



آغا خان یونیورسٹی
THE AGA KHAN UNIVERSITY

*Health Sciences
Research Assembly 2011*



Abstract Book



December 14 and 15, 2011



Message from Dean, Medical College

As the University continues its journey of self-discovery, to broaden and further deepen its intellectual landscape and impact and to make AKU a truly research led institution of the 21st century, it is important to continue fostering and underpinning our research culture and support and forge new multidisciplinary and interdisciplinary collaborations.

AKU's first Health Sciences Research Assembly in 2005, was one step forward in this direction – to contribute to the knowledge society and to make research a cornerstone of AKU's very existence which is a hallmark of all leading academic institutions of the world. Over the last six years the Health Sciences Research Assembly has become an integral component of AKU's academic and scholarly activities with abstract submission and participation surpassing expectations year after year.

In order to continue sharing our ongoing and completed research work with great synergy, for exchange of ideas and dissemination of work in progress and for providing greater opportunities for collegial work across disciplines and specialties, this year again, Health Sciences Research Assembly 2011 has been organised as a two day event on December 14 and 15, 2011. It is heartening to note that faculty from both the Medical College and School of Nursing has again participated with even more zeal and fervour than previous years and has made significant contributions by submitting their research work both completed and ongoing in record numbers.

Here, I must also appreciate and congratulate the Organising Committee of the Health Sciences Research Assembly 2011 and its Scientific Committee for their invaluable contributions towards the success of the event. My special thanks and compliments to Dr M. Asim Beg for leading the Organising Committee this year too and for setting the bar to all time high with respect to quality and relevance of both the abstracts and the event.

Dr Farhat Abbas
Dean, Medical College
Aga Khan University

Message from the Interim Dean, School of Nursing

The culture of research is flourishing at Aga Khan University and is acting as a stepping stone for intellectual innovation, change and evidence based practice.

It is a good sign for the growth of the University.

I am pleased that AKU is holding the sixth Health Sciences Research Assembly this year from December 14-15, 2011.

I would encourage all faculty members at AKU in general and the faculty and students of the School of Nursing in particular to participate in this annual event with great enthusiasm and fervour. I am certain that this movement will not only provide opportunity to disseminate research findings but will promote dialogue and research collaboration among faculty and students from each department, and set the foundation for future multidisciplinary and interdisciplinary collaborative research.

Dr Rozina Karmaliani
Interim Dean, School of Nursing
Aga Khan University

Message from the Chair, Organising Committee

Research activities at the Aga Khan University have become an essential part of academic life. The Health Sciences Research Assembly is a regular academic forum for faculty, staff, and graduate and postgraduate students to show and share their research work.

The Health Sciences Research Assembly 2011 brings together research from varying backgrounds and the collaborative work reflects the increasing necessity of working together to enhance quality and impact. As in previous years we have received a large number of high quality abstracts which comply with our newly introduced quality criterion based on recognised international ethical standards.

I take this opportunity to thank and gratefully acknowledge my colleagues on the organising committee for their hard work.

On behalf of the Organising Committee I would like to thank all our colleagues and students for submitting their abstracts.

I am grateful for the support given by the Conference Secretariat, Research office and the IT and Public Affairs Departments for printing the posters and abstract book.

I would also like to thank Dr Rozina Karmaliani and the School of Nursing for their enthusiastic participation. Finally I would like to thank Dean of the Medical College, Dr Farhat Abbas for his guidance and unwavering support in making this event a success.

Dr M. Asim Beg
Chair, Organising Committee
Health Sciences Research Assembly 2011

Organising Committee Health Sciences Research Assembly 2011

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ABSTRACTS



AKU Health Sciences Research Assembly 2011

Abstract Book



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THE AGA KHAN UNIVERSITY

Health Sciences Research Assembly 2011



Abstract Book



December 14 and 15, 2011



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1.31

PREDICTORS OF LENGTH OF STAY AFTER TOTAL HIP REPLACEMENT IN A TERTIARY CARE HOSPITAL OF A DEVELOPING COUNTRY: A STEP TOWARD FAST-TRACK SURGERY

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Objective: Much of the cost of total hip replacement (THR) comprises the length of stay (LOS) in hospital and the reduction in hospital stay is often seen as an indication of increased efficiency. Given the increasing drive for cost-effective surgery, we aimed to identify the most important variables affecting length of stay after THR whilst controlling for potential confounding factors.

Method: We reviewed 199 consecutive patients who underwent elective unilateral THR in a tertiary care hospital in Pakistan between 1st January 2000 and 31st September 2010. **Results:** Median length of stay was 9 days. Majority of patients (63.8%) left hospital within 12 days, 28.2% within 3 weeks and 8% after 3 weeks. On multivariate analysis, age more than 65 years ($P = 0.003$), female gender ($P = 0.05$) and ASA grades 3 and 4 ($P < 0.0001$) were significantly associated with length of stay over 12 days.

Conclusion: Prolonged stay after THR is largely predetermined by case mix and this should be taken into account when units are compared for performance.

Keywords: Total hip replacement, Length of Hospital Stay

1.32

PERIOPERATIVE COMPLICATIONS OF TOTAL HIP REPLACEMENT: THE QUEST FOR RISK FACTORS

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Objective: The purpose of this study was to determine the frequency of complications of total hip replacement and identify associated risk factors.

Method: During the study period 199 patients underwent elective unilateral total hip replacement at the Aga Khan University Hospital. Patients were divided into cases and controls on basis of post-operative complications within 30 days of surgery. Significant risk factors at 5% significance level on univariate analysis were further analyzed by multivariate logistic regression.

Results: Postoperative complications occurred in 39 patients (19.6%); dislocation being most common in 13(6.5%) patients, followed by wound infection in four (2%), all of these patients required intervention. Other minor complications which were managed conservatively included wound infection (2.5%), urinary tract infection (2.5%), dislocation (1%), patients and pleural effusion and pneumonia (2%), deep venous thrombosis (0.5%) and myocardial infarction (0.5%). On Univariate analysis, ASA III and IV, peri-operative blood transfusion, preoperative hip deformity and post-operative bisphosphonate use were

significantly associated with complications. On multi-variate analysis, perioperative transfusion (P value = 0.22) and hip deformity (P value = 0.005) remained statistically significant risk factors for complications.

Conclusion: The results indicate that preoperative hip deformity and perioperative blood transfusion significantly influence the rates of complication after THR.

Keywords: Total hip replacement, Complication, Risk factors

1.52

DIAGNOSTIC ACCURACY OF RHEUMATOID FACTOR AND ANTI-CITRULLINATED PROTEIN ANTIBODY IN RHEUMATOID ARTHRITIS

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Objective: Current management of rheumatoid arthritis (RA) is shifting toward aggressive anti rheumatic therapy in an early phase of the disease; hence diagnostic tests with high specificity are desirable. Auto antibodies such as rheumatoid factor (RF) and anti-citrullinated protein antibody (Anti-CCP) can be detected in RA sera. Our aim was to compare the efficacy of RF and Anti-CCP in diagnosis of RA.

Method: A retrospective chart analysis of 98 patients whose biochemical testing of rheumatoid factor and Anti-CCP was ordered. The biochemical data from January 2010 to May 2010 was retrieved and charts were reviewed from the medical records department of Aga Khan University. Scoring and classification of RA was done using the 2010 Rheumatoid Arthritis Classification Criteria by American College of Rheumatology (ACR).

Results: Out of the 98 charts reviewed 82.7% were females. Mean age of the group was 46 ± 15 years. Scoring by ACR criteria showed 54 cases with RA. Out of the total 58 had both Anti-CCP and RF investigations available. Sensitivity and specificity of RF in diagnosing RA were 62.5% and 88.5% respectively. Sensitivity and specificity of anti-CCP in diagnosing RA was calculated to be 54.7% and 95.5% respectively. Whereas sensitivity and specificity of RF were 59.3% and 88.4% respectively.

Conclusion: Anti-CCP was found to be as sensitive as, and more specific than RF in RA. The use of anti-CCP antibodies may allow the clinical rheumatologist to better predict the diagnosis and prognosis of individual patients with RA.

Keywords: Anti ccp, rheumatoid factor, rheumatoid arthritis

1.77**HOUSING STRUCTURE AND VITAMIN D DEFICIENCY IN PREMENOPAUSAL FEMALES RESIDING IN KARACHI-PAKISTAN**

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Objective: To determine the association of vitamin D deficiency with type of housing structure in community dwelling premenopausal females

Method: A cross-sectional study was conducted in three, randomly selected communities of Karachi, Pakistan. Information including type of residence, presence of verandah/sahan/lawn/terrace, extent of availability of sunlight, was collected through a questionnaire. Association of vitamin D, iPTH and NTx with housing structure was determined by analysis of variance.

Results: Mean age and BMI of the 222 premenopausal females recruited was 32.4 ± 8.2 years and 25.6 ± 5.5 kg/m², respectively. Majority were living in apartments (42.3%) and town houses (27%) where as 7.7% and 23 % were residing in quarters and independent banglows. Eighty nine percent of the females were vitamin D deficient (mean vitamin D levels were 9.6 ± 11 ng/ml). Mean iPTH levels were 90.99 ± 69.8 pg/ml with secondary hyperparathyroidism in 39.6% cases. Mean NTx levels were 15.01 ± 5.8 nMBCE/L with high bone turnover in 16% cases. Significant linear association was observed between type of housing structure and serum Vitamin D values. With individuals residing in apartments and town houses having the lowest while those residing in bungalows having the highest levels of vitamin D.

Conclusion: Vitamin D deficiency with sHPTH is highly prevalent among premenopausal females in community in Karachi, Pakistan. Housing structures like apartments and town houses are the significantly associated with Vitamin D deficiency and sHPTH.

Keywords: Housing structure, Vitamin D deficiency, sHPTH

1.78**DETERMINATION OF BONE HEALTH STATUS IN COMMUNITY DWELLING FEMALES IN KARACHI, PAKISTAN**

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Objective: To determine the association of vitamin D status with bone turnover marker (NTx) in healthy premenopausal women residing in Karachi, Pakistan.

Method: A cross-sectional study was conducted in randomly selected communities (Saddar and Gulshan Town) in Karachi, Pakistan. Information related to socio-demographics (age, education and employment), sunlight exposure as well as dietary intake was collected. Calcium, phosphorous, albumin, alkaline phosphates, creatinine, SGPT, Vitamin D3, NTx and PTH were

also measured. Means for all observed parameters were calculated along with correlation between demographic and biochemical parameters.

Results: Mean age, BMI and waist circumference was 32.08 ± 8.35 years, 25.75 ± 5.47 kg/m² and 35.33 ± 5.76 , respectively. Most of the females were vitamin D deficient (91.50 %) with 8.99 ± 10.85 ng/dl mean vitamin D levels. PTH and NTx level were high in 39% and 16% females respectively. Mean vitamin D, PTH and NTx levels were not significantly different according to age groups and BMI but vitamin D deficiency is more prevalent in young and underweight females. Negative association was observed through correlation between vitamin D, PTH and NTx. Mean vitamin D, PTH and NTx levels were significantly different among females residing in Saddar and Gulshan town. High frequency of vitamin D deficiency with hyperparathyroidism was observed in females dwelling in Saddar town.

Conclusion: High frequency of Vitamin D deficiency is seen in females residing in Karachi, Pakistan with sHPTH and high bone turnover. Measures to combat the issue of D deficiency and its associated long latency effects are urgently needed.

Keywords: Vitamin D deficiency, bone health

1.85**IONIZED CALCIUM MEASUREMENT AND ITS CORRELATION WITH TOTAL CALCIUM, AND CALCULATED IONIZED CALCIUM-A COMPARISON OF MEASURED AND CALCULATED PARAMETERS**

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Objective: To determine the concentration of ionized calcium (iCa) using optimal conditions in lithium heparin and in gel tubes and to correlate the measured iCa with calculated iCa, total calcium (CaT) and 25-hydroxy vitamin D (25OHD).

Method: A study for optimization of methodology for iCa determination following CLSI guidelines was undertaken at the Section of Chemical Pathology, Aga Khan University from 1st June to 1st July 2010. Samples of iCa were collected from forty healthy laboratory workers with no known comorbid and with no obvious disturbances of calcium homeostasis after verbal consent. Blood sampling was performed after overnight fast. All subjects also had pH, total calcium, total protein and albumin. iCa was calculated using albumin and globulin values in a formula.

Results: The mean comparison of pH from both lithium heparin and gel tubes were statistically non significant (p value = 0.39). Comparison of mean iCa in both the evacuated tubes showed a statistically significant mean difference of 0.07 mmol/L. (p value = 0.000). Calculated mean iCa levels were 1.16 ± 0.1 mmol/L statistically different from measured mean iCa levels of 1.2 ± 0.03 . (p value = 0.001). Poor correlation of measured iCa with calculated iCa was observed (r=0.22, p value=0.16). Median value of 25OHD was 15.8 nmol/L (Range = 9.9 to 134.2 nmol/L). Ninety percent of the study participants were 25OHD deficient (25OHD <50 nmol/L) with mean levels 17.65 ± 9.77 nmol/L. Poor correlation was observed in vitamin D deficient

individuals between iCa and 25OHD levels which was statistically non significant. ($r = 0.117$, p value = 0.49).

Conclusion: When it is essential to evaluate the Ca status, direct measurement of iCa must be done but iCa values cannot predict vitamin D status. Gel tubes are the preferred choice for iCa estimation.

Keywords: calcium, vitamin D, gel tubes

1.105

EFFECT OF TERIPARATIDE ON BONE REGENERATE AFTER DISTRACTION OSTEOGENESIS

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Objective: The parathormone analogue teriparatide (PTH 1-34) has been used clinically to increase bone mass and reduce fracture risk in metabolic bone diseases and osteoporosis; there is increasing evidence that it may promote new bone formation during fracture healing. We intend to determine the effect of teriparatide on new bone formation in a rat model of distraction osteogenesis.

Method: 12 male Sprague-Dawley rats (weight ~250 gm) were allocated to two treatment groups, teriparatide and saline, both given subcutaneously for 3 weeks. Femoral distraction was done at a rate of 0.4mm/day for 3 weeks, followed by a further 4 weeks for consolidation. New bone formation was assessed using X-ray, DEXA and histology.

Results: X-ray: In the control group there was early stage of new bone formation, while in the teriparatide group all rats showed late stage of new bone formation. Scoring according to modified Lane and Sandhu system confirmed higher score in the teriparatide group. DEXA: The area (size) of new bone formed adjacent to the margins of the osteotomy site as well as the total bone mineral content of that new bone was significantly higher ($p < 0.05$) in the teriparatide group as compared to saline. HISTOLOGY: The teriparatide group appeared to have larger area of woven and trabecular new bone compared to controls, though statistical significance was not reached.

Conclusion: Our results suggest a promising role of parathyroid analogue therapy in distraction osteogenesis for promoting regenerate formation and consolidation

Keywords: Distraction Osteogenesis, teriparatide, Fracture Healing

1.106

FREQUENCY OF PARATHYROID HORMONE DISORDERS IN PATIENTS PRESENTING IN MEDICAL CLINIC PATIENTS

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Objective: To determine the frequency of parathyroid hormone (PTH) disorders in medical clinic patients

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

Results: Forty seven subjects were included in the study. Mean age was 49 (19) years; 53.19 % were females. Mean iPTH and 25OHD levels were 170.98 (269.62) pg/ml and 18.77(14.62) ng/ml respectively. Eighty percent had vitamin D levels below 30 ng/ml. Thirty six percent had normal iPTH (mean Ca 9.2 ± 0.67 mg/dl), 44.68% had high iPTH (mean Ca 8.5 ± 1.0 mg/dl) and 19.14% had low iPTH (10.0 ± 2.1 mg/dl). Significant difference was seen in mean Ca in the three PTH groups (p value 0.008). Mean iPTH was inversely related with Ca and 25OHD. Primary hyperparathyroidism was diagnosed in one case while 42.5% had secondary hyperparathyroidism (mean Ca 8.45 ± 0.99 mg/dl). Mean 25OHD in patients with hyperparathyroidism was 15.39 (13.5) ng/ml. Hypoparathyroidism was seen in 17%; 12.7% of the subjects had secondary hypoparathyroidism (mean Ca 11.26 ± 0.87 mg/dl), while 4% had primary hypoparathyroidism (mean Ca 6.7 mg/dl). Mean 25OHD in patients with hypoparathyroidism was 19.6(11.06).

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

Keywords: iPTH, calcium, 25OHD

1.120

HIP FRACTURE SURGERY: DOES TIME OF THE DAY MATTER

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Objective: A prevailing perception regarding night time surgery is that the probability of complications may be higher due to decreased availability of support staff, doctor fatigue and other logistical factors. However there is little data supporting this notion in hip fracture surgery and we studied this in the context of Intertrochanteric fractures fixed with dynamic hip screws (DHS).

Method: All patients who underwent DHS fixation for intertrochanteric fracture from January 2005 to December 2010 were included. Patients were divided into two groups. An after-hours group was defined as an operation done between 5:00 P.M. to 7:00 A.M. and a daytime group was defined as surgery done between 7:00 A.M. to 5:00 P.M. Data was analyzed using SPSS version 19.

Results: During this period 194 patients underwent DHS fixation. One hundred and fourteen patients were included in the daytime

group and 80 patients in the after-hours group. Tip apex index was found to be similar between the two groups. There was no difference in the rates of wound infection, length of hospital stay, post operative ambulation status, intra op blood loss, type of anesthesia, and mortality between the two groups. Two patients in the daytime surgery required revision surgery compared to 5 patients in the after-hours group, however this difference was not statistically significant.

Conclusion: Results of the present study do not suggest adverse outcome in patients operated for intertrochanteric hip fracture in after-hour timings compared to day-timings

Keywords: DHS, After hours, intertrochanteric

1.121

ORTHOPAEDIC SSI: IS THERE ANY ASSOCIATION WITH UT

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Objective: To determine, is there any difference in SSI rate in patients with UTI, who receive complete treatment versus those who receive incomplete treatment.

