords: unintended pregnancy, developing countries, prevalence

18.19 DETERMINANTS OF UNINTENDED PREGNANCY AMONG REPRODUCTIVE AGED WOMEN IN DEVELOPING COUNTRIES: A NARRATIVE REVIEW

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Introduction: Current population of the world is 7 billion and developing countries account for 97% of this growth. Approximately 210 million pregnancies occur worldwide annually and 75 to 80 million are reported to be unintended. Multiple factors can determine the occurrence of unintended pregnancy which needs to be assessed to design some interventions to reduce the occurrence of unintended pregnancies.

Objective: The objective of this review was to assess the determinants of unintended pregnancy among reproductive aged women in developing countries.

Methodology: Literature review was carried out by retrieving articles from various data bases like Pub med, Google scholar, Science Direct and by using mesh terms like ‘unintended pregnancy’, ‘contraception ‘ and ‘determinants of unintended pregnancy’. Types of studies were descriptive studies, and various reports like population council report, Demographic health survey reports, The United Nations Children's Fund statistics and World Health Organization report were also reviewed. Findings: The most common determinants of unintended pregnancy, highlighted by literature are reported under the headings of socio-demographic, socio-economic and sociocultural factors, fertility related factors, factors related to family planning methods and access related factors.

Conclusion: Multiple factors play a role in determining the unintended pregnancy, which might have significant policy implications. Considering these factors, programs can be designed that can support couples to have the desirable number of children without ending up with unintended pregnancies.

Keywords: unintended pregnancy, Contraception,, Determinants

18.20 EFFECTIVENESS OF PCV-10 VACCINE AGAINST VACCINE TYPE IPD IN PAKISTAN: IMPACT ASSESSMENT AFTER INTRODUCTION OF PCV-10 IN ROUTINE IMMUNIZATION PROGRAMME

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Background And Objective: Pakistan is the first country in South Asia to introduce Pneumococcal Conjugate Vaccine (PCV) in its National EPI programme. Impact assessment of this programme is essential for its continuity and to guide other countries in the region regarding introduction of PCV in their EPI programmes. The primary objective of this study is to assess PCV-10 effectiveness on invasive pneumococcal disease (IPD) due to vaccine serotypes of pneumococcus.

Methods: A matched case-control study is enrolling children eligible to receive PCV-10 vaccine who present with meningitis and/or radiologically-confirmed pneumonia at 15 hospitals serving low and middle income population in Sindh province of Pakistan. In order to detect IPD proportion of these cases, *lyt A* gene is tested by PCR in blood (for radiologically proven pneumonia) and CSF (for purulent meningitis). The proportion of IPD due to vaccine type serotypes is determined through serial multiplex PCR. Five controls are enrolled for each case of vaccine type IPD, matched by age, catchment and season.

Results: Enrollment started in July 2013. Of the required sample size of 28 vaccine type IPD cases, 18 have been enrolled so far. This includes 11 cases of meningitis and 7 cases of pneumonia. 90 controls have been enrolled for these cases. None of the VT IPD cases received

even a single dose of PCV-10, while 32% of the controls have received one or more doses of PCV-10.

Conclusions: The study is ongoing but the data so far points towards high effectiveness of PCV-10 vaccine against vaccine type IPD in children in Pakistan.

Keywords: Pneumococcal Conjugate Vaccine, Effectiveness, Invasive pneumococcal disease

18.21

IMPACT OF PNEUMOCOCCAL CONJUGATE VACCINE (PCV-10) ON PNEUMOCOCCAL NASOPHARYNGEAL CARRIAGE IN CHILDREN IN PAKISTAN: RESULTS OF SERIAL SURVEYS PRE AND POST INTRODUCTION OF VACCINE IN ROUTINE IMMUNIZATION PROGRAMME

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Background and Aim: Pakistan introduced PCV-10 vaccine in EPI programme in April 2013 in Sindh province. We hypothesized that with increase in coverage of PCV-10, there will be decrease in nasopharyngeal carriage of pneumococcal serotypes which are included in PCV-10. Aim of the study was to determine if there is serial decline in carriage among children of age less than five years, after introduction of PCV-10 in routine immunization programme.

Methods: Yearly cross sectional surveys were planned over the past four years, one before and three after the introduction of PCV-10 in EPI programme. Nasopharyngeal swabs were obtained from representative randomly sampled healthy children in one urban and one rural district of Sindh. Swabs were collected in STGG

media and Pneumococci were identified through routine microbiology. Serotypes were identified through real-time sequential multiplex PCR using Centre of Disease Control (CDC) scheme.

Results: In first two rounds, each year 440 children of age 3-12 months were enrolled from rural and urban districts and additional 220 children of age 1-5 years were enrolled from urban district only. In rural district, PCV-10 serotypes were 24% and 22% in first and second round respectively. While in urban district, these were 26% and 29%. Most common PCV-10 serotypes in rural district included 23F, 14, 9V and in urban included 6B, 19F and 23F. Results of subsequent rounds are being analyzed.

Conclusion: There has been no significant change in nasopharyngeal carriage of PCV-10 serotypes after introduction of vaccine. Data from subsequent rounds may provide better understanding about impact of PCV-10 on nasopharyngeal carriage of serotypes.

Keywords: Pneumococcal Conjugate Vaccine, nasopharyngeal carriage, Pakistan

18.23

EXPLORING PERCEPTION AND PRACTICES OF MOTHERS REGARDING EXCLUSIVE BREAST FEEDING

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Introduction / Objectives: The World Health Organization recommends exclusive breast feeding (EBF) for the first 6 months. EBF provides for healthy growth and immunity for infant. Unfortunately, EBF rates are low globally. National nutrition survey Pakistan (2011), reports only 9.6% EBF rate in Sindh. The purpose of this research was to explore attitudes

and practices of mothers towards EBF and identify factors that hinder EBF.

Methods: This was a qualitative, cross sectional study conducted in Karachi. Participants were 10 mothers (6 housewives and 4 employed) who have given birth in the last two years. Semi structured IDI guide was used to collect data. Each IDI was of 30-40 minutes and was audio taped. Interviews were transcribed on MS-word and entered in NVivo. *Result :* Interviews revealed that all mothers were aware of the benefits of EBF, 8 mothers had EBF till 6 months. These mothers identified that support of close family members an important motivational element for EBF. . Data shows 2 mothers stopped EBF because they perceived diminished feed. . Other problems identified were body pains and cracked nipples. . *Conclusion and Recommendations:* This study revealed that no major factors hinder EBF. It is recommended that perceived hindrances to EBF should be explored on large scale and mothers should be educated regarding these. *Key words :* Exclusive Breast Feeding , perceptions, hindrances.

Keywords: Exclusive Breast Feeding, perceptions, hindrances

18.25 PREVENTION OF TYPE II DIABETES MELLITUS IN WOMEN WITH GESTATIONAL DIABETES MELLITUS IN KARACHI, PAKISTAN

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Introduction: Women who develop diabetes during pregnancy (Gestational Diabetes Mellitus- GDM) increase their risk of

developing Type II diabetes mellitus post-partum by 70%. In Pakistan, it is estimated that 12.8 million people will have diabetes by 2035 thus increasing the disease burden and health care costs. Some of the risk factors for Type II diabetes mellitus such as diet and physical activity are modifiable risk factors requiring a complete lifestyle change.

Methods: The overall aim of this study is to establish acceptability and feasibility of a home based lifestyle intervention on women who developed GDM. All patients who had GDM during their pregnancy and delivered at the Aga Khan Hospital or Jinnah Post Graduate Medical Center are being enrolled for the study till a sample size of 200 women has been reached. Once enrolled, women will be randomized into the intervention and control arm. This lifestyle intervention programme will focus on increasing knowledge, skills and self-efficacy of women who had GDM in uptaking physical activity, adhering to dietary advice and in losing or maintaining their weight through a randomized clinical trial.

Results and Conclusion: The primary outcomes will be change in physical activity, body weight, waist circumference, % fat, blood glucose levels, blood pressure and quality of life. Secondary outcomes will include overall acceptance and adherence to the intervention by eligible participants and adoption of healthier dietary practices.

Keywords: Gestational Diabetes Mellitus (GDM), Lifestyle Intervention, Type II Diabetes Mellitus

18.26
RESPIRATORY RATE NORMS IN A LARGE
COHORT OF NEWBORNS IN A
COMMUNITY IN KARACHI, PAKISTAN

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Introduction: In children, respiratory rate is used as a marker for the severity of respiratory infections and sepsis. Cutoffs for prediction of severe infections endorsed by WHO exist. However, it has been argued that these cut offs overestimate the prevalence and hence cause an increased amount of referrals to an already overwhelmed health care system. Previous studies have concluded that respiratory rates among children vary widely, so a single cut off value may not be applicable to all children. Here we analyze respiratory rate data from a large cohort of newborns and young infants from the Aetiology of Neonatal Infection in South Asia (ANISA) Study in Karachi, Pakistan.