Method: Retrospective chart review of female patients > 50 years of age who underwent orthopaedic surgery during last 1 year i.e. from 1st July 2009 to 30th June 2010. The presence of any of the three features i.e. 5 or >5 leukocytes or nitrite positive or urine C/S positive was taken as UTI. Files reviewed for features of surgical site infection i.e. discharge from wound, redness and delayed wound healing. Data was collected on performance and analyzed on SPSS-17.

Results: Out of total 28 patients who receive incomplete treatment for UTI, 5 develop SSI while 20 patients who receive complete treatment, only 2 of them developed SSI. By comparing the two groups, the p-value came out to be insignificant (0.372)

Conclusion: There is a tendency of higher infection rate with incomplete compared to complete antibiotic therapy for UTI before orthopaedic implant surgery, but difference is not statistically significant. Larger study is required to show statistical significance.

Keywords: UT, SSI,

2.1 MANAGEMENT OF SINONASAL TUMORS: PROGNOSTIC FACTORS AND OUTCOMES – A 10 YEAR EXPERIENCE

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Objective: Sinonasal malignancies are said to be a highly heterogeneous group of cancers, accounting for less than 1% of all cancers and less than 3% of all upper aerodigestive tract tumors. Originating from any histologic components of the sinonasal cavity, the histopathology of these tumors is diverse. Accordingly, treatment options vary, surgery being the mainstay in most of them. Recurrence rates differs with each histological type of tumor, dependent on various factors

Method: Retrospective chart review from 51 patients meeting the inclusion criteria. Study period was about 10 years, from 2000-2010. Data was analyzed using SPSS 17

Results: Majority of the sinonasal tumors were squamous cell carcinomas involving the maxillary sinus. Locoregional recurrence was more frequent in patients with positive neck nodes

Conclusion: Sinonasal tumors have a loco-regional recurrence rate of 64%. Nodal and histological status of sinonasal malignancies have significant association with locoregional recurrence

Keywords: Tumor, malignancy

2.2 RELATIONSHIP OF TUMOR THICKNESS WITH NECK NODE METASTASIS IN BUCCAL SQUAMOUS CELL CARCINOMA: AN EXPERIENCE AT AKUH.

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Objective: Oral cancer is the most frequent head & neck malignancy and has local, regional and distant spread. Neck nodal metastasis carries significant prognostic value. Different parameters have been studied to look for occult metastasis in neck nodes. One such parameter is tumor thickness which may indicate neck node metastasis.

Method: Retrospective chart review of 102 patients; at Aga Khan University hospital, Karachi, with biopsy proven squamous cell carcinoma of oral cavity regardless of T staging but N0 necks were included in the study.

Results: The risk of neck node metastasis in buccal squamous cell carcinoma increases 35.5 times for tumor thickness of = 2mm, provided the confounding variables remain constant
Conclusion: Tumor thickness is significantly related with neck nodal metastasis in buccal squamous cell carcinoma, keeping in view of the age of patient and size of the tumor.

Keywords: Tumor, neck node

2.3 INCIDENCE OF DEEP VEIN THROMBOSIS AND PULMONARY EMBOLISM IN HEAD NECK CANCER PATIENTS: A TERTIARY CARE EXPERIENCE IN PAKISTAN

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Objective: Although venous thromboembolism (VTE) is more often seen with morbidity and mortality in various surgical specialties, we aim to determine the incidence of VTE in head and neck cancer surgery patients

Method: 413 patients who underwent head neck surgery procedures between 2000 to 2010 were reviewed retrospectively. All patients with head neck surgery had received thromboprophylaxis (i.e., compression stockings and subcutaneous heparin). Patient demographics, operating time, and length of hospital stay were analyzed. The incidence of symptomatic deep vein thrombosis (DVT) and pulmonary embolism (PE) during the initial postoperative hospitalization was assessed.

Results: Twelve patients were identified who developed venous thromboembolism. Three patients developed DVT, nine developed PE. The incidence of DVT and PE was 0.72% and 2.17% respectively. Interestingly, all of these patients had undergone excision of extensive head and neck cancers accompanied by a reconstructive procedure. Patients who developed PE had a longer hospital stay as compared to those who only had DVT. There were overall three mortalities from nine patients who developed PE.

Conclusion: VTE, although has a low incidence, is a well known complication of extensive head and neck surgeries with life threatening outcomes. We recommend early mobilization and physiotherapy with the possible aid from appropriate mechanical and pharmacologic thromboprophylaxis.

Keywords: Venous thromboembolism, deep vein thrombosis, pulmonary embolism

2.4 TRENDS OF INFECTION IN FEBRILE NEUTROPENIC PATIENTS WITH HAEMATOLOGICAL MALIGNANCIES AT A TERTIARY CARE HOSPITAL.

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Objective: To assess the frequency and current pattern of infection along with outcome of febrile neutropenic patients with acute leukemias with review and comparison of past studies in Pakistan.

Method: A retro-prospective analysis of adult patients with acute leukemias who developed febrile neutropenia during the period January 2009 to August 2010 was conducted. An in-house questionnaire was filled to obtain information regarding patient's diagnosis, culture positivity, culture sensitivity and

outcome through chart review and laboratory system access. *Results:* A total of n=99 febrile neutropenic episodes were recorded in 48 patients among which n=19(39.6%) had ALL, n=27(56.2%) had AML and n=2(4%) had Burkitt's leukemia. There were n=31(64.6%) males and n=17(35.4%) females. The median age was 32 years (range 16-65yrs). Positive cultures were recorded in n=71 (70.5%) episodes of febrile neutropenia with 47 blood, 10 line, 5 urine and 3 tracheal/BAL cultures. Gram negative infections accounted for 69.9% and gram positive for 27.4%. Fungal culture was positive in 2.7%. E-coli was most common organism isolated in these patients. Coagulase negative staphylococci were most common in the gram positive group. 38.4% of the positive cultures were sensitive to the first line antibiotics, whereas 61.6% sensitive to the second line antibiotics. The overall mortality was n=16(15.8%) in which n=10(83%) had positive cultures

Conclusion: Gram negative bacteremia is prevalent in our setup which is comparable to the data reported from other centres in Pakistan. Majority of the organisms are sensitive to second line antibiotics. Frequent review of infectious pattern in neutropenic patients is recommended to update the current trends of infectious etiology in our setup.

Keywords: Infection, febrile, leukemia

2.5

FOUR YEAR EXPERIENCE OF SARCOMA OF SOFT TISSUES AND BONES IN A TERTIARY CARE HOSPITAL AND REVIEW OF LITERATURE

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Objective: Sarcoma encompasses an uncommon group of cancer and the data is insufficient from Pakistan. We report our four year experience of Sarcoma of soft tissues and bones. *Method:* This cross sectional study was carried out at Aga Khan University Hospital from 2004 to 2008. The patients were divided into two groups from the outset i.e. newly diagnosed and relapsed group and separate sub group analysis was conducted *Results:* Out of 93 newly diagnosed patients, 58 belonged to bone sarcoma and 35 to soft tissue sarcoma group. While for relapsed patients, 5 had soft tissue sarcoma and 9 had bone sarcoma. Mean age was 32.5 years. At presentation, approximately two third patients had localised disease while remaining one third had metastatic disease. The Kaplan Meier estimate of median recurrence free survival was 25 months, 35 months, and 44 months for Osteogenic sarcoma, Ewing's sarcoma and Chondrosarcoma respectively. For Leiomyosarcoma and Synovial sarcoma, it was 20 and 19months respectively. The grade of the tumour (p=0.02) and surgical margin status (p=0.001) were statistically significant for determination of relapse of the disease

Conclusion: The median recurrence free survival of patients in our study was comparable to the reported literature but with significant lost to follow rate. Further large-scale,

multi centre studies are needed to have a more comprehensive understanding of this heterogeneous disease in our population

Keywords: Sarcoma, Recurrence free survival, Amputation

2.6

ELEVEN YEAR EXPERIENCE OF GESTATIONAL TROPHOBLASTIC NEOPLASIA AT A TERTIARY CARE CENTRE

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Background: Variable incidence and clinical course of Gestational Trophoblastic Neoplasia (GTN) has been reported in few published studies from different parts of the Pakistan but none has mentioned the magnitude of Persistent Trophoblastic Disease (PTD).

Objective: To study the natural course, outcome and treatment experience of GTN in a diverse cohort of patients referred to a Tertiary Care Centre.

Method: Data was collected from 1998 to 2009 for 54 patients with gestational Trophoblastic Disease (GTD) presented to Aga Khan University Hospital. It was analyzed for 48 patients for different clinical variables and outcome using SPSS version 16.0.

Results: The frequency of GTD was 1.3 in 1000 pregnancies while it was 62.5% for PTD. The mean age of patients was 29 years. The initial diagnosis was established on the basis of ultrasound and Beta subunit of Human Chorionic Gonadotrophins (β hCG) levels. The uterine size had linear co-relation with the level of the β hCG at presentation. The plateau in level of hCG was statistically most significant variable for determination of PTD in the multivariate analysis

Conclusion: In contrast to local data, our study showed an incidence of GTD comparable to western figures but with higher frequency of persistent Trophoblastic disease. There was a trend towards use of multidrug regimen even in low risk PTD. Further studies with long term follow up are needed for exploring the pattern of resistance to single agent chemotherapy and rationalizing multidrug regimen for low risk PTD group

Keywords: Gestational Trophoblastic Disease, Human Chorionic Gonadotrophins (β hCG), Chemotherapy

2.7

FACTORS INFLUENCING THE OPINION OF INDIVIDUALS IN DETERMINING TUMOUR SPREAD AFTER BIOPSY

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Objective: People often have concerns regarding tumour spread after biopsy which leads to a delay in seeking expert medical advice. The data regarding this perception is scanty. Therefore,

we conducted this cross sectional study to explore the beliefs and perceptions of individuals regarding tumour spread after biopsy and the basis of those beliefs

Method: The survey was conducted in outpatient areas of two different tertiary care hospitals of Karachi namely Aga Khan University Hospital Karachi (AKUH) and Karachi Institute of Radiotherapy and Nuclear Medicine (KIRAN). The sample size of the study was 400. The responses were recorded through a questionnaire. There were 200 responders from Aga Khan's Consulting Clinic and 100 each from Aga Khan's Oncology Clinic and KIRAN.

Results: Only 21% of the respondents chose biopsy as the best test for diagnosis of cancer. The level of education was statistically significant in making this choice of answer ($p=0.03$) only in univariate analysis. 149 respondents (37 %) had a firm belief that biopsy could lead to spread of tumour. They considered tumour disturbance after biopsy as a major factor leading to its' spread.

Conclusion: Our study revealed that awareness regarding cancer diagnosis and biopsy is lacking among general public and it does not co-relate well with the level of formal education. These misconception and taboos need to be addressed in public seminars and in the media in order to increase awareness which could facilitate prompt diagnosis.

Keywords: Biopsy, belief, tumour spread

2.8

CHROMOSOMAL ABNORMALITIES IN PRIMARY MYELODYSPLASTIC SYNDROME PERFORMED BY CONVENTIONAL CYTOGENETICS

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Objective: To determine the frequency of cytogenetic abnormalities in patients diagnosed as primary myelodysplastic syndrome using conventional karyotyping in Pakistani population
Method: Patients of all age and sex who fulfilled the WHO criteria for MDS were included. Cytogenetic analysis was conducted at the time of diagnosis. Patients who had previously received chemo/radiotherapy, and those with MDS secondary to a previous malignancy were excluded from analysis. Chromosome identification and karyotype description was done according to the International System for Chromosome Nomenclature (ISCN, 1995).

Results: A total of $n=112$ patients were diagnosed as primary myelodysplastic syndrome. $N=50$ patients had their karyotype done at the time of diagnosis. Of the $n=50$ patients, $n=33$ were males (66%) and $n=17$ were females (34%). The median age was 58 years (range 1- 75 years). Only one patient was under 15 years of age. Out of $n=50$, $n=5$ (10%) were classified as RA, $n=2$ (4%) as RARS, $n=23$ (46%) as RCMD, $n=1$ (2%) as RCMD-RS, $n=9$ (18%) as RAEB-I and $n=10$ (20%) as RAEB-II. Among the 50 patients, $n= 29$ (58%) showed normal karyotype and $n=21$ (42%) showed clonal karyotypic abnormalities at diagnosis, of which, $n=7$ (14%) had single, $n=6$ (12%) had double and $n=9$ (18%) has complex cytogenetics. The common abnormalities found were, trisomy8 in $n=3$ cases(6%), complex trisomy8 in $n=1$ case(2%), $-7/del(7q)$ (1/1cases) 4%, $-Y$ in $n=2$ cases (4%),

complex 5q in $n=2$ cases(4%), del 11q in $n=1$ case (2%), inversion 9 in $n=1$ case(2%), trisomy 19 in $n=1$ case(2%) and other abnormalities in $n=8$ cases(16%).

Conclusion: In contrast to del 5q which is the most reported cytogenetic abnormality in India, USA and European countries, trisomy 8 is found to be most common in our study population followed by the complex cytogenetics. Large prospective studies are needed to report most common abnormality prevalent according to classification of Myelodysplastic syndrome.

Keywords: Primary, Myelodysplastic syndrome, cytogenetics

2.10

END OF LIFE CARE IN CANCER PATIENTS AT A TERTIARY HOSPITAL IN PAKISTAN

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Objective: Introduction/ Background: The diagnosis of end stage incurable cancer can be devastating for the family in anticipation of losing their loved one in addition to the financial burden associated with the hospital care. Aggressive measures in terms of investigations and treatment are not always justified in a person approaching end of life. It is sometimes family's perception that doctors are facilitating death by not doing much. But extensive investigations/ antibiotics/nutrition may not benefit a patient dying with incurable illness. By this study we explored our current practices, the factors leading to order or withhold aggressive measures, and overall family's perception about this. Objectives: To explore the current oncology practices of different diagnostic/therapeutic procedures and aggressive measures at the end of life and family's perceptions about this.

Method: Consecutively admitted terminally ill patients treated in oncology service of AKUH in whom death seemed imminent were included. Performa A was filled by the investigating person by reviewing the charts of expired patients and Performa 'B' required consent of the family or decision making person of the family.

Results: Interim analysis of 25 patients receiving end of life cancer care revealed that the predominant reason for hospital admission was pain management (28%). Cost of hospital stay varied from 1 to 6 lacs which was borne by the patient and family in 16 (64%), by company in 7(28%) and by welfare support in 2 (8%) cases. All decision makers were aware of the meaning of the term End of life care but still felt strongly the need for continuing aggressive measures in the last few days of life. 16 responders (64%) felt the need to provide nutrition through parenteral or nasogastric route. 13 responders (52%) agreed with the option for providing end of life care at home if adequate and satisfactory home based palliative care could be guaranteed.

Conclusion: General goals of care need to be established in a dying cancer patient. Clinicians should discuss specific treatments with patient/families and consider their preference for a scenario-specific intervention.

Keywords: End of life care, Aggressive measures, Family's perception

2.11 EXTRACUTANEOUS MELANOMA – A SINGLE CENTER EXPERIENCE

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Background: Extracutaneous malignant melanoma (EMM) is a very rare presentation of malignant melanoma comprising of 4% -5% of cases. It has an atypical clinical presentation, therefore the diagnosis is difficult to establish. Prognosis is particularly grim. Here we report a single center experience in diagnosis and management of EMM **Objective:** To explore the patterns of presentation and outcomes of patients with extracutaneous malignant melanoma in Aga Khan University Hospital **Method:** We reviewed the medical records of patients diagnosed with EMM at Aga Khan University in the last 10 years. **Results:** There were eight patients with EMM. These patients were analyzed with regard to the site of presentation, age, sex, presence of lymph node or distant metastasis, primary treatment modality and outcome Male to female ratio was 1:1. The median age at diagnosis was 51 yrs (range 28-89 yrs). The most common site of presentation was the anal canal (3 patients). Other sites included colon (1 patient), vaginal wall (1 patient), eye (1 patient), nasal cavity (1 patient) and thumb (1 patient). Two patients had evidence of distant metastasis at the time of presentation. Five patients had locally advanced disease with either evidence of local extension and/or lymph node metastasis. In the non-metastatic setting, surgical resection was the most common choice as the initial treatment modality. All of the patients relapsed. The median time to progression 3.1 months (range: 2.3 months – 56months). The most common sites of recurrence was local relapse and to the draining lymph nodes. Dacarbazine was the initial treatment of choice at the time of metastasis. Most of the patients were lost to follow up. Follow up data beyond first relapse was only available on 3 patients. Two of these patients had a long disease free interval of greater than 3 years. All three patients eventually succumbed to the disease.

Conclusion: EMM is a very difficult disease to diagnose and treat. Majority of the patients present with advanced disease. Due to lack of established guidelines for management there is no standard of care

Keywords: Extracutaneous malignant melanoma, Treatment modality, Outcome

2.12 PRIMARY BURKITT'S LYMPHOMA OF APPENDIX - A CASE REPORT AND REVIEW OF LITERATURE

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Introduction: Involvement of appendix in Burkitt's lymphoma is a rare occurrence. Primary appendiceal Burkitt accounts for

only 0.015% of all gastrointestinal lymphomas. Only nine cases have been reported previously, eight of them were males and one female. Approximately 50-80% of adult patients with Burkitt's lymphoma can be cured with intensive chemotherapeutic regimens. We describe here the tenth case of an adult male with appendiceal Burkitt's mimicking acute appendicitis. **Case Report:** A 27 years old gentleman, presented to emergency room with severe right iliac fossa pain and vomiting. Clinical diagnosis of acute appendicitis was made and appendectomy was performed. On gross examination, appendix appeared to be thickened and involved by a tumor. Lymphadenopathy was not identified. Microscopically, there was a characteristic starry sky appearance. CD20 was strongly positive and Mib-1 was positive in 100% of cells. Additionally, CD 10 was positive and Bcl-2 was negative. These markers were most consistent with a diagnosis of Burkitt cell lymphoma. Staging work up including CT scan of chest, abdomen and pelvis only revealed cecal thickening and sub centimeter para-aortic lymph nodes. Bone marrow aspirate and trephine was essentially normal. The only laboratory abnormality was a raised serum LDH level. In view of high risk disease (extranodal disease and elevated LDH), he was treated with protocol developed by Magrath et al (LY06) with four cycles of CODOX-M alternating with IVAC in combination with Rituximab. He tolerated this aggressive regimen quite well with post-treatment scans showing complete resolution of cecal thickening. Response was consolidated with IFRT (involved field radiation) (3600Gy in 20 fractions). He is currently in follow up with the most recent scans showing no evidence of disease at 6 months. Our case is unique in the sense that it is the first case of appendiceal burkitt's lymphoma reported in the south east asian region.

Conclusion: Although rare, appendiceal burkitt's can mimic acute appendicitis and treatment should be started promptly due to rapid doubling time.

Keywords: Burkitt's lymphoma, Acute appendicitis, CODOX-M

2.13 AORTIC THROMBOSIS IN A 55-YEAR-OLD PATIENT WITH COLORECTAL CARCINOMA AND LIVER METASTASES: A CASE REPORT AND REVIEW OF LITERATURE

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Introduction: Colorectal Carcinoma (CRC) is the fourth most common cancer in men and the third most common cancer in women worldwide. The increased risk of thromboembolic events associated with invasive procedures, chemotherapy, immobilization and malignancy induced hypercoagulable state are well documented in Literature. Venous thrombi are often associated with CRC and have been reported in literature, but aorta is usually not a common site of thrombus formation in the setting of CRC. We report a case of a descending aorta thrombus in a patient with CRC and liver metastases, which arised without any surgical intervention or chemotherapy and has not been reported previously in literature.

Conclusion: Aortic thrombosis may have devastating complications like peripheral embolism and may cause angina and ischemia, so it requires prompt recognition and treatment.

Keywords: Colorectal Carcinoma, Aortic, Thrombosis

2.14

PAPILLARY LESIONS OF BREAST: A CLINICOPATHOLOGICAL AND IMMUNOHISTOCHEMICAL STUDY IN PAKISTANI POPULATION

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Objective: To describe the clinicopathological features of different papillary breast lesions seen in our population and to analyze expression for Anti-smooth muscle actin and cytokeratin 5/6 immunostain in these lesions.

Method: Clinicopathological data of 100 cases of papillary neoplasm is studied along with results of immunohistochemical stains (Anti-smooth muscle actin and cytokeratin 5/6). Hematoxylin and eosin stained slides of all cases were reviewed to see the morphological features of the cases.

Results: Of the 100 cases studied 83 cases were Papillomas, 08 cases were papillary carcinoma in-situ and 9 cases were of Invasive papillary carcinomas. All the patients were females. Papillomas were mostly seen in fifth decade, presenting as nipple discharge while papillary carcinoma in-situ and invasive papillary carcinomas presented in sixth decade, as a breast lump. Morphological features seen in papillomas were different from those seen in the papillary carcinomas. Expression of cytokeratin 5/6 (basal cytokeratin) and Anti-smooth muscle actin immunostains was moderate to strong in cases of papillomas while it was weak to absent in cases of papillary carcinomas in-situ and invasive papillary carcinomas.

Conclusion: Papillary lesions mostly occurs in fifth and sixth decades of life with benign lesions occurring in a slightly younger age group than their malignant counterpart. Our study validates that in addition to the morphological features, basal cytokeratins (cytokeratin 5/6) and myoepithelial cell markers (Anti smooth muscle actin) are helpful in order to arrive at the correct diagnosis in difficult cases as well as in cases of papillary lesions encountered on core biopsies

Keywords: Papillary neoplasms, Myoepithelial markers

2.15

ROLE OF FATTY ACID CHAIN LENGTH ON THE INDUCTION OF APOPTOSIS BY NEWLY

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Objective: Green tea, extracted from *Camellia sinensis*, is a commonly consumed beverage worldwide second only to water. It contains multiple polyphenolic components, which are reported

to have chemo-preventive effects against cancer in vitro and in vivo. (-)-Epigallocatechin gallate (EGCG) is one of the major polyphenol of green tea. Numerous investigations have shown the role of EGCG against cancer. However, it has been demonstrated that in rat model only 0.2% of the orally administered EGCG was absorbed from the intestine and the rest being absorbed after degradation by the intestinal microflora. The physical properties and pharmacokinetics of the catechins were improved by the addition of various fatty acids at the C-3 hydroxy group of (-)-epigallocatechin. The purpose of our study is to do screening and examine the molecular mechanism of apoptosis induce by the active catechin derivatives. **Method:** Apoptosis were examined by annexin V FITC/PI staining and by DNA fragmentation assay, Flow cytometry was performed for mitochondrial membrane potential, reactive oxygen species generation and for caspase 3 activity, western blotting was performed for proteins

Results: We found that one of the catechin conjugated with capric acid [catechin-C10] was most potent to induce apoptosis in U937 cells. C10 treatment resulted in a significant increase in reactive oxygen species (ROS) formation, mitochondrial membrane potential (MMP) loss, cytochrome c release caspase-9 and caspase-3 activation. In addition to this C10 also activated extrinsic pathway significantly as evident by time-dependent increase in Fas expression and caspase-8 activity. C10 mediated cleavage of Bid may be an important event for cross talk between intrinsic and extrinsic signaling. Treatment of cells with pan-caspase inhibitor significantly inhibited apoptosis indicating that caspases are playing key role.

Conclusion: In short our results showed that the optimal fatty acid side chain length is required for the apoptosis inducing activity of catechin derivatives in U937 cells.

Keywords: Catechin, Reactive oxygen species, Apoptosis

2.16

DEALING WITH DIVERSE DEMOGRAPHICS AND PATTERNS OF FAILURE OF SQUAMOUS CELL CARCINOMA OF ESOPHAGUS IN THE ERA OF CHANGING SPECTRUM OF DISEASE

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Objective: The best combination of multimodality treatment for esophageal cancer remained intangible especially for squamous pathology in the era of changing spectrum of the disease. We conducted this study to study the diverse demographics of our patients and to report difference in recurrence pattern and outcome between two different pathologies of esophageal cancer. **Method:** The charts for this cross sectional study were reviewed from 2003 to 2008. The univariate analysis was done for categorical variables of histology, gender, stage of the disease, post-surgical margin status and treatment received followed by Multivariate analysis. The progression free survival (PFS) and Overall survival (OS) were obtained by Kaplan Meier survival curves. A stepwise Cox regression procedure was done to assess the relative influence of prognostic factors on OS and PFS

Results: 117 patients were analysed and the squamous cell carcinoma was the predominant histological subtype i.e. 97 patients (82.9%) had squamous cell carcinoma while 20 (17.1%) had adenocarcinoma. The mean age was 52.5 years. The disease was operable at presentation in 64 patients (54.7%), locally advanced in 25 patients (21.4%) and metastatic in 28 patients (24%). The median follow up was 16 months. There were 47 patients who were lost to follow before 16 months and out of remaining 37 patients 21 had a recurrence. The pattern of recurrence, however, was not very different between local and distant. The median progression free survival for squamous and adenocarcinoma was 24 months and 36 months respectively but was not statistically different ($p = 0.99$). The Cox-regression analysis of PFS and overall survival was also not statistically significant between two pathologies

Conclusion: This highlighted the diverse features and management issues of esophageal cancer at our institution and the necessity for recruiting our patients in international multicenter clinical trials to define the best treatment for this deadly disease with consideration of our epigenetics factors

Keywords: Esophageal cancer, recurrence, survival

2.18

ASSOCIATION OF CYCLOOXYGENASE2 ENZYME OVER EXPRESSION WITH HER2 GENE AMPLIFICATION IN BREAST CANCER

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Introduction: Association of Cyclooxygenase2 Enzyme Over Expression With HER2 Gene Amplification in Breast Cancer
Objective: To assess COX2 expression in HER2 positive breast cancer patients.

Method: For this study 100 formalin fixed paraffin embedded tissue samples were collected from female breast cancer patients. Sections of 4-5 μm were cut for immunohistochemistry. Immunostaining was performed using COX2 specific monoclonal antibody (clone Cx-294). In addition, prognostic marker including ER, PR, and HER2 were immunostained using published protocols.

Results: Immunohistoactivity of COX2 was evaluated in 100 specimens. Mean age of the patients was 50 years ± 12.57 ; of the total samples, 56 % were negative for COX2 expression, 19% showed weak positivity; whereas 3% samples exhibited focal and 21% samples were strong positive for COX2 staining. Total immunoreactivity was observed in 43% tumors. COX2 staining was significantly associated with ductal tumor type. Elevated COX2 expression was more frequent (50%) in high grade tumors and ER negatives 69.2%.

Conclusion: HER2 positive patients with ductal tumor type can benefit from COX2 inhibitors because of significantly higher COX2 expression levels.

Keywords: HER2, COX2, immunohistochemistry

2.20

CLINICAL OUTCOMES OF FAMILIAL BREAST CANCER PATIENTS

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Objective: Introduction: In Pakistan, breast cancer is one the most frequent malignancy in females exhibiting the highest age standardized rate (60 per 10000) among Asian population. Objective: The objective of this study is to compare disease free survival time of familial and non-familial breast cancer patients and the histopathological feature.

Method: Overall, 53 breast cancer were recruited; 23 did not reported family history whereas 30 patients exhibited moderate family history. Fisher exact and Chi square test were used. Disease free survival was calculated by Kaplan Meier method.
Results: Disease free survival was compared by Kaplan Meier survival analysis. The median follow up time was 11 years and disease free survival time at 5 and 10 years were 60% and 48% respectively patients with strong family history versus 70% for patients without family history. The analysis showed that initial disease free survival time at 5 years for familial breast cancer was 60% but decreased with time due to higher rate of relapse (41.4%). In this study, IDC was most common tumor type and equally distributed in both groups. Higher frequency of ER negative (50%) and PR negative (50%) was reported in familial group.

Conclusion: Death specific rate of familial breast cancer patients is higher than non-familial breast cancer

Keywords: Breast cancer, survival, familial

2.21

INVOLVEMENT OF THREE AND FOUR BREAKPOINT CHROMOSOMAL REARRANGEMENTS IN PHILADELPHIA POSITIVE CML PATIENTS IN PAKISTANI POPULATION

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Objective: To study the involvement of three and four breakpoint chromosomal rearrangements in Philadelphia positive CML patients and to find out the percentages of chromosomes that are involved to the greatest and least extent in complex variant translocations, and ratios in males and female patients.
Method: Cytogenetic studies were performed on metaphase cells derived from 24 hours unstimulated bone marrow aspirate or peripheral blood cultures. Colcemid (0.1 $\mu\text{g}/\text{ml}$) was added for 1 hour to cultures after 24hr incubation at 37°C and 5% CO₂. After incubation in hypotonic solution (0.07M KCl) for 10 min, cells were fixed with Corney's fixative (3 part methanol to 1 part glacial acetic acid). Metaphase cells were G-banded and karyotypes were interpreted according to 2009, ISCN.

Results: In 6 month of our study; out of 105 Philadelphia positive Pakistani patients, 20 patients were found to have three and four breakpoint complex variant translocation involving chromosomes 1, 2, 4, 6, 7, 8, 11, 12, 13, 14, 15, 16, 17, 19 and 21. G-banding showed a reciprocal three-way and four-way translocation involving bands 1q25 and 1q35, 2p22, 4p16, 6p23, 7q11.2, 8p11.2, 11q23, 12p11.2, 13q14, 14q32, 15q24 and 15q25, 16q11.2, 17q11.2, 19q13.3, 21q10 and 21q22 and Xq24. 4 patients had hyperploidy alongwith t(9;22)(q34;q11.2) and remaining had simple or mosaic t(9;22)(q34;q11.2)translocation. In our study chromosome 4 has the greatest involvement with 13.63%, while chromosome 2,8,11,14 and X has the least involvement with 4.54%. Males patients had the greater involvement in such translocations than females while hyperploidy were found in greater ratio in females than males. **Conclusion:** Chromosome 4 has the greatest involvement in complex variant Philadelphia positive patients. Males have greater involvement in such translocations than females in Pakistani population.

Keywords: CML, Complex variant translocations, 3-4 breakpoint rearrangements

2.22

UTILITY OF CA15-3 AS A SERUM MARKER IN BREAST CANCERS AT A TERTIARY CARE HOSPITAL

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Objective: To assess the clinical utility of tumor marker CA15-3 in breast cancer at a tertiary care hospital.

Method: A retrospective analysis of the medical records of all patients who were tested for CA15-3 at the clinical laboratory of The Aga Khan University Hospital was performed. Data was collected using a predetermined questionnaire. Records were reviewed for symptoms at presentation, extent of disease using various imaging techniques, final histological diagnosis with prognostic factors such as tumor size, 5Her2/Neu, 5ER and 5PR status, clinical stage and grade. CA15-3 levels were determined by microparticle enzyme immunoassay. A cutoff of 30 was used. The data was analyzed using SPSS v. 19.

Results: Ninety four patients were included in our study, with a mean age of 50.4 years. The mean CA15-3 level at diagnosis was 38.81, with elevated CA15-3 value in 16 patients. Mean post therapeutic level at remission was 30.34. CA 15-3 Levels at diagnosis were significantly high among patients Her/2Nue Status +2 (p= 0.008). High CA 15-3 levels at diagnosis were observed in patients at Clinical Stage IV (p< 0.001) and with Tumor Grade III (p<0.05). CA 15-3 post therapeutic levels and levels at remission were significantly different among patients at clinical stage I - IV.

Conclusion: Significant association of CA 15-3 Levels at diagnosis was observed with clinical Stage and tumor grade. CA15-3 is an effective disease marker for assessing locally advanced breast cancer and in remission.

Keywords: Cancer, breast, CA15-3

2.23

SURGERY FOR GASTRIC CANCER IN PAKISTAN: A DESCRIPTION OF PRESENTATION, SURGICAL TREATMENT AND IN-HOSPITAL OUTCOMES.

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Objective: Surgery for gastric cancer is often curative. However, there is insufficient data from Pakistan depicting the presentation and prognosis of patients undergoing gastric cancer surgery.

Method: We reviewed medical record of patients undergoing surgery for gastric adenocarcinoma from 1995 to 2010. A standardized questionnaire was used to collect information on demographics, presentation, risk factors, tumor characteristics, management and post-operative outcomes. Descriptive analyses were performed.

Results: We reviewed 86 records. The mean age was 51 years (± 11.7), 80% were male and the mean BMI was 22(± 5.5) Kg/m². Common presenting complaints were abdominal discomfort (64%), persistent nausea and vomiting (65.1%), loss of appetite (52.3%) and altered bowl habits (61.6%). Mean duration of symptoms was 8(± 16) months. 57% had significant examination findings. Risk factors were present in 70% including H Pylori infection (38%), type A blood group (51%) and smoking (37%). The tumor was mostly involved in the pylorus (61%) and antrum (49%). Only 10% surgeries were palliative. Subtotal gastrectomy was the most common procedure (40%). 52% of tumors were poorly differentiated on histopathology and 71% had a stage of 3 or more. Postoperative complications occurred in 26% patients. Median length of hospital stay was 12 days and only 1 patient died during hospital stay.

Conclusion: Patients with gastric cancer often present late and after several months of symptoms. Most patients have significant history and exam findings and regular screening maybe beneficial. In-hospital outcomes after gastric cancer surgery are good; however a study on long term survival is warranted.

Keywords: gastric adenocarcinoma, gastrectomy

2.24

VIRAL MARKER NEGATIVE AND VIRAL MARKER POSITIVE HEPATOCELLULAR CARCINOMA: DOES THE DIFFERENCE EXIST? EXPERIENCE OF LAST 10 YEARS AT TERTIARY CARE HOSPITAL OF PAKISTAN

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Objective: HCC is the fifth most common cancer representing almost 6% of all newly diagnosed cancers globally. This study estimate the prevalence and trends of viral marker negative HCC and to compare the clinico-pathological, radiological characteristics, stage of HCC, applicability of treatment at diagnosis and prognostic factors among patients with viral marker negative and viral-HCC visiting The Aga Khan university hospital (AKUH), Karachi, Pakistan.

Method: This was a retrospective cross sectional study. Patients = 18 years, already diagnosed to have HCC visiting the Gastroenterology ward, clinics of AKUH during January 1999 to December 2009 were identified from our data base by using ICD code 1550. The diagnosis of HCC was made by combination of elevated alfa fetoprotein (AFP) (>20ng/ml) with characteristic features of HCC on triple-phase computerized tomography (CT) scan/ magnetic resonance imaging (MRI) or in the absence of elevated AFP when the concurrent results were found on CT scan/MRI, in the presence of background chronic liver disease, with or without histological verification. Staging and classification of HCC was done by lesion size, Okuda classification and macroscopic types. Binary and multinomial logistic regression was used to analyze the data.

Results: 700 patients with cirrhosis and HCC visited AKUH during 1999 and 2009. There were 546 (84.7%) viral-HCC and 99(15.3%) viral marker negative HCC. Among viral-HCC group the underlying etiology of cirrhosis was HCV in majority (67.9%) of the cases followed by HBV in 119(21.8%). However, concomitant HBV and HDV or HBV with HCV or HBV with HCV and HDV were found in 56(10.3%) cases. The overall mean child's score and Okuda score at presentation were 9.29 ± 2.31 (range 5-15). 424(65.7%) patients had AFP = 20 ng/ml and 266(41.2%) had AFP = 200 ng/ml. Majority (62.8%) patients had advanced HCC on presentation and right hepatic lobe was involved in 60%. Larger tumor size ($p < 0.001$), shorter duration between diagnosis of cirrhosis and HCC ($p 0.03$), concomitant DM (< 0.001) were found significant factors associated with viral marker negative HCC.

Conclusion: Viral marker negative HCC are not uncommon in Pakistan. Patients with viral marker negative HCC tended not to be under surveillance as compared to viral-HCC and diagnosed mostly when became symptomatic.

Keywords: HCC, hepatitis B, Hepatitis C

2.25

IMPACT OF HISTOPATHOLOGICAL VARIANT ON THE OUTCOME OF PATIENTS UNDERGOING RADICAL CYSTECTOMY

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Objective: To assess the impact of different histopathological variants of bladder cancer on morbidity and mortality of patients who underwent radical cystectomy.