Methods: We assessed respiratory rates on around 13,000 newborns at Day 0, 2, 6 and then weekly thereafter till day 60 of life. Trained Community Health Workers (CHW's) performed the assessments and referred the children with a respiratory rate higher than the accepted WHO cutoff to a tertiary care hospital. We constructed 1st, 5th, 50th, 95th and 99th centiles for respiratory rate for the age range of 0 to 59 days.

Results: It was observed that the centiles were wider in the first week of life and got narrower later on indicating greater variation in early days. The 99th centile was almost always above the WHO cutoff of 60 breaths per minute across the age range.

Conclusion: Constructing respiratory rate norms based on huge cohort data sets is a right step

towards addressing the deficiencies of existing cutoffs.

Keywords: Respiratory Rate, Neonates, Sepsis

18.27
CLINICO-EPIDEMIOLOGICAL PROFILE
AND PREDICTORS OF SEVERE ILLNESS
IN FIRST WEEK OF LIFE IN A LOW
INCOME COMMUNITY IN KARACHI,
PAKISTAN

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Introduction: Infections are a major cause of neonatal and young infant mortality. WHO's guidelines of early identification and prompt referral of young infants in urgent need care were developed on the basis of a multi-center young infant clinical signs study (YICSS). We present here results from the Pakistan site which was the only community site and contributed the largest sample size to YICSS.

Methods: All children aged 0-7 days presenting to a primary health center (PHC) in each of the field sites were first evaluated by Study Person A (LHV), who recorded the signs and symptoms on a study form, followed by detailed evaluation by Study Person B (Pediatrician) who took a proper history and examination, made a diagnosis, and determined the need for referral to a tertiary care center.

Results: There were 1633 children aged 0 to 7 days who presented to the PHC, a large number of them presenting with umbilical cord discharge (29.2%), excessive crying (11.1%) and fever (9.4%). In this age group, history of difficult feeding (OR=10.6), lethargy (OR=22.3), Temperature $\geq 37.5^{\circ}\text{C}$ (OR=5.8) and

Respiratory rate $\geq 60/\text{min}$ (OR=3.6) emerged as the most important signs and symptoms for predicting the need for hospital admission.

Conclusion: Use of simple clinical signs as a predictor for severe illness is effective, as well as essential at the community level.

Development of a specific algorithm for the first week of life will be beneficial in saving lives and reducing neonatal mortality.

Keywords: Young infants, hospital admission, clinical signs

18.28

NEONATAL OUTCOME IN PATIENT UNDERGOING CESAREAN SECTION DUE TO NON RE ASSURING CTG

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Abstract Objective: The objective of this study was to determine the neonatal outcome in women undergoing cesarean section due to non-reassuring cardio-toco-graphy (CTG).

BACKGROUND AND Introduction: CTG is most commonly non-invasive test in obstetrics, but using this as a sole test leads to unnecessary intervention like caesarean. Most of the time the patient with non-reactive CTG leading to emergency caesarean section, baby born with Good APGAR score.

Methodology: This cross sectional study was carried out in Department of Gynecology & Obstetrics at Liaquat University of Medical & Health Sciences (LUMH&S) Hyderabad, from October 2012 to August 2013. Complete clinical examination of the patient was done. Systemic review was also done to see any co-morbidity. All patients underwent for base line like CBC and specific investigations especially ultrasound

pelvis. Inclusion criteria were all patients primigravida with gestational age > 32 weeks and maternal age 20 -30 years with non-reassuring CTG. Exclusion criteria were history of previous caesarean section operation, less than 32 weeks pregnancy, any other obstetrical indication for caesarean section (except non-reactive CTG) like cephalo-pelvic disproportion, previous caesarean section and severe intra-partum hemorrhage. Results were prepared with help of tables and graphs. Data was analyzed through SPSS software.

Results: Total patients of this research were 112. Wide variation of maternal age ranging from a minimum of 20-30 years with mean age was 26 ± 2.1 years. Gestational age was > 37 weeks, ranging from a minimum of 37-42 weeks. The mean age was 37 ± 2.4 weeks. Mostly patients were observed 37-38 wks in 52.67%, 39-40 wks in 32.14% and 41-42 wks in 15.17%. Apgar score was >7 in 61.60% cases and < 7 apgar score in 38.39% cases which is statistically not significant.

Conclusion: It is concluded that APGAR score was >7 in 61.60% cases and <7 apgar score in 38.39% cases which is statistically not significant. CTG is a useful and indispensable adjunct to monitor the condition of endangered fetus. Reduce the incidence of false positive findings that may result in increased incidence of unnecessary intervention particularly caesarean section CTG should not be used as sole test CTG finding should be correlated with color of liquor, if facility is present scalp PH should be done.

Keywords: Caesarean Section, Non Re Assuring Ctg, Cardio-Toco-Graphy

18.29

TO EVALUATE THE GASTRO INTESTINAL EFFECTS WITH EARLY FEEDING ARE BETTER THAN DELAYED FEEDING FOLLOWING CESAREAN DELIVERY

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Abstract Introduction: The steadily increasing global rates of cesarean section have become one of most debated topics in maternity care. Traditionally the women who had a cesarean section had solid food withheld for first 24 hours in the belief that this would prevent gastro intestinal complication. Most cesarean deliveries are performed under regional Anesthesia, Requiring little intestinal manipulation and short operative time. This study help to know GI effect on early verses delayed feeding after uncomplicated cesarean section and the better practice as well as advocated in future.

Objective: To evaluate the gastro intestinal effects with early feeding are better than delayed feeding following cesarean delivery. Setting: Obstetrics and Gynaecological Unit-II Liaquat University Hospital, Hyderabad. Duration:- One year from ...2011.....to.....

Study Design: Randomized controlled clinical trial. Data collection procedure: A total of 352 women uncomplicated emergency or elective cesarean section under spinal anesthesia was included in this study. Consenting women were randomly assigned into two groups' i.e. early feeding group and delayed feeding group. Any complaint about anorexia, nausea, vomiting, abdominal discomfort and abdominal distention on physical examination was noted.

Results: Rate of ileus, anorexia was significantly low in early feeding groups as compare to delayed feeding group while rate of vomiting and abdominal distension were not significant

between groups. Average time of first bowel sound and time of passage of flatus and passage of stool were significant between groups.

Conclusion: In conclusion, early feeding fastens the recovery and complication rate.

Keywords: Gastro Intestinal Complication, Cesarean Delivery, Spinal Anesthesia

18.30

TO STUDY THE COMPARATIVE EFFECTS AND SAFETY OF THE INTRACERVICAL FOLEY'S CATHETER WITH PROSTAGLANDIN PESSARY FOR CERVICAL REPINING

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Objective: The goal of obstetrics is a pregnancy that results in healthy infant and a healthy minimally traumatized mother. Pre induction cervical repining and induction of labor has become an established part of modern obstetric practice.

Methods: Prospective The study was conducted at department of obstetrics and gynaecology-II of Liaquat University of Medical and Health Sciences, Hospital Hyderabad. Duration of study was one year from 14th February 2011 to 13th February 2012.

Results: During the study period 100 patient were selected for cervical repining and out of 100 fifty (50) patients had Foley's catheter. and 50 had Prostaglandin E2 pessary instillation. Commonest indication was pregnancy induced Hypertension, followed by prolonged pregnancy, IUGR. Thus from out of the total 50 primigravida showed improvement in Bishops score after 6 hours was almost similar in both Foley's catheter and PGE2 pessary and out of total 48 multigravidas, showed improvements in Bishop Score was more in Foley's catheter

grouped (50% in PGE2 as compared to 75% in Foley's catheter P Value 0.702). The analysis of mean duration of labor showed that there was no statistically significant difference between these two groups. Two babies had an APGAR SCORE 4/10 at end of 1 min and 7/10 at end of 5min in PGE2 groups whereas all babies in Foley's Catheter Group had an APGAR SCORE of 9/10. Indication for LSCS were 4 cases of failed induction in PGE2 group as compared to cervical Foley's catheter groups in which 2 cases had failed induction.

Conclusion: Use of prostaglandin E2 for pre induction cervical repining is effective, safe, and easily acceptable method with lesser side effect profile.

Keywords: Prostaglandin E2, foley's catheter, induction

18.31

EFFECT OF MATERNAL WEIGHT ON SUCCESS OF VBAC

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Background: Cesarean section is the commonest obstetrical procedure, associated with increase in maternal morbidity; the cesarean section rate is steadily on the rise in our country which can give rise to a number of complications.

Objective: To determine the effect of maternal weight on success of VBAC **STUDY DESIGN:** Cross sectional study **PERIOD:** May 2009 to October 2009. **SETTING:** Liaquat university hospital, Hyderabad. *Material And Methods:* a total of 96 women which fulfilled the selection criteria were included in the study.

Results: The women included in the study had a mean age of SD (range), 29.94+4.41 successful

vaginal birth was observed in 57(59.5%) women and 39(40.6%) had an emergency repeat cesarean delivery. Body mass index was noted among all the women, 23(24.0%) were obese and 73 (76.0%) were non-obese. Out of 23(24.0), 7(30.4%) had successful VBAC and 16(69.6%) women had successful trial of labor and 23(31.5%) delivered by repeat Caesarean delivery. (P.0.002)

Conclusions: Obesity is associated with decreased chances of successful VBAC, making it a risky option for obese women.