Method: Retrospective analysis of 201 patients was done, who underwent radical cystectomy (RC) and bilateral pelvic lymphadenectomy (PLND) with urinary diversion for muscle invasive bladder cancer (MIBC) in past 23 years (1988 to 2010). Inclusion criteria: All patients above 14 years who underwent RC for bladder cancer. Exclusion criteria: Patients with follow up < 6 months and those with missing data. Demographics as well as clinicopathological parameters including histopathological variant, stage, number of nodes removed and margin status were reviewed. Multivariate analyses were used to evaluate these parameters for disease specific survival (DSS) and overall survival (OS).

Results: Out of 201 patients, 84% were males and 16% were

females with a mean age of 61 ± 13.1 years (range from 27 to 87 years). Of 201 patients, 31 were excluded from the study because of inadequate follow up and missing data. The mean follow up was 5.7 years (range 6 months to 11 years). The overall survival was 55% with disease specific survival being 66%. Patients with pathological stage T0 at cystectomy have 87% DSS compared to 60%, in patients with pT4 ($p=0.705$). The OS for node positive patients was 16%, compared to 60% for node negative patients ($p < 0.01$). Pathological stage, number of nodes removed and histopathological variance demonstrated differences in DSS and OS.

Conclusion: RC and PLND is a standard procedure for MIBC and high grade bladder tumor. Pathological stage at RC and lymph node involvement are predictors for DSS and OS. Histopathological variance is an independent risk factor determining the outcome.

Keywords: MIBC, Radical cystectomy (RC), histopathological variant

2.27

CANCER AMONG ADULTS WITH SEVERELY MENTAL DISORDER

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Introduction: Recently, the researchers have become increasingly interested in the physical health status of adults with serious mental illness. The relationship between cancer and associated major psychological disturbances such as high prevalence of depression, low self-esteem, low mood, feeling of aggression and anxiety is clearly established in the previous studies. However these studies have failed to recognize the trend of cancer among mentally ill patients; very less is known about cancer in mentally ill population. purpose This paper highlights the risk factors, determinants and challenges associated with mentally ill patients so that the need of this neglected group is addressed by health care community.

Method: Systematic review of literature from 2006 to 2010. **Results:** According to Howard, L. M., Barley, E. A., Davies, E., et al, (2010) Women diagnosed with severe mental illness like schizophrenia might be at greater risk for developing breast cancer due to the lower parity and fertility of women with psychiatric disorders. Moreover there are other risk factors such as poor diet, too little exercise, drug abuse and other associated medical problems that increases risk of prostate cancer in men with severely mental disturbance to Werneke, There are barriers to attendance in national screening program of Women with severe mental health problems such as breast screening which prevent in early diagnosis and prevention of cancer. **Conclusion:** In brief, there is a diminished reporting of cancer among mentally disturb population. Health care personal have greater responsibility to plan effective intervention; to promote the wellbeing of this vulnerable group of population.

Keywords: Cancer, mental health, young adults

2.28

WHIPPLE PROCEDURE FOR PANCREATIC CANCER: 'PANCREATICOGASTROSTOMY VS PANCREATICOJEJUNOSTOMY' A REVIEW ARTICLE

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Objective: Pancreatic cancer is one of the leading causes of morbidity and mortality worldwide. The definite surgical management for pancreatic cancer is pancreaticoduodenectomy with implantation of remnant of pancreas in the stomach (Pancreaticogastrostomy) or the jejunum (Pancreaticojejunostomy).

Method: An extensive search was done on studies comparing the two operative approaches and their outcomes.
Results: Operative mortality following pancreatoduodenectomy results essentially from a pancreatojejunal anastomosis leakage. Pancreaticogastrostomy is an alternative method of restoring pancreatic-intestinal continuity which has been employed by a number of institutions showing much reduced operative mortality. The technique is not difficult and there seems to be less tendency for the anastomosis to leak.

Conclusion: Following Whipple resection, restoration of pancreatic-intestinal continuity has usually been done between the pancreas and upper jejunum. This stitch line has at times been unsuccessful, frequently as the result of postoperative pancreatitis, causing hemorrhage, abscess, and fistula formation. On the other hand sutures between the pancreas and the stomach (pancreaticogastrostomy) seem more secure than between the pancreas and the jejunum since the stomach has a thicker wall and the anastomosis can be reinforced from within the lumen of the stomach. In conclusion, this method of restoration of pancreatic-intestinal continuity merits widespread utilization due to its simplicity and safety.

Keywords: Pancreatic cancer, whipple surgery, operative outcome

2.29

1. SURVIVAL DATA AND PROGNOSTIC FACTORS SEEN IN PAKISTANI PATIENTS WITH LUNG CANCER

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Objective: Lung cancer is one of the leading causes of cancer-related deaths in Pakistan. There is dearth of local data on survival and prognostic factors.

Method: We did a retrospective review 189 cases (histopathologically confirmed) seen at the Aga Khan University Hospital, Karachi.

Results: Mean age +/- SD was 60.7 +/- 11 years. 156 (82%) were men. 156 (83%) were current or ex-smokers. Commonest comorbid were hypertension in 59 (31%) and Diabetes in 47 (25%). Cough and weight loss were the most frequent symptoms in 150 (79%) and 121(64%) cases respectively. Anemia in 49(26%) and cachexia in 13(7%) were the commonest detected signs. CXR showed a central mass in 96 (51%) and a pleural effusion in 70 (37%). 148(78%) underwent bronchoscopy. There

were 36 (19%) cases of small cell carcinoma and 155 cases of non-small cell carcinoma (Squamous 43%, adenocarcinoma 18%, large cell or undifferentiated 19%). ECOG functional status was 2 and 3 in 72(38%) and 53(28%) cases respectively. 66(35%) received chemotherapy, 36(19%) radiation therapy and 43(23%) underwent surgery. Survival data were available in 83 cases. The overall median survival was 8 months (range 0.96- 84): with 24 patients surviving =1 year, 10 =2 years and 1 patient >5years.

Conclusion: Mostly men who are either current or ex-smokers are affected. Distribution of cell type and location are similar in Pakistan to other developed countries. The overall median survival remains poor despite a significantly large proportion undergoing accepted standards of treatment.

Keywords: Lung cancer, treatment, survival

2.30

PARTICIPATION OF ONCOLOGY PATIENT IN CLINICAL DECISION MAKING: A SYSTEMIC REVIEW

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Objective: Advancement in the cancer treatment has lengthened the survival rate. The trend in clinical decision making over a period of time has been changed from passive involvement to collaborative approach. This transition has brought forth by the advancement in technology that has affected the patient's readiness to participate in decision making. Therefore, it is the responsibility of health care providers to assess the patient's preference regarding decision making.

Method: A comprehensive literature search was carried out to explore available literature on patient's involvement in decision making for oncology treatment. Online databases including PubMed, Science Direct, and CINAHL were searched. In addition, manual search was also done by accessing available articles in periodical library.

Results: The role of patient in decision making differs during the course of treatment. It has been reported that at initial stage of illness the preferred decision making role remain consistent with the actual role. However, discrepancies have been noted in the later stage of illness. It has been identified that as patient became more aware about their disease condition and available treatment options, they want to play an active role in decision making.

Conclusion: Patient participation in clinical decision making varied at a great level. In order to raise patient's satisfaction, health care providers should consider patient's perspective during decision making process of oncology treatment.

Keywords: Oncology, decision making, patient participation

2.31**COMPARISON OF SURVIVAL AFTER SURGICAL AND NONSURGICAL TREATMENT IN SEPTUAGENARIANS WITH MUSCLE INVASIVE BLADDER CANCER**

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Objective: Radical Cystectomy (RC) is the gold standard treatment for muscle invasive bladder cancer (MIBC), and its effectiveness has been proven in the elderly patients. However the alternate treatment modalities like radiation therapy are usually offered or considered due to related co morbid conditions or fear of operative morbidity. This study aims at determining the overall survival of elderly patients who underwent RC, with those who had an alternate treatment.

Method: We retrospectively reviewed the patients, more than 70 years of age, diagnosed with MIBC. Patients were divided into 2 groups, surgical and non-surgical treatment. Overall survival was determined for both the groups, using appropriate tests

Results: A total of 47 patients were analyzed, with 29 undergoing RC and 18 having AT. Both groups were comparable in terms of mean age, gender distribution, mean Charlson's Index and T stage. There was a single mortality seen with in 30 day period, with overall 30 day complication rate of 47% following RC. Overall only 1 patient was alive in the AT group while 10 patients were alive in RC group. The mean survival time was 48 months in RC group in comparison with 21 months in AT group, which was statistically significant. The 5 year overall survival was 60% and 20% in RC and AT groups respectively. **Conclusion:** RC improves the overall survival in elderly patients, with 60% overall 5 year survival. The complication and mortality rates are comparable.

Keywords: Radical cystectomy, survival, septugenarians

2.32**KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING PROSTATE SPECIFIC ANTIGEN (PSA) AND PROSTATE BIOPSY**

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Objective: To determine the knowledge, attitude and practice of urology residents and consultants regarding prostate specific antigen (PSA) and prostate biopsy.

Method: This study was conducted at the monthly meeting of PAUS in December 2010 held at AKUH. A verbal informed consent was obtained from all participants and they were given a questionnaire regarding PSA and prostate biopsy. The responses were grouped into excellent (>80%), good (60 to 79%), average (40 to 59%), poor (20 to 39%) and very poor (<20%). **Results:** Total number of responders were 27, with 12 (45%) consultants and 15 (55%) residents. Only 11 % gave correct answer with regard to the normal (median) value of PSA, while only one third of the responders considered PSA velocity to be the most important marker for prostate biopsy. Thirty percent

considered Mid-life PSA to have prognostic significance and 37 % each considered octant biopsy and 12 core biopsy to be adequate for a diagnosis of prostate cancer. Vast majority of responders (63%) considered rising PSA to be an indication for repeat biopsy and similarly 70% were reluctant to do it in patients on aspirin. Regarding practices of antibiotic prophylaxis, 44% considered combination of Flouroquinolones and Metronidazole to be an appropriate regimen. Twenty six percent of responders did not consider any analgesia following prostate biopsy and 37% left it to the person performing the biopsy. Thirty percent of the responders correctly identified the risk of sepsis following prostate biopsy.

Conclusion: Overall knowledge of urologist is variable between one area to another ranging from very poor to excellent. Most of the practices were against the recommended guidelines. In view of these conclusions, more efforts are needed to direct a guideline based urological practice, offering improved standard of care for a third world population.

Keywords: PSA, Prostate biopsy, KAP

2.33**SURVIVAL DATA AND PROGNOSTIC FACTORS SEEN IN PAKISTANI PATIENTS WITH LUNG CANCER**

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Objective: Lung cancer is one of the leading causes of cancer-related death in Pakistan. There is dearth of local data on issues related to lung cancer Objectives To study the risk factors, clinical characteristics, pathologic findings and outcome of patients with lung cancer.

Method: We did a retrospective review 189 cases (histopathologically confirmed) seen at the Aga Khan University Hospital, Karachi.

Results: 156 (82%) were men. Mean age +/- SD was 60.7 +/- 11 years. 156 (82%) were current or ex-smokers . Commonest comorbids were hypertension in 59 (31%) and diabetes in 47 (25%). Cough and weight loss were the most frequent symptoms in 150 (79%) and 121 (64%) cases respectively. Anemia in 49 (26%) and cachexia in 13 (7%) were the commonest detected signs. CXR showed a central mass in 96 (51%) and a pleural effusion in 70 (37%). 148 (78%) underwent bronchoscopy. There were 36 (19%) cases of small cell carcinoma and 155 cases of non-small cell carcinoma (Squamous 43%, adenocarcinoma 18%, large cell or undifferentiated 19%). ECOG functional status was 2 and 3 in 72 (38%) and 53 (28%) cases respectively. 66 (35%) received chemotherapy, 36 (19%) radiation therapy and 43 (23%) underwent surgery. Survival data were available in 86 cases. The overall median survival was 8 months (range 0.96-84): with 24 patients surviving =1year, 10 =2 years and 1 patient >5years.

Conclusion: Mostly men who are either current or ex-smokers are affected. Distribution of cell type and location are similar in Pakistan to other developed countries. The overall median survival remains poor despite a significantly large proportion undergoing accepted standards of treatment.

Keywords: Lung, cancer, survival data

2.34 IMPACT OF PHARMACIST INTERVENTIONS ON 5HT3 ANTAGONIST PRESCRIBING AND OVERALL MANAGEMENT OF CHEMOTHERAPY INDUCED NAUSEA AND VOMITING (CINV)

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Background: Ondansetron utilization for (CINV) increased to 70% in our institution. According to literature reports, Ondansetron has demonstrated equal efficacy as that of other 5HT3 antagonists but has somewhat higher cost. In our formulary another 5 HT3 receptor antagonist is also available i.e. Granisetron. Dosing frequency of Ondansetron is 8mg q8h with cost Rs 3291/day, while that of Granisetron is 3mg once daily having cost Rs 784/day, therefore we started restricting Ondansetron use, and switched patients with CINV to Granisetron wherever possible during multidisciplinary clinical rounds. **OBJECTIVE:** The primary objective was to evaluate the impact of pharmacist intervention on Ondansetron prescribing and associated cost saving. Whereas secondary objective was to evaluate overall antiemetic prescribing based on ASCO and NCCN guidelines

Method: Pharmacist reviews the profiles of patients admitted in oncology and evaluates 5HT3 antagonist prescribing, as well as prior antiemetics. Prescribers are contacted when necessary and orders are switched from Ondansetron to Granisetron where possible. Interventions were logged in the computerized pharmacy system. Data was collected from system and intervention analyzed.

Results: Interventions data related to antiemetic prescribing depicted a total of 103 Interventions between September 2010 to August 2011. These are classified as follows: 1. duplication of same class 5HT3 receptors 22.3% 2. Addition of other antiemetic drugs like corticosteroids 19.4% 3. switch of Ondansetron to Granisetron 24% 4. no need of antiemetic drugs 22% 5. wrong diluent 6.79% 6. IV to oral change 7.7% Overall cost saving during this period was approximately RS 59760. **Conclusion:** Our result demonstrates that pharmacist intervention has a favorable impact on 5HT3 receptor prescribing and leads to improved adherence to standards of care practice guidelines in management of CINV.

2.35 ADVANCED LARYNGEAL CANCER FOR ORGAN FUNCTION PRESERVATION WITH CONCURRENT CHEMO-RADIOTHERAPY: A RETROSPECTIVE ANALYSIS FROM A TERTIARY CARE HOSPITAL

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Objective: Laryngeal cancer is one of the most common head & neck tumors in Pakistan and about 12000 new cases diagnosed each year in USA. There is no controversy in the treatment of early laryngeal Ca but on the other hand there is controversy in the management of the advance laryngeal Ca (stage III or stage IV). Till the end of last century, the standard therapy for advanced

cancers i.e. T3 and T4 lesions was Laryngectomy or in some selective cases conservative laryngeal surgery. Over a period of two decades the treatment strategies for laryngeal cancer have undergone a paradigm shift with usage of chemo-radiotherapy with the intent of organ preservation. Organ preservation protocol Include, RT where upto 70 gy radiation dose is given in 35 fractions, induction chemotherapy in which chemo is given before definitive RT and Concurrent CRT in which radiation and chemotherapy is given simultaneously. Most publications do not report the rate of patients alive without a feeding tube or tracheostomy dependency. Results are generally incomplete, reporting survival and preservation rate only, but without data about quality of life. **Objective:** The primary objective of our study was to see outcome organ preservation protocol in advanced laryngeal carcinomas in terms of organ preservation, complication and disease free survival.

Method: Material & Method: Study Design is retrospective review ,at Aga Khan University Hospital and Duration of study Nov. 2006 – Nov. 2009 with the Sample size:25 Inclusion Criteria: All patients with advanced laryngeal carcinoma who underwent concurrent chemoradiotherapy Exclusion Criteria: Previous surgery, T1 & T2

Results: Result: Over all organ preservation is 80% .Functioning organ preservation is 64%.

Conclusion: Organ preservation protocol has favorable outcome in stage III disease whereas its role in stage IV is questionable.

Keywords: Advance laryngeal, carcinoma, radiotherapy

2.37 IS RISK MALIGNANCY INDEX A USEFUL TOOL FOR PREDICTING MALIGNANT OVARIAN MASSES IN DEVELOPING COUNTRIES?

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Objective: Risk of malignancy index has been widely studied for prediction of malignant pelvic masses in western population, however, little is known regarding its implication in the developing countries. The objective of this study is to determine how accurately the RMI can predict the malignant pelvic masses. **Method:** This was a retrospective review of charts conducted at The Aga Khan University Hospital, Karachi, Pakistan. Those patients who came to the Gynecological clinic between January 2004 to December 2008 with adnexal masses were identified by means of IDC-9CM coding system. The files of these patients were reviewed for collecting information related to demographic characteristics, ultrasound findings, menopausal status, CA 125 and histopathology. Patients with advanced stage disease were excluded. The RMI for each of these patients were calculated based on the standard formula.

Results: A total of 283 women were included in the analysis. When analyzing the individual parameters of RMI, the best predictor for malignancy was ultrasound with the sensitivity, specificity and positive likelihood ratio of 78.3%, 81.5% and 4.2 respectively. The positive likelihood ratio of RMI at the standard cut off value of 250 was 8.1 while at the cut off of 200; it was 6.8 with comparable sensitivity and specificity.

Conclusion: RMI is a sensitive tool in predicting malignant adnexal masses. A cut off of 200 may be suitable in developing countries for triaging and early referrals to tertiary care centers.