Keywords: obesity, VBAC, caeserean section

18.32

VAGINAL BIRTH AFTER CAESAREAN SECTION; FACTORS PREDICTING SUCCESS

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Background: Cesarean section is the commonest obstetrical procedure, associated with increase in maternal morbidity; the cesarean section rate is steadily on the rise in our country which can give rise to a number of complications.

OBJECTIVE: To determine the factors associated with successful vaginal delivery after previous cesarean section. **STUDY DESIGN:** Cross sectional study **PERIOD:** May 2009 to October 2009. **SETTING:** Liaquat university hospital, Hyderabad.

Material And Methods: a total of 96 women which fulfilled the selection criteria were included in the study.

Results: The women included in the study had a mean age of+ SD(range),29.94+successful vaginal birth was observed in 57(59.5%) women and 39(40.6%) had an emergency repeat cesarean delivery. The factors favoring

successful vaginal delivery were history of previous vaginal delivery and previous cesarean due to fetal distress or breech presentation, and patients having cesarean due to non-progress of labor and no prior vaginal delivery were less likely to have a successful vaginal birth after having previous cesarean delivery.

Conclusions: vaginal birth after cesarean section can be recommended in patients having prior vaginal delivery and previous cesarean due to fetal distress and breech presentation.

Keywords: Cesarean Section, Prior vaginal delivery, VBAC

18.33

THE ROLE OF COMBINED DIABETIC CLINIC IN A TERTIARY CARE HOSPITAL

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Objective: The purpose of this study is to determine the impact of Combined (Physician dialectologist and obstetrician) Diabetic clinic (CDC) in patient management. We have determined the impact by observing the difference in perinatal morbidity and mortality and by study of incidence of good versus poor control among the patient population.

Background And Introduction: Diabetes mellitus is one of the most common medical disorders complicating pregnancy. The study of diabetes in pregnancy shows trends which if monitored carefully allow us to reduce morbidity and mortality both in mother and fetus.

METHODOLOGY: This is a prospective observation study of all patients presenting to the antenatal OPD of Lady Dufferin Hospital (LDH) between September 2005 to September 2007 i.e. period of 24 months. The Hypothesis

behind this comparison is that, in the world wherever combined diabetic clinics are established a change in terms of Diabetic control and patient outcome is noted. We want to assess this change in our hospital and to detect the weakness in our setup to further improve the efficiency of CDC.

Results: The incidence of diabetes in pregnancy has increased 4 fold from 1.1% in 1995-1997 to 4.34% in ten years in LDH. This is partly due to improvement of our pickup rate. Perinatal mortality rate has fallen from 100/1000 in 1995-1997 and 145/1000 in 2008 to 71/1000 in our study. Similarly control of blood sugar and patient compliance was excellent in patient who came regularly to CDC as compared to those who had none or 2-3 visits. 19% of patients who had good control of blood sugar suffered from one or more complications during pregnancy or labor, while 40% of patient in poor control group had complications. This study has shown that we have achieved the aim of establishing the CDC to some extent, but still there are areas where improvement is needed and still we are far away from the results of developed countries.
Conclusion: there is improved maternal and fetal outcome if pregnant diabetic managed at joint clinic.

Keywords: combined-Diabetic-Clinic, Diabetes-pregnancy-Outcome, Incidence

18.34

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

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Purposes: Intrathecal lipophilic opioids are used to improve the quality of subarachnoid block. 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.

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.

Results: Patients in three groups had adequate surgical anaesthesia with no statistically significant difference in the pain scores, need for rescue analgesia, complain of inadequate anaesthesia by the surgeon or conversion to general anaesthesia. Patients receiving fentanyl 25 µg, had a statistically significant higher incidence of pruritus, nausea, and dizziness

Conclusion: Intrathecal fentanyl 10µg or 15 µg, combined with bupivacaine 10 mg provided adequate quality of surgical anaesthesia and analgesia for patients undergoing caesarean section with minimal side effects.

Keywords: Cesarean sections, pruritus, fentanyl

18.35

DIFFERENTIAL COVERAGE FOR PCV AND PENTAVALENT VACCINE IN SINDH

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Introduction: Immunization against common pathogens is essential for reduction of infectious disease morbidity and mortality. Pentavalent vaccine (containing five different antigens) and 10-valent pneumococcal vaccine are given as part of Expanded Program for Immunization (EPI) in Pakistan. Both are given as a 3+0 schedule at 6, 10 and 14 weeks of life. It has been reported that although supposed to be given concurrently, coverage of two vaccines can differ. We explore here coverage of pentavalent and PCV-10 through a cross-sectional series in a rural community in Sindh, Pakistan.

Methods: Study was conducted in Matiari, Sindh from October 2014 to November 2015. Around 60 children aged less than 2 years were enrolled each month. After obtaining informed consent, data related to immunization history was collected and vaccination cards were reviewed. Vaccine coverage of pentavalent vaccine and PCV-10 were plotted against 2 monthly periods from October 2014 to Nov 2015.

Results: Although PCV 10 was introduced in Pakistan in April 2013, coverage for PCV-10

remained low at start of the study in October 2014. More importantly coverage for third dose for PCV was 15 percentage points lower than pentavalent (51% vs. 66%). However, with passage of time, difference decreased and subsequently, in November 2015, the coverage was equal for both vaccines (62.9%) as reported through verbal history or card verification.

Conclusion: Results of this study indicate that after introduction of new vaccines in the country's EPI, it may take considerable time for the vaccine coverage for new vaccines to reach comparable levels.

Keywords: pentavalent, PCV, vaccine coverage

18.36

AVAILABILITY OF MCH AND FP THROUGH PRIVATE SECTOR IN UNDERSERVED POPULATION OF MEGA CITY KARACHI, PAKISTAN

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Introduction: Urbanization in Pakistan is occurring at a rapid annual rate of 3 percent with nearly 35 percent of population living in urban areas of Karachi. Approximately, 40% of Karachi's underserved population lives in squatter settlements characterized by poverty, lack of basic amenities such as appropriate sewage system, clean water, and health facilities. The people most affected are those who live in the poverty-stricken urban slums or in the settlements growing around the periphery of the city.

Objective: To understand the private sector providing MCH and FP services in squatter settlements of Karachi.

Methodology: Mapping of private sector providing MCH and FP services in squatter

settlements was carried out, covering a population of one million. Scope of services assessed kinds of services, cadres of human resource, types of FP methods provided and source of procurement, disinfection/sterilization used, HMIS and means of communication.

Results: 341 health facilities provided FP and MCH services. Of these, only seven provided FP services while 116 MCH facilities gave FP care. Of MCH facilities (n=219), two major services provided were ANC- (n=194 facilities, 88.5%) and delivery care (n=176, 80%). Most health care providers were TBAs (37.3%), LHVs (15.4%), Nurse (13%), midwife (10.4%), Obstetrician (6.3%) and others (4%) out of total 297.

Maternal care facilities offering FP were (n=116, 52.9%), PAC (n=93, 42%) and PPF (n=72, 33%) services. Methods provided were injections (n=102), pills (n=93) and condoms (n=77), IUCD (n=48), ECPs (n=44), and TL (n=11).

Contraceptive methods were procured from open market or shops (42%), PWD of provincial government (19%), social franchise companies (16%), NGOs (15%), from other hospitals (6%) and from friend and relatives (2%).

Only 99 out of 194 facilities used method for disinfection and sterilization of instruments. 44 (22.7%) used boiling, 42 (21.6%) used some disinfectants and 13 (6.7%) used autoclaves. Regarding Health Management Information System and Communication Channels only few reported maintaining records of very few activities and services. With regard to communication means, 74 percent had cellular telephones while only.

Conclusion: Situation of services in private sector is of poor quality. Disinfection and sterilization procedures were poor and records poorly maintained. The private sector can be tapped and trained for provision of quality family planning and MCH services

Keywords: MCH and FP, private health care, underserved population

18.37
STRATEGIES TO IMPROVE THE VACCINE
COVERAGE OF PCV-10 THROUGH
VACCINATORS AND LADY HEALTH
WORKERS IN RURAL DISTRICT OF
SINDH, PAKISTAN

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Background and Aims: PCV-10 was included in Expanded Program for Immunization(EPI) of Pakistan in year 2013. The vaccinators and Lady Health workers(LHWs) are mainly responsible for vaccinating the children. However, vaccine coverage is low as the EPI centres are far away and it's very difficult for vaccinators to cover remote areas with limited resources. The vaccine promotion activities are part of the ongoing project titled "Indirect effect of PCV10 on nasopharyngeal carriage in children under 2 years of age in a rural community in Pakistan".
Method We established a population based surveillance in study area. For vaccine promotion, we started facilitated vaccination campaigns by providing vaccinators and LHWs the list of children to be vaccinated and vehicle for transport to reach all villages. Additionally, we are making voice calls and SMS reminders to parents for due vaccines of their children
Results: Data reported here is from October 2014 to January 2016. Baseline coverage of PCV-10 for first, second and third dose was 55% 53% and 51% respectively in children of four months of age. A total of 17,305 doses of all EPI vaccines have been administered in 8173 children through facilitated vaccination campaigns. By January 2016, the coverage for PCV-10 for first, second and third dose was 85%,73% and 61% respectively. We have made about 2,731 voice calls and sent 13,403 text messages to parents.

Conclusion: It is really challenging to vaccinate all children at domiciliary level despite of the fact that we are providing transport and due vaccine children data to vaccinators.

Keywords: pneumonia, vaccine, under 2 children

18.38
DETERMINANTS OF NON-USE OF
CONTRACEPTIVES – A CROSS-
SECTIONAL STUDY FROM TEN
SQUATTER SETTLEMENTS OF KARACHI,
PAKISTAN

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Introduction: The social and economic benefits of contraception have been demonstrated by various countries including developing countries like Bangladesh. However, Pakistan remained unable to provide equitable services in healthcare, particularly in the field of Reproductive Health, especially with regard to maternal and child health and managing population growth. The current contraceptive prevalence rate for Pakistan is 35% (PDHS 2012-13).

Objective: To determine factors associated with the non-use of contraceptives in squatter settlements of Karachi, Pakistan.

Methodology: This was a cross-sectional survey conducted in urban squatter settlements of Karachi. A total of 5,140 married women in the reproductive age were interviewed. The outcome of interest was non-use of contraceptive method. The descriptive statistics were reported as median (IQR) and proportions. The multivariable model was built using binary logistic regression

Results: About 58% women were not using any FP. Among the various reasons for non-use of contraceptives, about 31% responses were related to biological reasons including breast

feeding, want of more children and current pregnancy. About 23% responses were related to women's beliefs, attitude towards contraceptive practices and sexual practices.

The multivariable model showed that younger age groups, illiteracy, primary education, and residing in Bin-Qasim town were significant factors associated with non-use of contraceptives. Furthermore, the awareness about family planning (FP) from any source including radio, TV, newspaper or any other source had protective effect.

Conclusions: Based on the study findings, measures should be taken to increase awareness of FP methods in younger illiterate women and those with low literacy levels. Availability of FP methods to under-served populations such as of Bin-Qasim town and promotion of FP related programs on radio and television would support increasing current contraceptive prevalence in Sukh catchment Populations

Keywords: FP, non-use of contraceptives, squatter settlements

18.40

ASSOCIATION OF HTSP MESSAGES WITH CURRENT USE OF CONTRACEPTION IN WOMEN SQUATTER SETTLEMENTS OF KARACHI, PAKISTAN

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Introduction: Healthy timing and spacing of pregnancy (HTSP) is an approach to family planning that helps women and families delay, space, or limit their pregnancies for achieving healthiest outcomes for women, newborns, infants, and children.

Objectives: To determine association of knowledge of HTSP messages with current use of contraception in women residing in squatter settlements of Karachi.

Methodology: This was a cross-sectional survey conducted in urban squatter settlements in Karachi. A total of 5,140 married women in the reproductive age were interviewed. The outcome of interest was current use of contraceptive methods. The descriptive statistics were reported as median (IQR) and proportions. The multivariable model was built using binary logistic regression.

Results: The median age at marriage was 18 (IQR: 16–21) years; however, median age at the time of first birth was 20 (IQR: 18–23) years. The current use of any modern FP method was 32.1% (95%CI: 30.8–33.4%). About 37% women were aware of all four HTSP messages. The multivariable model results showed that women having knowledge of all four HTSP messages were more likely to be current users of contraception (OR: 1.15, 95%CI: 1.07-1.49). Among other factors significantly associated with current use of contraception were higher levels, lower duration of marriage and the women having information related to family planning on television in last 12 months. The women with 0-2 children compared to those with ≥ 5 children had a protective effect and were less likely to be current user of contraception.

Conclusions: Based on the study findings, strategies should be planned for improving literacy rate, family planning programs on television for increasing the knowledge about HTSP leading to increase the current contraceptive prevalence in Pakistan

Keywords: HTSP messages, current users, squatter settlements

18.41

AUTONOMY OF WOMEN REGARDING MARRIAGE AND INTER-SPOUSAL COMMUNICATION FOR REPRODUCTIVE HEALTH

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Introduction: The ability of women to communicate their thoughts regarding FP is an essential element of inter-spousal communication and empowerment which affects their reproductive health and over all development. In a patriarchal society where a male member of the family or husband dominates in decision-making process, especially those decisions which are related to women's mobility, making contraceptive and fertility choices and health seeking practices, the role of communication between husband and wife becomes important for the benefit of the family.

Objective: To determine association between inter-spousal communication and current use of contraception among married women

Methodology: Cross sectional survey on randomly selected households in four towns of Karachi.

Multistage cluster sampling technique was used and sample size was distributed proportionate to the population size. 5,340 married women in reproductive age group 15-49 years were interviewed - Data were analyzed for 5,140 women. To assess currently married women's decision making autonomy, information was collected on socio-demographic variables, reproductive history, who initiates discussion, topics under discussion, decision making.

Results: Forty-three percent of women and 16% of husbands initiated discussions. For main decision making, (8.9%) men and women (8.7%) took the final decision while 68% arrived to a joint decision.

Inter-spousal communication, age, educational status, duration of marriage and number of

children emerged as independent predictors for current use of FP.

About 43% had a say for choosing their husband, and 35% for deciding their age at marriage. About 47% of women held discussions with husbands discussed pregnancy and/or antenatal care (33.3%) and delivery care (23.4). Only 20.2% of women discussed spacing after childbirth or abortion, and 24.5% about using a modern method of contraception.

Conclusion: About 56 percent couples had inter-spousal communication and of those 64 percent were current FP users. The findings revealed that women who had inter-spousal communication were about two times more likely to be current contraceptive users

Keywords: inter-spousal communication, FP, squatter settlements

18.44

LEAD CONTENT IN 'SURMA/KAJAL SAMPLES' FROM JAPAN, PAKISTAN AND SAUDI ARABIA

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Objective: Lead is a toxic metal. Cosmetic products are a potential source of exposure to lead, particularly in South Asia and Middle East. We analyzed the lead concentration in 'surma/kajal' used in Japan, Pakistan and Saudi Arabia.

Methods: 33 'surma/kajal' samples were bought from the markets of Japan, Pakistan and Saudi Arabia. The chosen cosmetic products which shared the large respective market brand along with unbranded products were purposely chosen. These products had origin in England, France, Germany, India, Italy, Pakistan and Saudi Arabia. The samples were analyzed by metallic

composition analysis by energy dispersive X-ray fluorescence spectrometry.

Results: Of the total 33 samples, six (6) had lead content in them. Four (4) samples had extremely high lead levels and comprise the largest market share of Pakistan and Saudi Arabia. The other two were local made products from Pakistan and Saudi Arabia and had relatively lower lead content.

Conclusion: Eye cosmetics are potential source of lead exposure for the population in South Asia and Middle East. An analysis of available market cosmetic products is needed and regular monitoring is required to limit this hazard.

Keywords: surma/kajal, lead, mother and child health

18.45

KNOWLEDGE, ATTITUDE AND PRACTICES OF PRACTICING MID-LEVEL PROVIDERS (MLPS) REGARDING POST ABORTION CARE (PAC) IN SINDH, PAKISTAN

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Background: In Pakistan, almost 700,000 women seek medical treatment for post abortion complications every year. This necessitates the accessibility of quality PAC services by skilled providers. Purpose: This study aimed to assess Knowledge, Attitude and Practices of MLPs regarding PAC in Sindh, Pakistan.

Method: The study utilized cross-sectional design. Purposive sampling technique was used to select 100 MLPs. Data was collected through self-administered questionnaire and analyzed using SPSS version 19.

Key Findings: The participants were 47% Nurse Midwives, 35% Lady Health Visitors and 18% Community Midwives. The median age of the participants was 30 years. The mean score of knowledge was 8.9 with standard deviation of 2.2 out of 16. The knowledge regarding different components of PAC was counseling 77%, family planning 58%, MVA 64% and misoprostol 27%. The mean score of attitude was 14.9 with standard deviation of 2, out of total 21. Overall 73% participants' had positive attitude towards women rights for receiving PAC and 82% positively believed in providing PAC services. 56 participants provided PAC services in last quarter, in which majority 79% reported D&C as the first choice of method for treatment of incomplete abortion followed by MVA 39% and misoprostol 18%. 51% participants had encountered abortion complications that required referral; almost 51% have agreement with the referral facility in which only 33% had written agreement.

Conclusion: The findings highlighted the need to provide training and mentorship to MLPs on PAC and build strong network of MLPs to strengthen the referral process to promote safe PAC services.

Keywords: Post Abortion Care, Knowledge, practices

18.46

CAUSES OF MATERNAL DEATHS, STILLBIRTHS AND NEONATAL DEATHS FROM THE THE ALLIANCE FOR MATERNAL AND NEWBORN HEALTH IMPROVEMENT (AMANHI) COHORT - KARACHI

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Background: The Millennium Development Goals that aimed to reach significant reductions in maternal and child mortality have been proving hardest to achieve due to lack of quality data. High-quality, representative cause-specific mortality data on stillbirths, neonatal and maternal deaths can only be obtained from well-characterized cohorts of pregnant women (PW) where all pregnancy outcomes are recorded.