Keywords: RMI, Ovarian Masses, malignant

2.38

FREQUENCY AND PATTERN OF OCCULT NODAL METASTASIS IN ORAL CAVITY CANCERS

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Objective: Introduction Squamous cell carcinoma is the most common head and neck cancer and constitutes more than 90% of all oral cavity cancers. In two studies from Pakistan oral cavity cancer is stated to be the second most common tumor (both in male and female). Tobacco, alcohol, pan and betel nut are the factors usually implicated in its development. Oral cavity cancer has well known potential to metastasize to the neck nodes. The presence of cervical lymphadenopathy is an independent predictor of poor survival. So the management of cervical nodes metastasis is of paramount importance in the treatment of oral cavity squamous cell carcinoma. Occult metastasis (micro metastasis) is defined as histological involvement of cervical lymph node without clinical or radiological evidence of disease (N0). The incidence of micro metastases can be as high as 32% in squamous cell carcinoma of oral cavity. - To determine the frequency of occult neck node metastasis in patients with oral cavity squamous cell carcinoma 2-To Determine the frequency of micro metastasis involving from level I to level V in patients with oral cavity squamous cell carcinoma

Method: Total 50 patients included in the study. The mean age was 47 (range 25 – 72). There were 38 (76%) males and 12 (24%) females. All patients fulfilling inclusion criteria admitted at Aga Khan University hospital informed consent was taken; all patients underwent level I to level V neck node clearance. Whole specimen was sectioned in each container by histopathologist and was reported according to level of involvement. All data including age, sex, tumor site, size and frequency of involvement of neck node from level I to level V was entered in proforma. Data was analyzed on SPSS 16 software. Using descriptive statistics frequencies and percentages were calculated for lymph node involvement as well as level I to level V. Mean and standard deviation were computed for quantitative variables like age. Frequencies and percentages were also computed for gender, site of tumor and TNM classification. Results were stratified by age, gender, site of tumor and TNM stage and size

Results: Out of 50 patients 27 (54%) patients found positive on final histopathology as shown in table VI. Then among positive patients we further looked at separate levels (table VI) to find out pattern of nodal metastasis from level I to level IV. Involvement At level I 44%, level II 32%, level III 14%, level IV 4% and none of our patient had metastasis at level V.

Conclusion: In conclusion, the risk for an occult neck metastasis is high in patients with early oral cavity SCC as well as advanced

disease; therefore, elective neck treatment should be considered. Considering the patterns of occult metastasis, we conclude that level IV and V are at a relatively lower risk and therefore selective neck dissection for level I, II and III should be recommended for neck clearance.

Keywords: Occult Nodal Metastasis, oral cavity

2.39

STUDIES ON PROSTASPHERE FORMING CELLS FROM PROSTATE EPITHELIAL CELL LINES

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Background/Objective: Recent advances in cancer research have suggested that cancer stem cells (CSCs) are implicated in initiation, disease progression, invasion, drug resistance and recurrence of several cancers including prostate cancer. These CSCs constitute a minor subpopulation (<1%) within a tumor and are resistant to conventional chemotherapy, radiotherapy and hormonal-ablation therapy. The origin of these cancer-initiating cells is still obscure. However, several lines of evidence suggest that they arise by dedifferentiation of terminally-differentiated cells or oncogenic transformation of normal stem/early progenitor cells. The prostate early progenitor and stem cells have the ability to form prostaspheres. These multicellular spheres are formed in anchorage-independent cultures. The CSC prostaspheres can be studied to unravel the biology, biomarkers and therapeutic targets of CSCs. The objective of current study was to isolate and expand stem cells from immortalized and transformed prostate epithelial cells utilizing prostasphere cultures.

Method: Three cell lines were used in this study: a. BPH-1 and PTN-1B - SV 40 immortalized human prostatic epithelial cell lines and b. DAR 19 androgen-receptor transfected tumorigenic DU145 cell line. These cell lines were grown in complete media and subjected to Magnetic Assisted Cell Sorting (MACS) using CD133 Microbead Kit (Miltenyi Biotech) according to manufacturer's instructions. Sorted CD133⁺ and CD133⁻ cells were cultured separately in serum-free DMEM at low seeding density (1000 cells/ml) in non-adherent culture conditions for prostasphere formation and cultured over 4 weeks. Cells were photographed at regular intervals.

Result: The proportion of CD133⁺ subpopulation in BPH-1, PTN-1B and DAR19 was 6%, 12% and 1.7%, respectively. Prostatesphere formation was observed in DAR 19 CD133⁺ cells but not in CD133⁻ cells. In contrast, no prostaspheres were observed in BPH-1 and PTN-1B CD133^{+/+} subpopulations.

Conclusion: These data indicate the presence of cancer stem-like/progenitor cells in the androgen-responsive transformed DAR19 cell line only.

Keyword: Prostosphere, cell lines,

2.40

ENRICHMENT OF STEM CELL-LIKE CELLS FROM AKU-BC1: A BREAST CANCER LINE ESTABLISHED AT AKU

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Introduction: Cancer stem cell (CSC) pool is present in tumors and in established cell lines, responsible for their continued growth; however, they have yet not been fully characterized. CSCs exhibit resistance to chemotherapy and radiotherapy resulting in disease recurrence. CSCs are known to form spheres and can be maintained *in vitro* using serum-deprived conditions. This study aims to enrich CSC population from AKU-BC1 using single cell cloning.

Methodology: Single cell clones (SCC) were established in 96-well plates using complete medium. To isolate CSCs, SCCs were cultured in serum-deprived (SDM) and 2% serum containing medium (M2F) for six weeks. SCCs were assessed for their growth and sphere forming ability. Further these clones were characterized for the expression of AR, ER- β , PR, Her-2/*neu*, MUC1, E-Cadherin, and RPLP0 by semi quantitative RT-PCR and results were compared with parental cell line.
Results: Five SCCs were established from AKU-BC1, namely A7, D8, D10, D11 and E7. Two clones formed spheres in SDM and M2F, two clones did not survive while one grew only as monolayer. In complete medium, these spheres differentiated and grew as monolayer with differential expression levels of AR, ER- β , PR, MUC1, E-Cadherin, Her2/*neu* and RPLP0.
Conclusion: We report successful establishment of sub-clones of AKU-BC1 exhibiting stem-like properties. These cell lines represent primary tumor model and can be used to unravel mechanisms of breast cancer recurrence attributed to CSCs.

2.41

MUC1: A PROTEIN TO BE UNVEILED IN HEMATOLOGICAL MALIGNANCIES

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Background: Mucin 1 (MUC1) is a highly polymorphic, transmembrane glycoprotein characterized by heavily glycosylated Variable Number of Tandem Repeats (VNTRs). Initially believed to be restricted to epithelial lineages only, it is now reported being aberrantly expressed in certain non epithelial human cancers and surprisingly in hematological malignancies.

Objective: This review aims to find out the functional research reported about the aspects of MUC1 in hematological malignancies.

Methodology: An extensive literature search using PUBMED (NLM) was performed with keywords: "MUC1", "EMA", "PEM", "PUM", "DF3", "Hematological Malignancies", "B Cells", "T-Cells", "Lymphoma", "Leukemia", "Myeloma" "hematopoietic cells". Literature for the expression of MUC1

in different hematopoietic cell lines and malignancies was searched.

Results: Seventeen out of 1200 reviewed articles were found to address the expression of MUC1 in hematological disorders. Only 1 commentary and 1 review, partly discussing the role of MUC1 in hematopoietic cells was found. The total number of completely characterized hematological cell lines is documented to be > 400. Thirty two cell lines were analyzed for the expression of MUC1 in which 15 were reported to be positive while 17 were negative.

Conclusion: Literature suggests that MUC1 stabilizes the expression of Bcr-Abl protein in chronic myeloid leukemia (CML) blasts and promotes pathogenesis by blocking apoptosis and differentiation whereas favoring self-renewal. Multiple myeloma (MM) cells are also reported to be dependent upon MUC1 for their growth and survival. Inhibiting MUC1 resulted in tumor regression and reduced recurrence. Considering the importance of MUC1 in hematopoietic malignancies, its expression in different cell lines and lineages could be exploited for a better understanding for its potential as an oncogene and a functional marker in hematopoietic cells.

2.42

CD133⁺ SUBPOPULATION OF DU145 CELLS FORM PROSTASPHERES EXPRESSING STEM-LIKE PROPERTIES

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Background/Objective: Stem cells are self-renewing pluripotent cells responsible for the maintenance of organs identity and functions in the body. Like many other malignancies, prostate cancer is reported to originate from prostate cancer stem cells. The stem cells possess specific surface markers such as CD133, CD44, CD117 which can be utilized for their identification and isolation. Stem cells that differentiate into cancerous cells have the capability of forming prostaspheres *in vitro*. These prostaspheres can be studied to investigate the biology, biomarkers and therapeutic targets of cancer stem cell. This study was conducted to isolate and propagate stem cells from prostate cancer epithelial DU145 cells in prostasphere cultures.

Methodology: DU145 cells were cultured in DMEM/F12 containing 10% FBS. Following reaching confluence, Magnetic Assisted Cell Sorting (MACS) using CD133 labeled Microbead kit (Miltenyi Biotech) as per manufacturer's instructions. MACS was utilized to sort cells into CD133⁺ and CD133⁻ subpopulations. These subpopulations were cultured separately for over 4 weeks in serum free DMEM/F12 medium at a seeding density of 1000 cells/ml for sphere formation in 96 well plates. Spheres formation was recorded at weekly intervals by taking photographs under an inverted microscope.

Primary spheres P⁰ were subcultured in Serum Free Medium (SFM) to generate secondary spheres P¹ and these were further subcultured into secondary spheres P². The prostaspheres were collected and their smears were prepared on the glass slides. H&E staining and immunofluorescence (CD44-FITC) was performed on these spheres.

Results: Prostatespheres were observed in DU145 CD133⁺ subpopulation, but not in the CD133⁻ subpopulation. Prostatespheres showed the “multicellular globular structure” with H&E staining and were positive for stem cell marker CD44.

Conclusion: Prostatespheres were generated and propagated from DU145 cells which express CD44 indicating stem-like/ progenitor properties.

2.44

ANDROGEN DECREASES CELL PROLIFERATION IN AKU-BC1 VIA FUNCTIONALLY ACTIVE AR

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Introduction: Androgen receptor (AR) is a transcriptional factor which modulates the action of androgens. Androgens play important role in development of breast; however its role on BCa is yet to be determined. AR gene on its exon 1 contains a series of CAG trinucleotide repeats which varies among individuals. It ranges from 11–31 repeats and is believed to be related to AR transcriptional activity.

This study investigated the functionality of AR in AKU-BC1 by (a) determining the number of CAG repeats on exon 1 of AR (b) studying promoter activity of androgen responsive genes and (c) effect of androgen on cell proliferation. **Methodology:** The following features/characteristics of AR were studied:

- (a) Number of CAG repeats by DNA sequencing
- (b) Detection of functionally active AR by luciferase reporter assay.
- (c) Effect of Androgen (Dihydrotestosterone) on cell proliferation by MTT assay.

Results: DNA Sequencing demonstrated that AKU-BC1 has 14 CAG repeat. Luciferase activity indicated that AR regulates the expression of androgen responsive genes (*BARD1*, *NAT1*, and *PRKCD*), hence functionally active. Dihydrotestosterone (10^{-8} M) treatment for three days significantly decreased ($p < 0.01$) cell proliferation by 24% in AKU-BC1 as compared to control. **Conclusion:** AKU-BC1 AR gene, with only 14 CAG repeats showed an increase in luciferase activity rendering it to be transcriptionally active. This suggests AR to be a likely candidate for therapeutic target as revealed by cell proliferation assay. AKU-BC1 offers a promising cell system to study the significance of AR in BCa biology.

Keywords: Androgen receptor, cell proliferation

2.45

AKU CANCER TISSUE BANK: QUALITY ASSESSMENT OF STORED BIOLOGICAL SAMPLES

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Introduction: Cancer Tissue and Data Bank is an AKU-based core facility initiated with the intention to provide biological material including tissues, DNA and RNA and data for cancer studies. The primary responsibility of this bank is to ensure confidentiality of patient’s information and maintain a repository of tissue quality for analytical studies. This project has now completed 10 years and maintains a sizeable number of biological material stored at -70°C. This study aims to assess the quality of stored tissues and their extracted DNA and RNA and determine their suitability for various prospective studies like mechanism and trends of disease, identification of cellular components that may lead to the early detection or better prognosis of the disease. **Objective:** To evaluate the quality of stored samples for their usefulness in research aiming to study cellular and molecular changes of various cancers.

Method: • Data of archival cancer tissues (n=841) was screened and categorized according to “The Canadian Tumour Repository Network (CTRNet) standards. • Rating of 20 samples comprising of (a) DNA n=12 and (b) RNA n= 8 was done using scale of 1 to 10 (where, 1 being low quality sample and 10 being good quality) on the basis of: 1. Purity using Nanodrop-1000. 2. Integrity on 0.7% Agarose Gel electrophoresis and 3. PCR amplifications of housekeeping genes i.e. β -globin for DNA and β -actin or GAPDH for RNA.

Results: • Status of screened tissues were categorized as follows : a. Golden ----- 56 (6.65%) b. Silver ----- 560 (66.5%) c. Bronze ----- 139 (16.5%) d. Test ----- 86 (10.2%) • Out of 20 samples, 12 were of category = 9 and 7 were of 6 category. Only one sample was of low quality i.e. 4.

Conclusion: Samples in CTB are of good quality and suitable to be used in cancer research.

Keywords: Cancer Research, Quality, Tissue Bank

2.46

EXPRESSION OF ANDROGEN RECEPTOR IN A COHORT OF PAKISTANI WOMEN WITH BREAST CANCER: A POTENTIAL THERAPEUTIC OPTION FOR TRIPLE NEGATIVE BREAST CANCER

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Introduction: Androgen receptors (AR) are expressed in approximately 70-90% of breast cancers (BCa) and have been involved in the pathogenesis of BCa. However, its importance as an independent prognostic marker or a therapeutic target for triple-negative breast cancers (TNBC) remains unresolved. Our aim was:

- To evaluate AR expression by immunohistochemistry in invasive BCa and in a subset of TNBC.
- To correlate AR expression with clinic-pathological parameters i.e. age at diagnosis, pathological stage, grade and with estrogen receptor(ER), progesterone receptor (PR) and HER-2/neu status.

Methodology: AR (clone AR441, Dako, 1:50) expression was analyzed on paraffin embedded invasive BCa tissues (n=128) retrieved from pathology department, AKUH. Expression was quantified and a score 3 was considered positive. ² test was applied to assess associations between categorical variables. **Results:** AR expression was observed in 68 patients (53.2%). AR was significantly associated with age >35 years (p<0.009), higher positivity of estrogen and progesterone receptors (p<0.001) and moderately differentiated tumors (p<0.001). Majority (66.7%) of poorly differentiated cancers showed loss of AR expression (P < 0.001). AR expression was observed in 31% cases of TNBC patients. No association of AR was found with tumor size and metastatic nodal involvement.

2.48

CANCER CONTROL - THE IMPORTANCE OF CANCER REGISTRIES IN LOW INCOME COUNTRIES

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Background: The need for registries in low and middle income (LMI) countries is crucial for the identification of prevalent diseases and development of health systems catered to tackle these. Cancer is the second leading cause of death worldwide. According to the World Health Organization, 62% of cancer related deaths occur in LMI countries, with a projected increase to 75% by the year 2020.

Objective: To identify the number and type of cancer registries in LMI countries.

Method: A search was performed on: ScienceDirect, PubMed, Wiley, without date limitations due to paucity of data. Key words used: 'cancer LMI', 'cancer prevalence LMI', 'cancer underdeveloped countries', 'global cancer burden', 'cancer burden LMI', 'cancer registries', 'cancer registries LMI', 'cancer

registration LMI', 'cancer, '[types], LMI'. 466 articles were produced. While reviewing, a focus on the countries the Aga Khan University is present in, (Afghanistan, Pakistan, Uganda, Tanzania, Syria, Egypt, Kenya), was decided. 10 review articles were selected covering cancer registries or lack there off, in the relevant countries.

Results: As LMI countries struggle with acute survival problems due to expansion of diseases, available health oriented resources are unable to meet demands. Thus, developments of cancer registries are perceived as luxury and classified as low priority.

Country	Registries
Afghanistan	No available cancer registries.
Kenya	Hospital based n=1. Pathology based n=1. No population based cancer registry.
Pakistan	Sub-national cancer registry n=1. No population based cancer registry.
Uganda	Hospital based n=1. Pathology lab n=1. No population based cancer registry
Syria	Hospital based n=6. Pathology lab n=12. No population based cancer registry
Tanzania	Hospital based n=6. No population based cancer registry
Egypt	Regional cancer registries n=1. Pathology lab n=4. No population based cancer registry

Conclusion: Cancer registries' primary functions involve the registration of the type and frequency of disease in a population or sub-populations. The quantification of the burden and survival of cancer is a necessary step for the development, establishment and monitoring of cancer control programs. Lack of data in LMI income countries highlights the need for the implementation of population based cancer registries.

2.49**POST NEOADJUVANT CHEMOTHERAPY TUMOR
RESPONSE IN BREAST CONSERVATION - UTILITY OF
MAMMOGRAPH**

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Objective: Variable responses to Neoadjuvant chemotherapy have been experienced by investigators. Regular evaluation of tumor response during therapy is essential to determine effective therapy and outcome in perusal of consideration of breast conservation. Decision regarding the appropriate type and timing of surgery and continuation or change in treatment regimen depends on clinical and radiological assessment of tumor size during therapy or before surgical planning. Evaluation of tumor response is done by clinical examination, mammography, ultrasonography and more recently MRI. Mammography in this era is the most effective and useful investigation for assessment of tumor response in patients who received neoadjuvant chemotherapy. AIM: The aim of the study is to determine the utility of mammography in post neoadjuvant tumor response assessment in breast conservation.

Method: Retrospective analysis of prospectively collected data between years 2004 to 2011 at Aga Khan University Hospital (AKUH) Pakistan was undertaken on total 37 patients selected to receive neoadjuvant chemotherapy for breast conservation. Biomorphological markers of tumors including type of breast tumor, nuclear grade, DCIS component, tumor receptors (ER, PR), HER 2NEU positivity, nodal disease, amount of fibrosis in resected specimen. Tumor size was evaluated by physical examination and mammography at the time of diagnosis and before surgery. Predicted tumor response on clinical examination and mammography, pathological response and tumor size was analyzed. The utility of mammogram and physical exam in predicting pathological residual tumor sized were analyzed. Any correlation between tumor response, biomorphological features, and systemic therapeutic agents were derived.