Purpose: This study aimed to determine population based estimates of burden, timing, and causes of maternal deaths, stillbirths and neonatal deaths to generate unique information to guide improvements on interventions to reduce and prevent these mortality events.

Methods: This was a prospective cohort study conducted in peri-urban communities in Karachi. During Pregnant women were identified through 3 monthly surveillance rounds and followed till 42-60 days postpartum. Verbal autopsies (VA) for all maternal, stillbirths and NNDs were conducted and Cause of death (COD) was assigned using physicians review method.

Results: Outcome data was available for 93 % of women. Major cause of SB included pregnancy induced hypertension (46%), Antrapartum Hemorrhage (16%), obstructed labour (13%) and cord prolapse/malpresentation (6%). Major

causes of NNDs included perinatal asphyxia (40%), neonatal infection (31%), sepsis (24%), preterm (23%) and congenital malformations (5%). Major causes of Maternal deaths included postpartum hemorrhage (18%) and eclampsia and pre-eclampsia (18%). Puerperal sepsis (14%) and other medical and obstetric conditions 28%

Conclusion: The CODs distribution shows that majority of causes are preventable. These findings indicate the need to improve antenatal care, quality of care around birth and immediate postnatal period, early detection and facility based care for neonates.

Keywords: Verbal autopsy, causes of death, Maternal deaths

18.47

ESTABLISHING A REPOSITORY OF BIOLOGICAL SAMPLES FOR TESTING BIOLOGICAL MARKERS AS PREDICTORS OF IMPORTANT MATERNAL AND FOETAL OUTCOMES

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Background: Several genetic and other biomarkers have detected women at risk of adverse birth outcomes in developed countries. Low and middle-income countries lack these technologies because of very few bio banks and no large population cohort studies. We aim to establish repository of biological samples to facilitate future discoveries on maternal, fetal and neonatal health.

Objectives: To identify biological markers to predict and facilitate future discoveries for

prevention and improvement in care of pre-eclampsia, preterm births, IUGR, and stillbirths.

Methodology: Prospective cohort study is ongoing in peri-urban Karachi, Ibrahim-Hyderi. Pregnancy is dated via ultrasound and enrolled between 8-20 weeks. Using standard methods samples of blood (15ml) and urine (100ml) are collected at enrolment, 24-28 or 32-36 weeks gestation, and 42-60 days postnatal, placenta and cord blood at delivery, paternal saliva, newborn saliva and stool samples are collected, processed with software entry in real time, and stored in -80 freezers. Phenotypic and clinical data is also collected at all visits.

Results: 1200 pregnant women are enrolled. Blood & urine samples for 998(83%), placentas and cord blood for 540(57%) are collected among 941 women with birth outcome. Maternal feces 814(91%), postnatal blood & urine 767(92%), paternal saliva 1120(93%), newborn stool 687(88%) and newborn saliva in 291(88%) have been obtained. Overall, we have all samples available for 400 participants.

Conclusion: This provides a great example of a high quality bio-bank maintained in a developing country, and will provide a platform to explore genetic and biochemical biomarkers of adverse maternal and neonatal outcomes.

Keywords: Bio-Bank, Biological Samples, Placenta

18.48

BURDEN OF SEVERE ACUTE MATERNAL MORBIDITY, CARE RECEIVED, AND THEIR ASSOCIATION WITH STILLBIRTHS, PREMATURITY, INTRAUTERINE GROWTH RESTRICTION AND NEONATAL MORTALITY THE ALLIANCE FOR MATERNAL AND NEWBORN HEALTH IMPROVEMENT (AMANHI) COHORT - KARACHI

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Background: There is a paucity of information from developing countries on true burden of maternal morbidity and their association with various pregnancy outcomes. Hence accurate estimates on burden of maternal morbidity at community level are needed to devise effective strategies and interventions to prevent these.

Purpose: The purpose of this study is to determine burden of severe acute maternal morbidity, care received, and their association with adverse birth outcomes. .

Methods: This prospective cohort study was conducted at Ibrahim Hydri and Rehri goth Karachi. Pregnant women were identified through 3 monthly household visits and followed in three antenatal, two postnatal visits. In addition facility surveillance and birth attendant interviews were done. Data on women's general health and self-reported pregnancy related morbidities and their care were recorded at each visit.

Results: There were a total of 4198 pregnant women enrolled in the study. There were 84 miscarriages, 111 stillbirths, 143 neonatal deaths and 8 maternal deaths. Significant antepartum hemorrhage (APH) and severe post-partum

hemorrhage was reported by 3.2% and 3.2% of the women respectively. 9.4% women had hypertension and 0.6% met the criterion for pre-eclampsia. Antepartum sepsis was reported by 19.5% of women. APH, sever APH and antepartum sepsis were associated with stillbirths odds ratios(OR) 2.3[95%CI: 1.3,4.0], 4.4[95%CI:1.3,15.0] & 1.9[95%CI:1.3,2.9]. APH and significant APH was associated with preterm births having OR 2.0[95%CI:1.6,2.6] & 2.8[95%CI:1.9,4.0]. Also women with pre-eclampsia were also more likely to have pre-term birth, 2.3[95%CI:1.1,4.9]

Conclusion: The study shows the huge burden of preventable maternal morbidities and their association with adverse birth outcomes. Early screening, better facility care, clean and facility based delivery with skilled birth attendants are needed to overcome these.

Keywords: AMANHI, Maternal Morbidities, Adverse birth outcomes

18.49

ASSOCIATION OF VITAMIN D WITH OUTCOME AFTER INTRA CYTO- PLASMIC SPERM INJECTION

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Objective: To observe effects of vitamin D levels on pregnancy outcome after intra cytoplasmic sperm injection (ICSI). *Method:* It was a cross sectional study conducted in Australian Concept Infertility Medical Centre from July 2011 to August 2014. Estimation of 25-hydroxy cholecal- ciferol (25-OHD) of consented females (252) was done before treatment protocol for ICSI. Results of β hCG performed 14 days after embryo transfer

categorized groups; Pregnant with β hCG more than 25 IU/mL and rest included in non-pregnant group. Both groups were compared by independent sample t-test and Pearson Chi Square test. Binary Logistic Regression Analysis was used to estimate odds ratio of pregnancy outcome with its predictors including Vitamin D.

Results: The mean value of 25-OHD, number of oocytes, fertilized oocytes and endometrial thickness was significantly higher in pregnant women. A significant positive association of 25-OHD with clinical pregnancy and thickness of endometrium was observed. After adjustment with female age and BMI, positive association of vitamin D with endometrial thickness was *Conclusion:* Deficiency of 25-OHD in females hinders the accomplishment of optimal endometrial thickness required for implantation of embryo after ICSI. The improvement in vitamin D status can thus improve success results in assisted repro- ductive clinics.

Keywords: vitamin D, intra cytoplasmic sperm injection, outcome

18.51

FAILURE AND NEGLIGENCE TO FAMILY PLANNING PRACTICES IN PAKISTAN

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Introduction/objective: The aim of this study is to establish the importance of family planning. Family planning is important for the health of mother and child. Unawareness and conservativeness are the key factors which keep the population from doing family planning. Shorter birth-interval lead to many health drawbacks in mother and infant.

Method: A case was encountered from community setting in which a 27 year old lady belonging to low socioeconomic class recently had a pre-term delivery. The mother of 7 children had her last delivery one year back, and was under family pressure to give a male child. The literature reviews articles referred from Google scholar paper, PubMed and science direct.

Results: According to World Bank data 2014, Pakistan is the sixth most populous country. One of the reasons behind this is lack of family planning, evident by the low contraceptive prevalence rate (CPR) of 35%. Low CPR is due to cultural beliefs, desire of male children, early marriages and illiteracy. Drawbacks of shorter birth-interval are maternal mortality and morbidity which includes anemia, abnormal remodeling of endometrial vessels, cervical insufficiency causing miscarriages and pre-term births.

Recommendations: Removing the taboo attached with discussing sexual health should be removed. Healthcare professionals should educate the couples about birth-spacing and contraceptives. NGOs should be made to provide awareness and services to especially the people of rural areas. Media should play its part in delivering the public-service message. Lastly, government should form policies of having not more than two children.

Keywords: Contraceptives, contraceptive prevalence rate, family planning

18.52

EARLY MARRIAGES: AN ISSUE CALLING FOR IMMEDIATE ATTENTION

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Introduction: The eastern society has shown drastic transformations. Despite of these drastic changes there are still some areas where it still lags behind the world. The existing trend of early marriage is one of the examples. In particular, a large number of female adolescents are facing this problem. Since adolescence is a critical developmental stage, and early marriage has dreadful physical and psychological consequences on it, early interventions are required to prevent these effects. *Objective:* The literature review has been conducted to identify and highlight the causes, the outcomes and some of the recommendations to improve the problem.

Methods: Various databases and search engines, ranging from 2001 to 2015, have been used to conduct a detailed analysis of the problem.

Results: The epidemiological data illustrate that over 60 million marriages have been reported among girls in their adolescence. The UNFPA (2011) highlights that about a 30% of the girls are married off as child brides in Pakistan. Moreover, obstetric fistulas, postpartum hemorrhage and psychological submissiveness are some of its reported consequences (UNFPA, 2012). Various socio-cultural, economic, and religious factors or sometimes the mixture of these are responsible behind its existing trends. Therefore, the resolution of the problem requires a multi-dimensional approach.

Conclusion: The society has changed a lot yet, the problem of early marriage still exists. Female adolescents, being the most vulnerable

population, require immediate interventions to prevent the adverse consequences. A collaborative effort of health professionals, religious leaders, society and governmental organizations is required to control these existing trends.

Keywords: Early marriages, multi-dimensional approach, Socio-cultural domain

18.53

EXPENDITURE TRACKING AND REVIEW OF REPRODUCTIVE MATERNAL, NEWBORN AND CHILD HEALTH POLICY IN PAKISTAN

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Introduction: Reproductive, maternal, newborn and child health (RMNCH) has emerged as a key focus of health policies in Pakistan since the mid-1990s. Despite devoting substantial resources to RMNCH programs the targets of Millennium Development Goals (MDG) 4 and 5 were not achieved. Against the target of 140 per 100,000 live births, the Maternal Mortality Rate (MMR) reduced by 22% between 2005 and 2013, however only achieved 170 per 100,000 live births by 2015. Infant Mortality Ratio reduced by 17% between 2003 and 2013, reaching 69 per 1000 live births in 2015 against the target of 40 per 1000 live births. This paper examines the potential reasons for slow progress toward MDGs 4 and 5 in Pakistan;

Methods: We track RMNCH expenditure by government, donors and the household. We provide assessment of RMNCH related vertical programs implemented during 2000-2010 and lastly equity analysis of utilization of government health services. We use multiple data sources including Pakistan Social and

Living Standard measurement survey, Household integrated economic surveys, National health accounts data, World health organization health expenditure data base, OECD development assistance tracking system to estimate RMNCH related expenditure. We reviewed grey and scientific literature on the planning, management and review of vertical PHC programs in Pakistan. We use Countdown 15 definition of RMNCH expenditure.

Findings: From 2000-2010 the expenditure on RMNCH programs increased by 181%, reaching PKR 628.79 billion (US\$ 9.67 billion). Share of RMNCH expenditure in total health expenditure increased from 16 percent in 2005-06 to 21 percent in 2009-10. Share of government expenditure on RMNCH in government health expenditure decreased from 26% in 2000 to 14% in 2010. Official Development assistance for RMNCH share in total ODA increased from 36% in 2003 to 51% in 2010. Child health expenditure was over 71 percent of the Official Development Assistance to RMNCH, reaching US\$ 257 million in 2010. RMNCH related programs implemented during 2000-2010 faced many challenges related to governance, vertical primary healthcare approach and planning and management. We find little improvement on equity in utilization of health facilities mainly for childhood diarrhea.

Conclusion: We recommend integration of RMNCH programs into primary healthcare. We also recommend demand side financing to improve access to government health facilities by the poor.

Keywords: Resource tracking, health expenditure review, utilization incidence analysis

18.54

COMPLICATED LUNG ABSCESS IN A CHILD WITH RECURRENT PNEUMOTHORACES: A CASE REPORT

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Introduction: Lung abscess is a very rare infectious condition in children and is most commonly encountered as a complication of bacterial pneumonia. The incidence of lung abscess has decreased dramatically with the antibiotic era. Although 80-90% of patients heal without sequel in response to antibiotic therapy, in 10-15% of patients simple drainage or other surgical interventions are mandatory

Case Presentation: Here we present an eleven month old male child from Sind, Pakistan, who had presented with pneumonia, leading to recurrent pneumothoraces, not responding to optimal antimicrobial therapy. The pathogenic organism was *Pseudomonas Aureginosa*. CT scan initially reported the lung changes as being "cystic". Video Assisted Thoracoscopic Surgery (VATS) revealed multiple necrotic areas of the lung tissue with pus filled debris that were debrided accordingly. The child improved dramatically after the intervention.

Conclusion: Case of lung abscess presenting with recurrent pneumothoraces in a child with *Pseudomonas* infection has not been reported previously in literature to the best of our knowledge. Although antimicrobials are mainstay of treatment for lung abscess but some patients do require drainage for lung abscess. It has shown remarkable improvement in our patient management and shortens length of hospital stay. However, more evidence is required to determine the efficacy of routinely early radiological intervention.

Keywords: lung abscess, recurrent pneumothoraces, children

18.55

RISK FACTORS OF OBESITY IN CHILDREN PRESENTING TO THE OUTPATIENT CLINICS OF A TERTIARY CARE HOSPITAL IN PAKISTAN: A CASE CONTROL STUDY

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Introduction: Childhood obesity is one of the most serious public health challenges of the 21st century. The problem is global and is steadily affecting many low- and middle-income countries, particularly in urban settings. The prevalence has increased at an alarming rate. Globally, in 2013 the number of overweight children under the age of five, is estimated to be over 42 million. The etiology of obesity is multi factorial. Environmental factors, lifestyle preferences, genetics and cultural environment play pivotal roles in the rising prevalence of obesity worldwide. Several authors have demonstrated a positive association between the time spent watching TV and playing video games, television viewing, sitting on the computer or playing video games of 4 hours or more, reduced physical activity, sleep duration for

Subjects: All children (with minor illnesses)* aged between 5-16 years, presenting to the Pediatric outpatient clinics were included in the study

Results: 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.

Conclusions: We conclude that the results of risk factors of obesity in children at a tertiary care center are in concordance with the international data and the study shall serve the purpose of primordial prevention by identifying the risk factors earlier in childhood and thus help prevent the health consequences later in life

Keywords: Obesity, Risk Factors, children

18.56

TO DETERMINE THE CORRELATION OF BETWEEN RAISED NC & ELEVATED BP IN SCHOOL GOING CHILDREN

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Introduction: Childhood obesity is one of the most serious global public health challenges of the 21st century and is steadily affecting many low- and middle-income countries, with increasing prevalence particularly in urban settings. Complications of obesity includes hyperinsulinemia, poor glucose tolerance and a raised risk of type 2 diabetes, hypertension, sleep apnea, social exclusion and depression. Obesity is the major determinant of hypertension in children. Even prehypertensive blood pressure ranges doubles the risk of hypertension in adulthood. Among the various indexes of obesity, BMI and WC are most frequently used. NC is a better measure of upper body fat and would be a helpful tool to detect the presence of elevated BP in children as it reflect central fat deposition.

Objective: To determine the correlation between raised NC & elevated BP in school going children aged 6 to 16 years. *Setting:* Schools of three different categories of socioeconomic status in Karachi. *Duration of Study:* Carried out over a 6 month period.

Study Design: Cross sectional study *Subject and Methods:* Children (students) from class 1st to 10th were selected taking 5 students from each class. Height in centimeters, body weight in kilogram, NC in centimeters were measured and the blood pressures measured with mercury sphygmomanometer in mmHg by trained staff and volunteers. The NC and BP categorized according to centiles for age and weight. Means and SDs of age, weight, height, NC and BP (prehypertension & hypertension) and Frequency and percentages were calculated. Pearson's correlation co-efficient used to determine the correlation. *Results:* Out of 150 children 47% were girls and 53% boys. Overweight children were 12% and 6% were obese. Out of these 14.2% were overweight girls and obese girls 2.8%, overweight boys 10%, obese boys 8.75%, girls with prehypertension 4.28% but none with hypertension, boys with prehypertension & hypertension were 3.75% and 1.25% respectively. 39% girls with normal NC while 6% with raised NC. 30% boys with normal NC while 20.6% with raised NC. Among the prehypertensive group 3% belonged to low socioeconomic status & hypertensive 1% while 1% of the children from middle status appeared prehypertensive & 2% from high status group but none of them were hypertensive among the latter two status. Furthermore results showed that neck circumference & blood pressure has weak to moderate positive correlation. *Conclusion:* From this study we concluded that more girls are overweight then boys while boys are more prone to be obese belonging to high socioeconomic status and having raised NC. While the children who belonged to low socioeconomic group are more to be hypertensive. Although the correlation between raised NC & elevated BP appeared weak to moderate but this can serve as a screening tool and help in modifying life styles of children that lead to raised neck circumference due to obesity & ultimately helping them to prevent hypertension & other cardiovascular complications. We assumed that we can find a strong correlation between raised NC & BP in a large number of children or if a study would be done on a larger scale.

Keywords: overweight, obesity, preehypertension, hypertension, Neck circumference

18.58

MAKING IT COUNT: RATES AND CAUSES OF STILLBIRTH IN A DEMOGRAPHIC SURVEILLANCE SITE IN KARACHI, PAKISTAN

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Introduction: Stillbirth remained a neglected issue absent from mention in Millennium Development Goals. An estimated 2.6 million babies are stillborn every year with highest rate in Pakistan, 43.1 stillbirths/1000 births. There is lack of good quality prospective population based data in Pakistan regarding burden, timing and causes of stillbirths. We describe here burden, timing and causes of stillbirths in a prospective cohort of pregnant from a low income community setting in peri urban Karachi.