Results: The mean age in our study was 45.73 years. Post neoadjuvant chemotherapy, tumor size assessed with the help of mammogram showed significant correlation with pathological size (P- value 0.005)

Conclusion: The mammography remains by far the most useful and utilized imaging method in assessment of tumor response in patients with neoadjuvant chemotherapy.

Keywords: , neoadjuvant chemotherapy, , tumor response, , breast conservation

3.1

ASPERGILLOMA: NINE YEARS EXPERIENCE AT AKUH

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Objective: To review the presentation, management and outcomes of aspergilloma at AKUH over a period of 9 years

Method: A case series was conducted on 56 cases of aspergilloma at AKUH from July 2001 to July 2010. Information on presentation, management and outcomes was collected on a structured questionnaire from the medical record. Data was analyzed on SPSS 19 and presented as median, minimum, maximum, frequency and percentages.

Results: Out of 56 cases, 80.4% were males having median age of 36.4 years. Most frequent location was found to be upper lobes (92.8%). All the patients were presented with hemoptysis and 87.5% had history of T.B. Diagnosis was confirmed by CT chest. Fifty three patients were surgically managed by lobectomy, 2 had bilobectomies and 1 patient had pneumonectomy. Follow-up shows nearly 100% success in short term. 21.5% had some complications which included atelectasis, prolonged air leaks, bleeding and renal dysfunction

Conclusion: Surgery remains as the standard treatment for Aspergilloma

Keywords: Aspergilloma, Lobectomy, Pneumonectomy

3.2

CATHETER INDUCED LEFT MAIN CORONARY ARTERY STENOSIS - A RARE COMPLICATION OF PERCUTANEOUS CORONARY INTERVENTION.

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Objective: With rapid advances in the field of interventional cardiology, PCI is being performed more and more frequently. Although recent clinical experience indicates a high success rate, percutaneous coronary intervention (PCI) is still associated with serious complications which usually occur during or shortly after the procedure. Harper et al report 2 cases of subacute progression within months of left main stenosis following successful, uncomplicated left anterior descending (LAD) coronary PCI. This rare complication of coronary intervention is procedure-induced coronary stenosis resulting from endothelial injury by the guiding catheter and equipment.

Method: We are reporting two cases of catheter induced left main coronary stenosis. One of these had PCI to left anterior descending artery (LAD) and the other had PCI to left circumflex artery (LCX); both had non-significant left main stem plaquing. Both the patients returned within three months with anginal symptoms and were found to have critical left main disease likely mediated by guiding catheter. One patient underwent aortocoronary bypass surgery and other had successful ostial left main PCI.

Results: CASE 1 A 55-year-old diabetic and hypertensive male presented with CCS 3 angina. His diagnostic coronary angiogram

showed 30-40 % lesion in proximal left main stem, critical disease in mid LAD and diagonal (bifurcation lesion), moderate disease in mid right coronary artery (RCA) and normal left ventricular systolic function. He underwent PCI to LAD and diagonal. A 7 French EBU (Medtronic, Inc. Minneapolis, USA) guide catheter was selected. Both LAD and diagonal were wired and predilated with a 2.0x15 mm Sequent balloon (B Braun, Melsungen, Germany) and a 2.5x 33 Cypher Select plus stent (Cordis, Johnson and Johnson, USA) was deployed in proximal to Mid LAD at 16 ATM. A bare metal stent 2.5x09 mm Clear flex (Clear Stream Technologies Ltd. Wexford, Ireland) was deployed distal to the first stent to cover the remaining stenosis. Finally diagonal branch was dilated across the stent struts. During the procedure guide position was carefully watched. Six weeks after the PCI, patient presented with progressively worsening anginal symptoms over a period of two weeks. Anticipating restenosis angiogram was performed and the result was a total surprise. It showed very tight stenosis in ostial left main and patent stents. Urgent CABG was recommended but patient refused to undergo surgery. Risks of PCI to left main were explained in detail. A 7 French JL 4 guide catheter was selected and guide wire was advanced into distal LAD. Left main lesion was predilated with a 3.0x13 mm Nimbus Salvo balloon (Clear Stream Technologies Ltd. Wexford, Ireland) and a 4.0x16 mm (BMS) Clear flex (Clear Stream Technologies Ltd. Wexford, Ireland) was deployed in proximal left main at 18 ATM and post dilated with a 4.5x18 mm Power Sail complaint balloon (Guidant, corporation, Santa Clara USA). End result was good with TIMI 3 flow distally without complications. Patient remained fine after wards. CASE 2 A 45-year-old male, smoker, dyslipidemic, underwent coronary angiogram at another hospital four months earlier for worsening angina. He had critical lesion in mid RCA and left circumflex artery. Left main artery was normal. He underwent PCI to RCA and LCX. A 7 Fr.-XB 3.0 guide (Launcher, Medtronic, and Minneapolis, USA) was selected for intervention on LCX and 3.0x24 mm and 3.5x12 mm TaxusTM Express stents (Boston Scientific Corporation, Natick, USA) were deployed in LCX and obtuse marginal branch. Patient remained stable till he presented to our hospital with worsening anginal symptoms for one week. He underwent coronary angiogram which showed critical lesion in distal left main, instent restenosis with total occlusion in LCX stent and patent RCA stent. He underwent CABG and remained fine afterwards.

Conclusion: The onset of stenosis of this type leads to the discussion of the possible role of a traumatic lesion of the wall of the major trunk by the catheter-guide. Acceleration of the left main coronary artery (LMCA) stenosis was induced by guiding catheter which was used for coronary angioplasty of subtotal lesion in the left anterior descending coronary artery (LAD). The LMCA had mild stenosis of 18% reduction of luminal diameter which was unchanged during the course of PTCA. The guiding catheter was pushed repeatedly with considerable force for introducing balloon catheter due to the rigid lesion in LAD. Progression of the LMCA stenosis to a 64% was demonstrated at 6 months in later angiographic restudy. It was considered that repetitive sliding of guiding catheter through the LMCA caused subangiographic intimal trauma and facilitate subsequent progression of stenosis.

Keywords: Coronary artery stenosis, Iatrogenic vessel stenosis

3.3**PREVALENCE OF LOW ANKLE-BRACHIAL INDEX, ELEVATED PLASMA FIBRINOGEN AND CRP ACROSS FRAMINGHAM RISK CATEGORIES: DATA FROM THE NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY (NHANES) 1999–2004**

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Objective: 60–80% of heart attacks or coronary-related deaths occur in individuals identified as non-high-risk per the conventional risk assessment algorithms. Abnormal ankle-brachial index (ABI), plasma fibrinogen and plasma C-reactive protein (CRP) have been shown to be associated with a higher risk of cardiovascular disease (CVD). However, comparable data have not been reported for prevalence of abnormal ABI, fibrinogen and CRP in non-high-risk population. **Method:** We analyzed data from the 1999–2004 National Health and Nutrition Examination Survey (NHANES), a nationally representative cross-sectional survey of the U.S. population, for 6292 men and women, aged 40 and older, without known CVD or diabetes, with available data on standard CVD risk factors, ABI, fibrinogen and CRP. The main objective was to identify proportions of individuals with abnormal ABI (ABI < 0.9 in either leg), elevated fibrinogen (≥400 mg/dl), and elevated CRP (>3 mg/l), with otherwise low or intermediate (<20%) 10-year Framingham risk score.

Results: Overall prevalence of abnormal ABI, fibrinogen, and CRP was 3.6% (95% CI 3.2–4.1%), 27.4% (95% CI 23.9–31.0%) and 38.3% (95% CI 36.5–40.0%) respectively. Among those with ABI data, 91.4% were at <20% FRS, and of these only 2.7% (95% CI 2.3–3.1%, $p < 0.0001$) had an abnormal ABI. Among those with fibrinogen data, 90.8% were at <20% FRS, and of these 23.6% (95% CI 20.4–26.8%, $p < 0.001$) had elevated plasma fibrinogen. Among those with CRP data, 91.1% were at <20% FRS, and of these 34.3% (95% CI 32.7–36.0%, $p = 0.0012$) had an elevated CRP. Overall, 45.0% (95% CI 42.2–47.8%; $p < 0.0001$) had abnormal ABI, fibrinogen or CRP but low-intermediate risk.

Conclusion: Abnormal ABI, elevated fibrinogen and CRP are highly prevalent among individuals otherwise at low-intermediate risk. If any or all of them are shown to improve predictive ability of FRS for primary prevention, it would have a significant public health impact.

Keywords: Coronary heart disease, peripheral vascular disease, cardiovascular biomarkers

3.4**PERFORMANCE OF CURRENT GUIDELINES FOR CORONARY HEART DISEASE PREVENTION: OPTIMAL USE OF THE FRAMINGHAM-BASED RISK ASSESSMENT**

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Objective: There is a strong positive association between

Framingham Risk Scores (FRS) in a population and incidence of hard coronary heart disease (hCHD) events. Under current Adult Treatment Panel III guidelines, individuals with FRS that indicate =20% 10-year risk of hCHD are recommended to receive intensive medical risk factor modification. We sought to assess the performance of FRS as a predictive tool when used as in current guidelines.

Method: A retrospective analysis of two prospective cohort studies, the Atherosclerosis Risk in Communities (ARIC) study, and Cardiovascular Health Study (CHS), including 11,436 and 2569 participants, respectively, without known cardiovascular disease or diabetes at baseline, with available FRS variables were analyzed. The FRS was computed according to standard algorithm. The main outcome was hCHD event defined as MI or coronary death. Using Receiver Operating Characteristics (ROC) curves, sensitivity, specificity, accuracy and other test performance characteristics were determined at various 10-year risk thresholds. ROC curves were plotted.

Results: During 10-year follow-up, 822 hCHD events occurred. FRS was significantly associated with hCHD with an AUC of 0.77 and 0.68 for ARIC and CHS, respectively (p -values <0.0001). However, at standard "high risk" cut-off (=20%), the sensitivity of FRS was only 13% and 25%, respectively and Youden's Index was only 0.10 and 0.15. Lowering the 10-year risk threshold to >5% improved prediction sensitivity to 75% and 83%, with specificity of 66% and 40%, respectively.

Conclusion: When used dichotomously as in current guidelines, sensitivity of the conventional 20% 10-year risk threshold for subsequent hCHD events is quite low. Since the 20% 10-year risk threshold for intensive medical risk factor therapy is on the steep part of the ROC curve, lowering the threshold results in substantial increases in sensitivity with much smaller losses in specificity, even to a threshold as low as 5%.

Keywords: Coronary heart disease, framingham risk score, cardiovascular biomarkers

3.5**RISK STRATIFICATION ANALYSIS OF OPERATIVE MORTALITY IN ISOLATED CORONARY ARTERY BYPASS GRAFT PATIENTS IN PAKISTAN: COMPARISON BETWEEN ADDITIVE AND LOGISTIC EUROSCORE MODELS**

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Objective: No risk stratification model for cardiac surgery has been developed or validated in Pakistan. Therefore the purpose of this study was to investigate the risk profile and outcomes of patients undergoing isolated coronary artery bypass grafting; and validate and compare the predictive performance of additive and logistic algorithms of EuroSCORE in Pakistani population. **Method:** Clinical data on 2004 patients undergoing isolated coronary artery bypass grafting between 2006 and 2010 were retrospectively collected and individual expected risks of death was calculated by the additive and logistic EuroSCORE algorithms. Both models were evaluated in terms of discrimination and calibration by Receiver Operating Characteristic curves and Hosmer–Lemeshow test respectively.

Results: The actual mortality (3.8%) was significantly different from the additive (4.35%) and the logistic estimates (6.41%).

On the basis of degree of risk, actual mortality was 0.6% in the low risk (additive EuroSCORE 0–4), 4.2% in the medium risk (EuroSCORE 5–9) and 19.1% in the high-risk groups (EuroSCORE 10–19). At the low risks both systems slightly over-estimated mortality, with the logistic EuroSCORE being more accurate. At EuroSCOREs between 10–19, the additive EuroSCORE under-estimated and logistic EuroSCORE over-estimated mortality. Both models satisfactorily discriminated outcomes (ROC areas of 0.866 and 0.859 for the additive and the logistic model, respectively). The H-T test showed that calibration was good for the additive model ($P = 0.424$) but turned out being inadequate for the logistic model ($P < 0.001$). *Conclusion:* The additive EuroSCORE is more accurate model for risk assessment as compared to logistics model in Pakistani population.

Keywords: EuroSCORE, Coronary artery bypass graft, Risk stratification

3.6

MORTALITY FROM ISOLATED CORONARY BYPASS SURGERY: A COMPARISON OF THE SOCIETY OF THORACIC SURGEONS AND THE EUROSCORE RISK PREDICTION ALGORITHMS

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Objective: The purpose of this study was to validate STS risk algorithm in Pakistani patients and to compare its predictive performance with additive and logistic EuroSCORE in terms of discrimination and calibration.

Method: Clinical data was retrospectively collected on 380 patients who underwent isolated CABG between August 2009 and July 2010. Performance of the models was also assessed by comparing the observed and expected mortality in tertiles of risk. The performance of the AES, LES and STS risk algorithms were evaluated in terms of their discrimination and calibration by receiver operating characteristic curve and Hosmer-Lemeshow test.

Results: The actual mortality was 2.89%. Predicted mortality was $4.36\% \pm 3.58\%$ by AES, $5.96\% \pm 9.18\%$ by LES and $2.30\% \pm 4.16\%$ by STS. The specific predicted major morbidity rates included stroke (1.33% predicted v/s 0.3% actual), renal failure (3.84% predicted v/s 2.1% actual), reoperation (6.81% predicted v/s 2.4% actual), prolonged ventilation (13.26% predicted v/s 15.8% actual), and sternal infection (0.24% predicted v/s 0.3% actual). The Hosmer-Lemeshow goodness-of-fit test gave a p value of 0.801 for AES, 0.699 for LES and 0.981 for STS. The area under the ROC curve was 0.866 for AES, 0.842 for LES and 0.899 for STS. STS outperformed AES and LES both in terms of calibration and discrimination. STS however underestimated mortality in top 30% of patients having STS score greater than 2.88, thus overall STS estimates lower than actual mortality.

Conclusion: We conclude that STS is more accurate model for risk assessment as compared to additive and logistic EuroSCORE models in Pakistani population.

Keywords: EuroSCORE, STS, Risk stratification

3.7

PROCEDURE INDICATIONS AND OUTCOME OF PERCUTANEOUS CORONARY INTERVENTIONS IN A TERTIARY CARE HOSPITAL.

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Objective: To determine clinical indications and one month outcome of Percutaneous Coronary Interventions (PCI) in a tertiary care centre.

Method: We prospectively conducted a descriptive study on 259 symptomatic coronary artery disease patients, who underwent primary, rescue or elective PCI with stent deployment at the Tabba Heart Institute, from May 2005 to September 2006. The primary objective of the study was to identify--stable angina, unstable angina, Non-ST elevation myocardial infarction (NSTEMI), ST elevation myocardial infarction (STEMI), congestive heart failure (CHF) and cardiogenic shock) and thirty days outcome of PCI in terms of mortality, peri-procedural myocardial infarction, re-infarction and stent thrombosis. This was done according to the standard guidelines of Canadian Cardiovascular Society and New York Heart Association classification. The patients were followed for one month and complications were noted.

Results: The mean age of sample was 54.9 ± 10.6 years. The indications were stable angina (32.4%), unstable angina (13.9%), NSTEMI (18.9%), STEMI (35.1%), CHF (5.4%) and cardiogenic shock (1.5%). The outcome was mortality (2.7%), peri-procedure MI (0.4%), re-infarction (3.08%), cardiogenic shock (1.5%) and stent thrombosis (4.3%).

Conclusion: Our clinical indications and outcome are comparable with international findings. Stable angina was a major indication and stent thrombosis was the major complication observed, particularly after primary percutaneous intervention for STEMI.

Keywords: Angioplasty, Balloon, Coronary, Coronary Artery Disease/diagnosis, Angina Pectoris/therapy

3.8

PHARMACOLOGICAL BASIS FOR THE MEDICINAL USE OF WRIGHTIA TINCTORIA IN HYPERTENSION.

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Objective: *Wrightia tinctoria* Linn. locally known as "Inderjo Shirin" is commonly used in traditional system of medicine to treat hypertension. The study aims to provide pharmacological basis to the medicinal use of *Wrightia tinctoria* in hypertension. *Method:* In vivo and in vitro assays were conducted to evaluate the effects of aqueous-methanolic extract of *Wrightia tinctoria* (Wt.Cr) on mean arterial pressure (MAP), cardiac and vascular contractions. Normotensive rats under anesthesia were used in the in vivo experiments while in vitro studies were carried out on guinea-pig atria and rat aortae.

Results: When tested in anesthetized rats, Wt.Cr (1, 3 and 10 mg/kg) caused a fall in MAP. In spontaneously contracting

guinea-pig atria, Wt.Cr exhibited a cardio-suppressant effect on the rate and force at 0.1 - 10 mg/mL. The extract (0.03-5.0 mg/mL) caused relaxation in K⁺ (80 mM) and phenylephrine (PE, 1 μM)-induced contractions in rat aortae showing its vasodilatory effects possibly mediated through blockade of voltage-dependent and receptor-operated Ca⁺⁺ channels respectively similar to verapamil, a standard Ca⁺⁺ antagonist. The Ca⁺⁺ channel blocking activity was further confirmed when pretreatment of tissue with Wt.Cr shifted Ca⁺⁺ concentration-response curves to the right similar to the effect of verapamil. **Conclusion:** These data indicate that *Wrightia tinctoria* has antihypertensive, cardio-suppressant and vasodilatory effects, which are mediated possibly through a Ca⁺⁺ channel blocking pathway, thus rationalizing the medicinal use of this plant in hypertension.