Methodology: From Jan – Dec 2012, Community Health Workers (CHWs) identified pregnant women through 3 monthly household visits. Pregnant women were then followed up till end of their pregnancy. In case of a stillbirth, a detailed verbal autopsy (VA) interview was undertaken 2 weeks after the outcome by a research assistant. VA forms were then reviewed by 2 independent Physicians who assigned a cause for stillbirth. In case of disagreement, VA form was reviewed by a third physician. A consensus between two physicians was required for a definitive cause.

Results: There were a total of 273 stillbirths (3.04%). Stillbirth rate was 30.7/1000 births.

Distribution of antepartum and intrapartum stillbirths was 83% and 17%. Three most common causes of stillbirths included pregnancy induced hypertension (37%), antepartum hemorrhage (10%) and obstructed labor (6%).

Conclusion: We have reported a high burden of stillbirths that take place during the intrapartum period. This reemphasizes need for good quality antenatal care in these settings. Appropriate measures need to be taken targeting most common causes of stillbirths, focusing on improved antepartum health care facilities.

Keywords: Stillbirth, Rates, Causes

18.59

CLINICAL OUTCOMES OF WOMEN AND NEWBORNS RECEIVING SERVICES OF MIDWIVES: A LITERATURE REVIEW

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Introduction: The maternal mortality is a preventable cause of death, yet in 2015 it taxed 303,000 deaths globally, out of which 99% were in developing countries. The strategic deployment of midwives in several western and regional countries led to significant decline in maternal mortality ratios. The purpose of this review was to appraise studies assessing outcomes of women and their newborns who received the services of midwives. **Method:** The literature was searched on PUBMED, CINAHL, Science Direct, Cochrane Library and Google Scholar using key terms “perinatal outcomes”, “maternal outcomes”, “neonatal outcomes”, “midwife led care” and “midwives effectiveness”.

Results: Total 14 research papers from all sources were included for full review out of which five were recent systematic reviews, six studies belonged to western world and three studies were from south Asian region. Five western studies utilized national data set for describing the findings. Findings revealed that

women receiving care from midwives were more likely to have normal vaginal births, less likely to receive interventions during labor and have improved newborn health outcomes when compared to other models of care. However, caution should be applied while interpreting the findings as all women receiving services of midwives were low risk and mostly multiparous. *Conclusion & Recommendation:* Overall the findings established safety of midwifery model for low risk women and newborns. There is a dearth of published studies in South Asian context including Pakistan, indicating the gap for further research.

Keywords: midwives, newborn, outcomes

18.60

KNOWLEDGE ASSESSMENT OF WOMEN REGARDING REPRODUCTIVE HEALTH CARE AND BARRIERS IN ACCESSING SERVICES IN LOW INCOME COMMUNITIES OF DISTRICT THATTA: A BASELINE SURVEY

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Introduction: The study site of Global Network in Pakistan (Thatta), showed alarming maternal and newborn health statistics during the period of 2010-2013. Several studies implied that meeting the learning needs of women and making them aware about the available resources, can significantly improve health service utilization and health status of women. Hence, a baseline survey was conducted to assess the knowledge gaps and barriers of women regarding reproductive health in Thatta. *Method:* A descriptive cross sectional survey used convenience sampling to recruit 50-75 rural women, delivered between Jan, 2016 and Feb,

2016, in district Thatta. Data was collected through a structured survey questionnaire that was developed by the research team and feedback was obtained from content experts. *Results:* Overall 65 women were approached, out of which 53 women consented to participate. Only 53% women could identify bleeding as a pregnancy complication, 20.4% could state the use of iron supplements, 58.5% considered midwife or doctor as skilled birth attendant and 71.7% considered family planning important however only 15% of them were using it. The major barrier for accessing antenatal care was lack of finance (37.5%) and transport (25%), 69.8% women denied receiving discharge teaching after delivery whereas desire for more children (31.25%) and family pressure (21.8%) were identified as barriers for family planning. *Conclusion/recommendations:* Delivery of health education throughout the continuum of maternal and newborn health might improve reproductive health outcomes and these can be a horizontal program of the Global Network. Workforce mobilization should be the utmost priority through collaboration with government, midwifery association and international partners to enhance skilled birth attendance and quality of service delivery.

Keywords: knowledge, Thatta, reproductive health

18.62

CHILD ABUSE IN PAKISTAN: A QUALITATIVE STUDY OF EXPERIENCE, ATTITUDES AND PRACTICE AMONGST HEALTH PROFESSIONALS IN THE EMERGENCY AND PAEDIATRIC DEPARTMENTS

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Introduction: Child abuse is a global problem and pervades all cultures and socio-economic strata. The effects of abuse can be profound and life altering for both victims and their own children. **Objectives:** To study experiences of health care providers (HCPs) and challenges they face when managing cases of child abuse. **Methods:** This was a qualitative research design using standard methodology and analysis. Convenience sampling ensuring representation was used to conduct 11 in-depth, semi-structured tape-recorded interviews. These interviews were conducted in Urdu with doctors, nurses and security staff in the Emergency and Paediatric Departments of Aga Khan University Hospital. Interviews were transcribed and translated into English. Thematic analysis was conducted by 2 researchers using AtlasTi software. **Results:** Nineteen themes were generated from the interviews. Common themes were: 1) Case study examples: A wide variety of case study examples from HCPs, predominantly of sexual and physical abuse; 2) Challenges: A number of challenges were identified at the level of the HCP, child, family, institution and wider societal and legal challenges. These included reluctance of family to report abuse to police, ability of parents to self-discharge, lack of social institution to protect children; 3) Strategies

developed by HCP: Education of the parents regarding suitable parenting methods and how to minimize physical punishment.

Conclusion: HCPs within Pakistan face a large number of barriers when it comes to both recognising and acting upon suspicion of child abuse. These challenges are derived largely from social stigma and minimal support from legal and social systems.

Keywords: Child abuse, Training, Sexual abuse

18.63

WEIGHT GAIN AND ALTERED SERUM ESTROGEN LEVELS IN FEMALE ALBINO WISTER RATS SECONDARY TO ADMINISTRATION OF COMMERCIALY AVAILABLE CHICKEN FEED AND CHICKEN MEAT

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Objective: In Pakistan the most favorable consumption in meat nowadays is chicken. The inclination of the dietary pattern more to chicken meat than red meat may account to its better taste, easy availability and low cost. The present study was designed to investigate the effects of the chicken feed and chicken meat on the growth, body weight and the serum estrogen levels in the female albino Wistar rats. **Study design:** Experimental study. **Place and duration of study:** Department of Biochemistry, Baqai Medical University, Karachi, from March 2013 to September May 2013.

Methodology: Seventy five female albino Wistar rats were used in the experiment. Animals were randomly assigned to three groups (n=25), control rats fed on chow, chicken feed treated rats and chicken meat treated rats for a period of 6 weeks. Body weight and serum estrogen levels estimated before and after the treatment. Growth rates were also estimated after the experiment.

Results: The present study showed that daily intake of chicken feed and chicken meat for 6 weeks significantly increased serum estrogen levels. Growth rates of both test groups rose significantly as compared to control group.
Conclusions: It was therefore, concluded that increased growth rate following chicken feed and chicken meat intake was due to increased serum estrogen levels. It is therefore suggested that the potential cause of polycystic ovaries and obesity is due to increased estrogen levels which may results from dietary inclination of people towards chicken products.

Keywords: chicken feed and meat, estrogens, growth rate

18.64 FREQUENCY AND EARLY COMPLICATIONS OF LATE PRETERM NEONATES AT SECONDARY CARE HOSPITALS OF AGA KHAN UNIVERSITY HOSPITAL

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Objective: To determine frequency of late preterm and to determine the early complications (within 72 hrs) in late preterm neonates during their stay at secondary care hospitals of Aga Khan University

Background: The burden of prematurity comprised of 12.7% of the live births, where late preterm accounts for approximately three fourth (73%) of overall prematurity worldwide. Frequency of preterm birth are increasing worldwide and there is evidence that this increase is mostly due to "late preterm" births which is of all preterm births. As a consequence, they are at higher risk than are term infants of developing medical complication like respiratory distress (13.8%), hypothermia (10.0%), hypoglycemia (14.2%),

hyperbilirubinemia (10.7%), neonatal sepsis (30.8%) that result in higher rates of mortality and morbidity during the birth hospitalization. In addition, late-preterm infants have higher rates of hospital readmission (17.9%) during the neonatal period than do term infants.
Study Design: Case series study
Methodology: Newborns delivered during study period will be included in study to determine frequency of late preterm neonate. Demographic features i.e., age, gender, gestational age, birth weight will be recorded will be recorded. All late preterm will be observed for early complication within 72 hours of birth including signs of neonatal sepsis, Respiratory distress syndrome, Hypothermia (Temp. < 0.05 as significant).
Results: There were 1696 (86.7%) term and 217 (13.3%) preterm live singletons. There were 217 (12.7%) late preterm making the rate of late preterm at 225 (96.4%) of all preterm singletons. Among them respiratory morbidities were diagnosed in 24%, Hypoglycaemia was 13.8%, Evaluation for sepsis in 9.2%, phototherapy for jaundice was required in 17.5% and Hypothermia was diagnosed in 6.0% infants admitted in secondary care hospital.