Keywords: *Wrightia tinctoria*, Antihypertensive, Ca⁺⁺ channel blocker

3.9

ANESTHETIC MANAGEMENT OF ABDOMINAL HYSTERECTOMY IN PATIENT WITH CONGENITAL SINUS NODE DYSFUNCTION: A CASE REPORT

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Objective: A 45 year-old women with dysfunctional uterine bleeding was scheduled for total abdominal hysterectomy with bilateral salpingo-oophorectomy under general anesthesia. Patient was evaluated for preoperative anesthesia assessment and was found to have junctional rhythm at rate of 44 beats min⁻¹ with bigeminy, PVCs on her routine ECG evaluation. On further rhythm evaluation, she was diagnosed as congenital sinus node dysfunction on the basis of 24 hours Holter monitoring. She was asymptomatic, no prior comorbid and functional class one. General anesthesia was planned and successfully managed by vigilance, invasive monitoring, standby transcutaneous & transvenous pacemakers and use of cardiostable and vagolytic anesthetic agents like etomidate, atracurium and pethidine during procedure and for postoperative pain management. Transcutaneous external pacing pads were placed just after induction of anesthesia, their functional capability was confirmed and was ready for use if needed. However, the transcutaneous and transvenous pacemakers were on backup and both were not required. Patient was successfully managed and was discharged home on third postoperative day with uneventful hospital course. The elective pacemaker implantation was therefore not required.

Keywords: General anesthesia, Sino-atrial node, Pacemaker

3.10

SERUM SODIUM CONCENTRATION AND CLINICAL OUTCOMES IN PATIENTS WITH HEART FAILURE

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Objective: Heart failure is a chronic progressive clinical syndrome with an adverse prognosis, the 1 year mortality rates estimated at 35 to 40 % in various population based studies. Factors

predicting mortality have been studied and it has been found that in approximately 25 % of patients with heart failure; a low serum sodium is associated with a two to three fold increase in in-hospital and post discharge mortality. In our study, we have explored this relationship between hyponatremia and heart failure in patients coming to a tertiary care centre as there is a paucity of data in Indo-Asians on outcomes of Heart Failure and factors predicting mortality. **Objectives:** To compare, in patients admitted with heart failure, the rate of 30 day mortality in those with a serum sodium concentration of less than 136 mmol/L, with those having sodium concentration of more than 136 mmol/L. To compare length of stay, rate of rehospitalization and functional status (NYHA criteria) in these two groups of patients. **Method:** A prospective cohort study of 164 patients with heart failure was conducted. Patients fulfilling the inclusion criteria were recruited from the emergency department of Aga Khan University Hospital from 23rd December 2009 to 23rd June 2010 and divided in two groups, those having a serum sodium concentrations of < 136 mmol/L and with serum sodium level of =136 mmol/L. Patients were followed for death, length of hospital stay, rehospitalization and functional status at 30 days in both groups which were the main outcome measures and all variables were documented on the proforma. Data was analyzed using SPSS version 13.0 and a P-value of <0.05 was considered statistically significant.

Results: Out of 164 patients, 92% had Hypertension, 88% had Coronary Artery Disease, 62% had Diabetes Mellitus and 40% had Chronic Kidney disease. Mortality was 4% in patients of heart failure with serum sodium = 136mmol/l and 10% in patients with sodium < 136mmol/l. Multivariate analysis showed that the odds of having sodium < 136mmol/l among those who died was 3.04 (95% CI 0.77-12.04) as compared to those who survived, though this was not statistically significant (p=0.113). The odds of having hyponatremia among those who were re-hospitalized was 0.2 (CI 0.05-0.78) times that of those who were not re-hospitalized (p=0.021) and the odds of having hyponatremia among those who had good NYHA functional class was 0.16 (CI 0.07-0.34) as compared to those with poor NYHA functional class (p<0.001).

Conclusion: In this study, serum sodium concentration <136mmol/l was associated with a tendency towards higher mortality but this was not statistically significant. Low serum sodium was significantly associated with lower re-hospitalization rate and poor NYHA functional class. A study with larger sample size or longer follow up period may identify significance of low serum sodium as a predictor of mortality, hence relevant interventions can be targeted to improve outcome.

Keywords: Heart Failure, Hyponatremia, New York Heart Association functional class.

3.11

VENOUS-THROMBO-EMBOLISM IN PAKISTAN – WHAT WE KNOW AND WHAT WE SHOULD KNOW

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Objective: Venous thromboembolism (VTE) is an important cause of in hospital mortality. We aimed to review the current literature of VTE originating from Pakistan to determine gaps in knowledge in order to prioritize future research. **Method:** An electronic search was performed using Pakmedinet

and Pubmed to retrieve research articles on thrombosis, deep vein thrombosis and pulmonary thromboembolism in Pakistan. All original research articles presenting primary data from Pakistan were selected and their full text was reviewed and summarized in our review.

Results: Sixty eight studies were found, out of which we were able to retrieve and review 64 (94%) full texts encompassing a total of 6,269 patients. Among the studies, we found 19 Case Reports/Series, 1 Case-Control, 2 Cohort, 20 Cross Sectional, 1 Quasi-Experimental Study, 2 randomized controlled trials, 4 Retrospective studies and 15 review articles. Most of these were small studies with only 7 having a patient population above 100. Ten studies presented incidence of DVT which ranged from 2.6 to 50% depending on the population under study. 16 articles studied risk factors for DVT. 6 number of studies looked at different treatment modalities, often comparing one modality to the other, while another 12 articles assessed diagnostic strategies. Preventive aspects of VTE were addressed by only 4 number of studies and all found the rates of thrombo-prophylaxis grossly inadequate.

Conclusion: There is a dearth of quality research on venous thromboembolism in Pakistan. We describe key areas of neglect and recommend prioritizing research on the epidemiological and preventive aspects.

Keywords: VTE, Thromboembolism, Venous

3.12

VENOUS THROMBOSIS AT MULTIPLE SITES IN BEHCET'S DISEASE – A CASE REPORT FROM PAKISTAN

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Objective: Behcet's disease is a multisystem inflammatory vascular disorder with a chronic course characterized by recurrent oral and genital ulcers, eye lesion, and arthritis and skin lesions. We report an aggressive case of Behcet's disease in a 39 year old man diagnosed three years back based on cerebral venous thrombosis and recurrent mouth ulcers.

Method: Case: A 39 year old Pakistani man presented to the clinic with scarlet colored acne like rash on face, back, chest and thigh for three days. He also complained of low grade intermittent fever and swelling in his left leg since 4-5 days. He also noticed mouth ulcers up to the throat which were extremely painful. He was diagnosed to have Behcet's disease three years back based on cerebral venous thrombosis and recurrent mouth ulcers. He was treated with warfarin. In previous MRI and MRV repeated few months after cerebral venous thrombosis features were suggestive of partial recanalization of superior sagittal sinus following thrombosis. No evidence of infarct or intracranial hemorrhage was there. Behcet's Disease was confirmed as per International Study Group (ISG) Criteria 1990. There was evidence of venous thrombosis at multiple sites (cerebral venous thrombosis and deep vein thrombosis of left leg veins) along with disease relapse. He also had oral ulcers with superimposed

fungal infection.

Conclusion: We report a case of recurrent venous thrombi at more than one site in a young man with Behcet's disease despite being on anticoagulants. Behcet's disease runs a chronic course with unpredictable exacerbations and remissions. Recurrent venous complications in a young man makes one realize that long-term follow-up in Behcet's is mandatory.

Keywords: Behcet's, thrombosis, ulcer

3.13

MULTIDISCIPLINARY APPROACH IN SMOKING CESSATION

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Objective: The social conditions, in which people live, powerfully influence their chances to be healthy. In Pakistan, about 1200 children take up smoking every day. 51% of the children do not have enough to eat. Each year, approximately 60,000 people die from tobacco-related diseases in Pakistan. Among youth, 1% smoke cigarettes and 9.5 % use other tobacco products such as paan, ghutka and naswar. Smoking cessation has been proven to show immediate health benefits. Smoking cessation clinics offer a range of interventions proven to be effective in facilitating smoking cessation. In clinics combined efforts are developed & activated jointly by nurses & doctors to discourage smoking habits in patients. Activities include distribution of educational material, health education sessions & public awareness programs. Purposes •To highlights the social, cultural and economic factors that are the main determinants of health. •To make people aware regarding promotion of health and reducing health related complications. •To highlight on collaborative responsibility and actions to improve the health status of the population. **Method:** Literature was searched through Google search and CINHALL to identify the strategies for smoking cessation in health care setting

Conclusion: Health professionals can play key-role in the development of comprehensive tobacco control programmes. Health care workers need to be knowledgeable about smoking cessation practices and integrate them into the patient care. Nurses should be aware of resources that can be used to teach patients about disease prevention and health promotion. Multidisciplinary smoking cessation education in direct patient care will help to address the growing health problems. Support by health team members, encouraged positive health behaviors in smokers.

Keywords: Health professionals , knowledgeable, resources

3.14**PREHOSPITAL DELAY AMONG ACUTE CORONARY SYNDROME PATIENTS IN KARACHI, PAKISTAN**

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Objective: Despite the known significance of early reperfusion in Acute Coronary Syndrome (ACS), quite prolonged prehospital delay times (PDT) have been reported among ACS patients, globally. The purpose of this study was to explore the PDT, and its components among ACS patients in Karachi Pakistan.
Method: This cross-sectional study was conducted on 249 ACS patients at the Aga Khan University Hospital and at the Karachi Institute of Heart Diseases, between February and April, 2011. Data was collected through the modified 'Response to Symptoms Questionnaire', and it was analyzed using descriptive analysis.
Results: The median PDT of the study participants was found to be 5 hours (IQR 1.25- 15.5 hours); around 45% of the patients reached the hospital after the first six golden hours of myocardial salvage. It took a median time of 2 hours (IQR 0.5- 7.06 hours) for the participants to make the decision to seek medical care, and a median of 2.5 hours (IQR 1.25-7.75 hours) for them to reach the general physician. The median 'physician-to-hospital delay' was calculated to be 3 hours (IQR 1.38- 15.6 hours).
Conclusion: This study concludes that ACS patients in Karachi delayed substantially longer in reaching the hospital. Moreover, they also had quite extended 'decision delay' and 'physician-to hospital delay'. The findings of this baseline study may provide important insights for designing empirical and interventional studies so as to reduce the prehospital delay time among ACS patients in Karachi, Pakistan.

Keywords: Prehospital delay time , decision delay , Acute Coronary Syndrome

3.15**LEFT VENTRICULAR FUNCION IN PATIENTS WITH THALASSEMIA MAJOR AND ITS CORRELATION WITH SERUM FERRITIN LEVEL**

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Objective: Beta -thalassemia is a hereditary anemia that is most prevalent world wide. The life expectancy of patient with thalassemia major (TM) has significantly increased in recent years; but heart disease is still responsible for more than half of the deaths. **OBJECTIVE:** - My aim was to determine the left ventricular systolic function in thalassemic patients and its correlation with serum ferritin level (SFL).

Method: Thirty thalassemic patients and thirty age, sex matched controls underwent echocardiography at Civil hospitak karachi from june 2005-january 2006. Ejection fraction (EF) and fractional shortening (FS) with other cardiac parameters [left ventricular internal diastolic dimension (LVIDD), left ventricular internal systolic dimension (LVISD), interventricular septum dimension (IVSD), posterior wall dimension (PWD), aorta dimension (AD), left atrium dimension (LAD)] were assessed. Serum ferritin level (SFL) was measured in thalassemic patients and correlated with ejection fraction and fractional shortening.
Results: - left atrial, left ventricular dimension and left ventricular mass were significantly higher in patients than controls (P value < 0.05). Ejection fraction and fractional shortening were significantly lower in patients than control (P value < 0.05). Left ventricular dysfunction (EF <55% or FS < 30%) was observed in nine patients (30%), aged 6 to 12 years. Five patients (62.5%) who had evidence of left ventricular dysfunction (LVD) aged more than 10 years. Among 9 patients 2 (22.2%) had ejection fraction < 55% while other 7 (77.7%) had normal ejection fraction in the presence of fractional shortening < 30%. No statistical significant correlation was found between serum ferritin level, ejection fraction and fractional shortening.

Conclusion: - It is concluded that left ventricular ejection fraction and fractional shortening can be used as an easily available and effective tool for assessing cardiac function in patients with thalassemia major. Serum ferritin level although not very well correlated but can be used as a monitoring tool for measuring body iron (Fe).

Keywords: thalassemia , echocardiography, serum ferritin

3.16**COMPARISON OF OUTCOMES OF CORONARY ANGIOPLASTY IN STEMI WITH EUROPEAN CENTERS**

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Background: STEMI is the component of the acute coronary syndrome with highest in hospital mortality. In the last few years percutaneous coronary intervention (PCI) has played a pivotal role in the management of STEMI . **Objective:** To compare clinical, angiographic factors and outcomes between patients presenting to AKUH with STEMI to those enrolled in the European registry for the same time period.

Method: Data on 594 patients with STEMI was prospectively collected from 1st January 2010, till 31st December 2010 .SPSS version 19 was used for data analysis .Students T test was used to compare means. Pearsons Chi square was used to compare differences in categorical data between both groups. P values <0.05 were considered significant.

Results: A total of 296 patients with STEMI were enrolled from AKUH and 7485 from European centers for the year 2010. Mean age of the patients was 57.8 years (range 50.0-66.6). Most patients to hospital presented with chest pain Risk factors European registry AKUH P value Age >75 years % 19.6% (1496/7485) 11.5%(34/296) p<0.005 Prior MI/angina

29.4% (2185/7485) 42.6% (126/296) $p < 0.005$ Diabetics 23.7% (1759/7412) 34.4% (102/296) $p < 0.005$ Reperfusion strategy European registry AKUH P value Received thrombolytic 33.3% (2493/7485) 4.7% (14/296) $p < 0.005$ Primary PCI 52.3% (3408/6516) 88.4% (236/267) $p < 0.005$ CABG 4.0% (299/7399) 6.08% (18/296) $P = 0.08$ Stents European registry AKUH P value Bare metal stent 71.7 57.5 $P < 0.005$ DES 25.9 42.5 Angiographically, our patients had more complex lesions ($p < 0.005$), as well as a higher proportion of in-stent restenosis and bifurcation stenting. However survival at hospital discharge was also similar between both groups, 91.9% for the AKUH cohort vs 93.1% for European patients. Survival European registry AKUH P value Alive 93.1% 91.9% 0.4
Conclusion: Patient population at AKUH was older, more likely to be diabetic and had more previous coronary artery related events. They underwent revascularization with primary PCI more often and usually for more complex lesions requiring greater use of DES. Survival at discharge was similar compared to European Centers.

Keywords: ST elevation MI, Primary angioplasty, thrombolysis

3.17

PACEMAKERS: TWO FOR THE PRICE OF ONE

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Objective: An 80 year old lady with a prior history of diabetes mellitus and hypertension, underwent implantation of a permanent pacemaker, Intermedics Unity (VDD) in 2000 for complete heart block. She was lost to follow up for the next seven years, presenting to the Aga Khan University hospital in 2007 with a preceding history of nausea, vomiting, dizziness, dyspnea and fatigue for the past three or four days. She denied a history of chest discomfort but had some dyspnea at rest the day of admission. She was found to be in complete heart block with a ventricular escape rhythm at the rate of 30 beats per minute. There was sensing and output failure recorded on ECG. She also demonstrated a long ventricular pause on telemetry monitoring. There was no response to infusion of atropine and dopamine. A temporary pacemaker was planned during insertion of which she developed sudden onset unresponsiveness and apnea during temporary pacemaker lead adjustment. Her permanent pacemaker was found to be in backup mode on interrogation, and when reset to VDD mode, would go back in VVI mode at the rate of 60 beats per minute. This was attributed to end of life behavior, and pacemaker generator was changed to a Sigma SDR 303. The ventricular lead remained unchanged and was set in unipolar mode. Atrial and ventricular thresholds at the time of generator change were 1.0 V at 0.4 msec each. P-wave sensing was > 2.8 mV. Polarity of the atrial lead was changed to bipolar. In August 2010 she came for a pacemaker check and on interrogation she was found to have a high atrial threshold (1.5 V at 0.6 msec) whereas her ventricular threshold was 0.5 V. Impedance of her atrial lead was high 1507 Ω and that of the ventricular lead was 435 Ω . Atrial lead amplitude was increased to 3.0V and it was set in unipolar mode. Three months later she was again seen in pacemaker clinic with good atrial and ventricular thresholds. The patient is well,

asymptomatic on medical therapy, and her pacemaker has been programmed in a DDD mode using a single lead.

Results: This patient had been implanted a single chamber pacemaker (VDD) 7 years prior to presentation and generator had reached its end of life. She was implanted with a Sigma SDR 303, with unchanged ventricular lead. Challenges with single lead DDD pacing include the reliability of atrial capture, which was achieved and remained consistent on follow up. Mid and lower right atrium is the optimal position for atrial electrode for most favorable contact.

Conclusion: Dual chamber pacing with adequate output and threshold was achieved with single lead usage. This is usage of a single lead to achieve dual chamber atrial and ventricular pacing which is more physiological and cost effective, especially for developing countries

Keywords: Diabetes mellitus, hypertension, pacemaker

3.18

UNICUSPID AORTIC VALVE: A RARE DISEASE

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Objective: A 26 year old gentleman with suspected bicuspid aortic valve disease with severe aortic stenosis was referred to AKUH cardiopulmonary department for trans-esophageal echocardiography to evaluate the valve morphology and degree of aortic stenosis

Method: Transesophageal echo: The patient had a unicuspid aortic valve and severe aortic stenosis with peak gradients across the aortic valve of 110 mm Hg and mean gradient of 60 mm Hg. He had a moderately dilated aortic root.