Conclusion: Late preterm infants are at higher risk of morbidity and hospitalization and treating late preterm as almost term and almost normal infants should be avoided

Keywords: late preterm, early complication, secondary care hospital

18.65

FRONTLINE HEALTH WORKERS LACK BASIC KNOWLEDGE AND SKILLS FOR CASE MANAGEMENT OF CHILDHOOD DIARRHEA AND PNEUMONIA: FINDINGS FROM NIGRAAN CLUSTER RANDOMIZED TRIAL IN A RURAL PAKISTANI DISTRICT

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Background: Diarrhea and pneumonia remain major killers of under-five children in Pakistan. LHWP has the potential to improve community case management (CCM) of diarrhea and pneumonia. LHWP's ability to improve child health outcomes is thwarted by low knowledge and skills. NIGRAAN introduces an intervention on enhanced supportive supervision for better CCM of diarrhea and pneumonia.

Methods: As part of the randomized controlled trial of 'NIGRAAN', LHW and LHS skills for CCM of diarrhea and pneumonia were assessed before implementation of the intervention. This paper presents the results of that pre-intervention assessment. Observation based scorecards and written questionnaires were used for assessment of knowledge and skills.

Results: LHW and LHS knowledge and skills for diarrhea and pneumonia were low. Mean knowledge score among intervention and control arm LHWs was 11.4 and 15.1 respectively ($p=0.002$) out of a total score of 60. Among LHSs, mean knowledge score was 21.6 and 24.5 ($p=0.26$) in intervention and control arm respectively. Less than half of LHWs were able to perform any of the CCM skills correctly while LHSs demonstrated even poorer skills. LHW and LHS skills were relatively better for diarrhea compared to pneumonia. Supervisory performance was particularly deficient in correcting LHWs' clinical skills and in providing feedback.

Conclusion: CCM knowledge and clinical skills of LHWs and LHSs are low. LHSs' clinical skills are lower than LHWs and their supervisory skills are suboptimal leading to an

ineffective system of supervision. LHWP's supportive supervision should be strengthened in order to improve CCM of diarrhea and pneumonia.

Keywords: Pneumonia, diarrhea, CCM

18.66

COST OF ESSENTIAL MATERNAL AND CHILD HEALTH SERVICES IN PAKISTAN

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Background: Resource allocation priority setting requires estimates of cost of services. Cost of service helps to estimate the budget impact of scaling up and existing intervention or to adopt a new intervention. We provide cost estimates of maternal neonatal and child health services for public health facilities of primary and secondary levels of care in Pakistan.

Methods: We used national level guidelines for management obstetric deliveries e.g. Antenatal care, institutional based obstetric delivery, post natal care and child illness e.g. diarrhea, pneumonia and tuberculosis. We then estimated the resources use for these treatment regimes. These include consultation with physician, laboratory test, radiological examinations and prescribed medicines. All costs are reported in 2013 prices and salary scales. We assumed a normal case load for each case management except obstetric deliveries. Obstetric delivered were assumed to be normal vaginal deliveries for 84% of the total deliveries. Findings On average a normal vaginal delivery cost PKR 3454 to public exchequer. Cost of C-Section at a secondary level hospital is PKR 18300. Cost of antenatal care with an ultrasonography of pregnant women cost PKR1134. Cost of case management of childhood diarrhea and

tuberculosis is PKR 800 and PKR 15000 respectively. On the average the costs are roughly double at secondary level than primary level facilities.

Discussion/Conclusions: To make a case for universal health coverage for essential health services the cost estimates will enable policy maker to forecast budget to extend coverage to un-served areas. We demonstrated that primary level of care is cost efficient than secondary level of care for all types of our services package. Moreover there are additional benefits of primary level included time saving, improvement in quality of life and saving household resource for traveling their patient to secondary level of care facilities.

Keywords: cost of service, budget impact, maternal and child health

18.67

STATUS OF MATERNAL AND CHILD HEALTH IN AN URBAN SQUATTER SETTLEMENT OF KARACHI, PAKISTAN: RESULTS FROM A ROUND OF SURVEILLANCE

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Objective: To assess the status of maternal and child health in a squatter settlement of Karachi through a community based surveillance system.

Methods: Health and Demographic Surveillance System was established in a squatter settlement of Sultanabad, District South, Karachi. Data was collected from seven out of nine sectors of Sultanabad during August to September 2015. Households were eligible to be enrolled if there was a married woman of 15-49 years. Data on

socio-demographic, maternal and child health indicators was collected during a round of surveillance using a structured questionnaire adapted from Measure Demographic and Health Survey Phase III and Pakistan Demographic and Health Survey 2012-13. Analysis was done using SPSS version 19.

Results: A total of 730 women completed the interview. Among them 87% women sought antenatal care during last pregnancy and 79% of the women delivered in a facility. Contraceptive prevalence rate was 32%. Proportion of children exclusively breast fed till six months of age was 63%. Almost 86% children of 12-23 months were fully immunized. Prevalence of stunting among children under five was 40%.

Conclusion: In Sultanabad, maternal and child health indicators were relatively better as compared to national statistics. However in the presence of available health facilities, low contraceptive prevalence and high proportion of stunted children in the community require urgent attention to address social determinants of health within the local context.

Keywords: Maternal and Child Health, Primary Health Care, Squatter settlement

18.68

CAUSE SPECIFIC MORTALITY FRACTION OF UNDER 5 CHILD MORTALITY IN A DEMOGRAPHIC SURVEILLANCE SITE IN KARACHI, PAKISTAN

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Introduction: Pakistan ranks 26th in Childhood mortality rates, globally. Pakistan, with other 4 countries is responsible for about half of the

deaths of children age under 5. Despite such burden vital registration system is not well established, health facilities are not easily accessible and mostly deaths occur at home, making identification of cause of death (COD) is difficult. In this study we present the most common CODs among children under 5 from a prospective cohort of children in one urban and four peri-urban settings of Karachi, Pakistan. *Methodology:* From Jan 2007-Dec 2012 under-5 mortality was identified by CHWs during their 3-monthly visits. A Research Assistant conducted Verbal Autopsies (VA). Each VA form was analyzed by 2 physicians, independently, and assigned a cause. VA is analyzed by a third physician in case two physicians do not agree on a cause. Cause Specific Mortality Fractions (CSMF) were calculated for each identified COD.

Results: 836(58.7%) neonatal deaths and 589(41.3%) children under-5 deaths (excluding neonates) were identified. Among neonates most common CODs were perinatal asphyxia(35%), neonatal sepsis/ meningitis(32%), pre-term birth complication(13%) and neonatal pneumonia(8%). For Children under 5 most common CODs were sepsis (20%), diarrheal disease (18%), Pneumonia (18%) and meningitis (9%).

Discussion: We identify CSMF of the most common causes of death among neonates and children under 5. Sepsis was one of the most common causes in both age groups. Strategies for prevention of these causes and making health facilities easily accessible will decrease the burden of this devastating outcome.

Keywords: Under 5 mortality, Neonatal Mortality, Cause of Death

18.69

RISK FACTORS FOR STILLBIRTHS IN A COHORT OF PREGNANT WOMEN IN LOW INCOME COMMUNITY SETTING IN PERI-URBAN KARACHI.

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Introduction: An estimated 2.6 million babies are stillborn every year yet stillbirth remains a neglected issue, invisible in statistics and policies and underfinanced in programs. In this study we present the risk factors for stillbirths from a prospective cohort of women in one urban and four peri-urban settings of Karachi, Pakistan.

Methodology: From Jan – Dec 2012, Community Health Workers (CHWs) identified pregnant women through 3 monthly household visits. After taking informed consent a detailed history including socio-demographic, obstetric and clinical characteristics was taken. Participants were followed till the pregnancy outcome viz a viz live birth, miscarriage or stillbirth. Univariate and multivariate logistic regression models were run to identify risk factors for stillbirth.

Results: In total 8987 singleton pregnancies were identified out of which 96.96% were live births and 3.04% were stillbirths. History of previous stillbirth(OR=2.33), mother's age >39(OR=2.01), nulliparity(OR=1) and women not allowed to visit health care facility alone(OR=1.25) increased the risk of current pregnancy ending in a stillbirth. Taking iron tablets(OR=1.53), receiving tetanus toxoid(OR=1.54), avoiding cigarette smoking and doing physical work(OR=0.67) showed a protective effect. Bleeding during pregnancy showed the strongest correlation (OR=7.57). While excessive bleeding(OR=1.89), convulsions(OR=3.02), abnormal fetal presentation(OR=3.92), prolonged labor(OR=2.3) and premature rupture(OR=2.02) of membrane at delivery were correlated with an increased risk of having a stillborn.

Conclusion: We identify important risk factors that put a mother at an increased risk for stillbirth. Preventive efforts can be undertaken by ameliorating these factors before conception and during antepartum and intrapartum period .

Keywords: Stillbirth, Risk Factors, Peri-urban Karachi