Results: Unicuspid aortic valve is a rare congenital cardiac abnormality. In one study by Cleveland Clinic, the estimated incidence in the referral population is 0.02%. Patients with unicuspid aortic valve are more often male and usually present for surgery in the third decade of life. Aortic stenosis is the predominant valvular lesion. A congenital unicuspid aortic valve is defined by the presence of: an eccentric valvular orifice during systole, the presence of a single commissural zone of attachment or absence of a commissural attachment (acommissural valve) and one aortic leaflet with or without visualization of raphe or raphes during short-axis examination. In adults unicuspid aortic valves are mainly unicommissural. In unicommissural unicuspid aortic valve, the free edge of the aortic valve leaflet arises from a single aortic attachment, continues to encircle the entire orifice, and returns to the aortic wall near its original attachment. This configuration results in a relatively larger effective orifice area than its aocommissural counterpart. As a result, some patients may go into adulthood without manifesting significant valvular obstruction. An important observation is the abundance of calcification found in almost all patients. This calcification may extend into the interventricular septum, increasing the possibility of conduction system damage. In adults it is not known to be associated with other cardiac anomalies, but variations regarding coronary dominance and anatomy are known. Both bicuspid and unicuspid aortic valve have been associated with an increased risk of dissection. Unicuspid aortic valve may present in younger age – a less

aggressive form or in a younger age which is more aggressive disease.

Conclusion: Congenital unicuspid aortic valve disease is a very rare echocardiographic finding. Our patient was a young male with a unicuspid aortic valve and severe aortic stenosis. He would be a candidate for aortic valve replacement, with possible aortic root replacement

Keywords: Unicuspid, unicommissural, aortic valve

3.19

A RANDOMIZED CLINICAL TRIAL TO COMPARE THE EFFECTIVENESS OF A LOW CARBOHYDRATE WITH A LOW FAT, LOW CALORIE DIET, TO ACHIEVE WEIGHT LOSS OVER SIX MONTHS, IN OVERWEIGHT PAKISTANI ADULTS

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Objective: The emergence of obesity as a significant global health problem has been recognized the past couple of decades. This is a condition that affects almost one sixth of the world's population. Initially thought to be a significant health problem exclusively of the higher income countries, it is now established that this "obesity pandemic" has become a major health problem for developing countries as well. Morbidity and mortality risk, especially cardiovascular risk is increased for overweight and obese people. Dietary interventional strategies have been an effective method for weight loss

Method: To study whether a low carbohydrate diet is more effective than a low fat, low calorie diet in achieving weight loss over a six month period in overweight (body mass index, = 23 kg/m²) adults. A secondary objective is to compare the effect of both diets on the waist circumference, a marker of abdominal obesity and mean arterial pressure. *METHODS:* This was a randomized, controlled trial with double blinding held at the Aga Khan University Hospital. The participants were overweight adults meeting a body mass index (BMI) criteria of = 23 kg/m² Interventions: The first regimen was a low carbohydrate diet with carbohydrate restriction to <35 gms per day. The second regimen was a low fat, low calorie diet with total daily calories restricted to 1000-1200 kCal/day. Separate instruction manuals were made with for both dietary regimens and individual dietician counseling sessions were held at baseline and 3 months.

Results: A total of 120 participants were randomized with 58 enrolled in plan A (low carbohydrate diet), and 62 in plan B (low fat low calorie diet). The mean age (\pm SD) of the participants was 35.65 \pm 9.8 years, the majority of whom were female (67.3%). Mean daily caloric intake was similar between the two groups. The mean weight of the participants was 80.8(\pm 15.8) kgs, with mean BMI 29.44 (\pm 4.89) kg/m². By the end of the trial at 6 months, there was no statistically significant difference between the randomized groups with respect to mean weight which was 81.05 \pm 16.5 kg in the low carbohydrate arm and 78.70 \pm 15.63 kg in the low fat low calorie arm (p=0.42). The change

in mean weight (SD) over six months was greater in the low fat low calorie diet vs. low carbohydrate diet, albeit the difference was not statistically significant, (-1.25 \pm 2.77 vs. -0.66 \pm 2.61 kgs) (p=0.23). Our generalized linear model with moderate correlation that explained about one third of the effect of weight change over six months. Self reported adherence to the dietary regimen for more than 4 weeks (p=0.03) and increasing physical activity at six months (p=0.04) were independently associated with increased weight loss. Post graduate educational level was independently associated with a weight gain at six months (p=0.04)

Conclusion: CONCLUSION The study revealed that the dietary intervention using a low carbohydrate diet was not superior to a low calorie diet. The factors independently associated with weight loss include self-reported adherence to the dietary regimen for more than 4 weeks with more than 80% compliance (p=0.03) and increased physical activity at six month follow up (p=0.04).

Keywords: low carbohydrate diet, overweight, obesity

3.20

PROPORTION OF ELEVATED BLOOD PRESSURE AND BODY MASS INDEX

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Objective: Obesity and hypertension are the two main risk factors for CVD. We evaluated the proportion of elevated blood pressure and elevated BMI amongst apparently healthy individuals and their association with age and gender.

Method: This study was conducted at a Tertiary Care Teaching Hospital, in Karachi, Pakistan. 207 participants were referred for physical checkup which included general and physical examination with height, weight, blood pressure, along with hemoglobin, ESR, urine report, Mantoux test and chest radiograph.

Results: Out of 207, 53.1% were less than or 25 years of age. 43.0% were found to have elevated BMI and 61.4% had elevated BP. Almost equal proportions of males and females were included. Among the males, 53.9% had elevated BMI and 70.1% had elevated BP. In logistic regression analysis, significant association was found between older age and elevated BMI (OR = 2.28, CI = 1.30 - 2.29). The odds of having elevated blood pressure was higher among males with an adjusted odds ratio of 8.02 (CI = 4.01 - 15.71). In the unadjusted regression model, older age group was associated with elevated BMI (unadjusted OR = 2.28, CI = 1.30 - 3.99)

Conclusion: Our results concluded that more males had elevated BP than females which put them at a higher risk for CVD. An early detection can prove to be beneficial because the management of CVD is costly compared to its prevention.

Keywords: Obesity, hypertension, BMI

3.21

CLINICAL COURSE AND OUTCOME OF PATIENTS WITH STATUS ASTHMATICUS IN A TERTIARY CARE CENTRE IN PAKISTAN

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Objective: Introduction Status asthmaticus is an acute exacerbation of asthma defined as “a progressively worsening attack that is unresponsive to the usual standard treatments of bronchodilators and corticosteroids leading to pulmonary insufficiency” Objective To describe the clinical course and outcome of patients admitted with status asthmaticus
Method: Study Design: Retrospective descriptive study Setting: Aga Khan University Data Collection: January 2000-December 2009 Exclusion criteria: Asthmatic patients younger than 16 years Patients admitted with asthma exacerbation but responded well to usual treatment Patients with smoking history of more than 10 pack years COPD

Results: The mean age of the patients was 54± 21 years. 87% of them were females. 21% of the patients had no prior comorbid conditions. 34 (73.91%) patients required ventilatory support, 17(36.95%) of these required noninvasive ventilatory support and 17(36.95%) required invasive ventilatory support. The mean duration of hospital stay was the following: 5.58±5.58 days for patients with no ventilatory support, 7.59±4.38 days for patients with non-invasive support and 10.71±7.33 days for patients with invasive mechanical support. Mean APACHE II score was 9.58±4.40. Complications included respiratory failure in 33(71.73%), cardiac arrhythmias in 7(15.21 %), sepsis in 5(10.86%), and pneumothorax in 1(2.17%) patient. 3(6.52%) patients died, 2 due to sepsis and 1 due to respiratory failure. All the non-survivors were females. Mean APACHE II score was 9.30±4.39 vs. 13.66±2.08, mean PaCO₂ was 53.83±23.07 mmHg vs. 80.0±15.13 mmHg and mean arterial pH was 7.33±0.11 vs. 7.21±0.09 among survivors and non survivors respectively.

Conclusion: Our study showed that non survivors had higher APACHE II scores, lower pH values and higher PaCO₂ levels. The duration of hospital stay was not found to have a significant correlation to mortality, however it was associated with the use of invasive ventilatory support.

Keywords: Status asthmaticus, APACHE

3.22

COMPLIANCE WITH GUIDELINES: ACUTE ST-ELEVATION MYOCARDIAL INFARCTION AT TERTIARY CARE HOSPITAL, KARACHI PAKISTAN

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Objective: ACC/AHA Guidelines for ST elevation myocardial infarction provides the evidence for the best available treatment to reduce mortality. In low socioeconomic country like Pakistan adherence to the guidelines is a challenge, with compromised

health care system and non availability of health insurances. The purpose of the study was to assess the degree of compliance the American College of Cardiology/American Heart Association guidelines on ST elevation myocardial infarction and in-hospital mortality.

Method: Retrospective chart review of patients with ST elevation myocardial infarction from June 2009-July 2010 was done. Only patients who underwent primary angioplasty were included. Data was collected using a tool designed to incorporate the components of Acute STEMI guidelines.

Results: Out of 150 charts reviewed 95 were included in the study based on inclusion and exclusion criteria. 72 patients (75.8%) were male. All patients received Aspirin on arrival. On discharge 92% of patients received aspirin, 80% ACE/ARB's, 87 % and 86% received statins. 2.8% received documented quit smoking advice .Door to balloon time was 100 minutes (median). The ECG to catheterization laboratory time was 60 minutes (median). In hospital mortality occurred in 8% of patients.

Conclusion: Our data shows compliance to guidelines for on arrival and discharge medications and comparable in hospital mortality. Delay occurred in transfer to catheterization laboratory was noted once the diagnosis was made. The reasons for the delay were not documented which could be because of delay in decision by the family or financial issues. It is recommended that reasons for delay be investigated and also to implement a clinical pathway for optimal care.

Keywords: Myocardial infarction, compliance, guidelines

3.23

COMPLIANCE WITH GUIDELINES: ACUTE ST-ELEVATION MYOCARDIAL INFARCTION AT TERTIARY CARE HOSPITAL, KARACHI PAKISTAN

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Keywords: Myocardial infarction, compliance, guidelines

3.24

ANTIHYPERTENSIVE, HYPOLIPIDEMIC AND ENDOTHELIAL MODULATING EFFECTS OF HERBAL FORMULATIONS; ZPTO AND ITS MODIFIED FORM ZTO

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Objective: The study was designed to provide pharmacological basis of a herbal formulation (ZPTO) consisting of Zingiber officinalis (Z), Piper nigrum (P), Terminalia bellerica (T) and Orchis mascula (O) alongwith individual components in cardiovascular disorders (CVDs).

Method: In-vivo assays were performed in rats. Biochemical parameters were assessed using kit methods. Isolated tissue experiments were carried out in rabbit jejunum preparation. **Results:** In spontaneously hypertensive rats (SHR), the formulation (ZPTO) markedly reduced blood pressure and reversed endothelial dysfunction by augmenting the acetylcholine (ACh)-induced relaxation. Administration of ZPTO to SHR decreased serum triglycerides (TG) levels. In high fat diet-fed rats (HFDR), ZPTO decreased total cholesterol (TC), low density lipoproteins (LDL) and atherogenic index (TC-HDL/HDL). However, ZPTO caused a mild acceleration of heart rate in SHR and had no effect on HDL and TG in HFDR. When ZTO, a modified form of ZPTO, was administered to SHR and HFDR, it not only shared beneficial effects of its parent preparation but also presented additional benefits, like reduction in TG and glucose levels and substantial increase in HDL level in HFDR. ZTO was found devoid of cardiac stimulatory effect in SHR, which was seen with ZPTO. The parent preparation and ZTO had strong antioxidant activities in vitro. In isolated rabbit jejunum, the crude extracts of original formulation and ZTO caused a concentration-dependent (0.1-10 mg/ml) inhibition of spontaneous and high K⁺-induced contractions, and caused a rightward shift in the Ca⁺⁺ concentration response curves, similar to verapamil.

Conclusion: In conclusion, these findings validate the medicinal use of ZPTO and shared additional benefits in the modified formulation (excluding black pepper) in hypertension and dyslipidemia.

Keywords: Herbal formulation (ZPTO), antihypertensive, antidyplipidemic

3.25

PHARMACOLOGICAL BASIS FOR THE MEDICINAL USE OF MENTHA ARVENSIS IN AIRWAYS DISORDERS

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Objective: This study explores possible mechanisms for medicinal use of Mentha arvensis (Mint) in air ways disorders such as, bronchitis and asthma.

Method: In-vivo experiments were performed in rats. Isolated tissue experiments were performed in rabbit and guinea-pig tracheal preparation.

Results: The crude extract of Mentha arvensis (Mint) leaves (Ma.Cr) was tested positive for the presence of alkaloids, tannins, terpenes, flavonoids, sterols and coumarins. In anaesthetized rats, Mn.Cr caused a dose-dependent (3–10 mg/kg) suppression of carbachol (CCh, 1 μmol/kg)-induced bronchoconstriction/increase in inspiratory pressure. In isolated guinea-pig tracheal preparations, Ma.Cr relaxed CCh and K⁺(80 mM)-induced contractions at 0.03-10 mg/mL in a pattern similar to that of papaverine and dicyclomine. Preincubation of tissues with the extract (0.01 and 0.03 mg/mL) shifted the isoprenaline-induced inhibitory concentration-response curves (CRCs) to the left, similar to that caused by papaverine indicating phosphodiesterase enzyme(s) (PDE) inhibitory activity. When tested for its interaction with muscarinic receptors, it was found that preincubation of tissue with lower concentration (0.1 mg/mL) of Mn.Cr produced a rightward parallel shift in CCh curves without suppression of the maximum, which indicated antimuscarinic effect, while a non-parallel shift with the suppression of maximum response was observed at its the higher concentration (0.3 mg/mL) of the extract, suggesting Ca⁺⁺ antagonist activity, similar to dicyclomine. When tested for its interaction with Ca⁺⁺ channels, pretreatment of tissue with Ma.Cr shifted the CRCs of Ca⁺⁺ to the right with suppression of the maximum response, similar to observed effects of nifedipine.

Conclusion: These results indicate that bronchodilatory effect of Mentha arvensis is mediated through a combination of PDE inhibitory, anticholinergic and Ca⁺⁺ antagonist pathways, which provides a sound mechanistic background for its medicinal use in airways disorders.

Keywords: Mentha arvensis, Mint, Bronchodilatation

3.26

ANTIPLATELET AGGREGATING ACTIVITY OF LAVENDER

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Objective: Fatima Shahid¹, Anoosh Moin¹, Ahsana Dar² Shagufta Khan¹ ¹Department of Biological and Biomedical

Sciences, Aga Khan University Medical College, Karachi, Pakistan 2HEJ Research Institute of Chemistry, International Center for Chemical and Biological Sciences, Dr Panjwani Center for Molecular Medicine and Drug Research, University of Karachi, Pakistan Inflammatory reactions are one of the major causes of cardiovascular diseases, viz myocardial infarction, and neurological disorders, e.g. stroke and Alzheimer's disease. The antiplatelet and antiinflammatory properties are linked, as the platelets interact with leukocytes and accelerate the inflammatory cascade leading to pathologies. The *Lavandula stoechas* belongs to family Labiatae and is used medicinally in the treatment of a number of disorders such as inflammatory diseases. Present study is conducted to investigate the antiplatelet aggregating activity of *Lavandula stoechas* flower extract. *Method:* Venous blood was taken from healthy human volunteers reported to be free of medications for a minimum of one week prior to sampling. Platelet aggregation was monitored using Aggregometer. Different doses of *Lavandula stoechas* extract were evaluated for their antiplatelet aggregating activity in the presence of aggregating agents; arachidonic acid, epinephrine and adenosine-di-phosphate and compared with their respective control. Aspirin, clopidogrel and yohimbine were used as reference drugs.

Results: Our results showed that *Lavandula stoechas* extract caused dose depended (0.5-08 mg/ml) inhibition of adenosine-di-phosphate and epinephrine induced platelet aggregation reaching to complete inhibition at 8 mg/ml dose. Whereas, arachidonic acid induced platelet aggregation was completely inhibited at 5 mg/ml dose of extract.

Conclusion: These findings suggest that methanol extract of *Lavandula stoechas* flower possess antiplatelet aggregating activity that may be of clinical value. Amongst all the tested aggregating agents it was found to be most effective against arachidonic acid. However, further studies are required to identify its active compound(s) via bioassay guided-fractionation method.

Keywords: Blood, Platelet aggregation, *Lavandula stoechas*

3.27 PREVALENCE OF CARDIOVASCULAR RISK FACTORS AMONG PATIENTS UNDERGOING ELECTIVE CORONARY ARTERY BYPASS SURGERY

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Objective: Globally 80% cardiovascular disease deaths occurred in low and middle income countries with almost equal proportion in both gender. Evidence shows that people in low and middle income countries are more exposed to cardiovascular risk factors while less exposed to preventivemeasures. It may lead to long course of management by either/ both medical and surgical techniques including coronary artery bypass surgery, increasing the economic burden. In order to find avenue for prevention, we aimed to measure the prevalence of cardiovascular risk factors among patients undergoing elective CABG in Karachi, Pakistan. *Method:* : Information was collected through structured questionnaire and entered into Microsoft Access software. On the basis of research hypotheses, specific data chunk was extracted and analyzed in SPSS 19.

Results: In this retrospective chart review, 2073 patient undergoing elective CABG between Jan 2006 to June 2011 were included.

Mean age of the patients was 54.85±9.7 years. Out of all, 14.7% patients were females. Family history was present in 53%, 47.7% were smokers. Conventional risk factors of overweight was 47.10%, obese was 14.7%, diabetes was 47.7%, hypertension was 69.50%, dyslipidemiawas 50.20%, renal failure was 9.2% and prior MI was 46.7%. Outcomes includeoperative mortality of 0.3% while14.8%, renal failure, 7% arrhythmias, 2.3% reoperation and 3.1% prolonged ventilation as postoperative complications.

Conclusion: There is a high prevalence among patients undergoing elective CABG of coronary risk factors including dyslipidemia, hypertension, diabetes and smoking.

Keywords: CABG, elective, risk factors

3.28 USE OF BICAVAL, DOUBLE LUMEN, SINGLE SITE AVALON ELITETM -CANNULA FOR VENO-VENOUS EXTRA-CORPOREAL MEMBRANOUS OXYGENATION FOR POST-PNEUMONECTOMY ADULT RESPIRATORY DISTRESS SYNDROME

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Objective: Acute respiratory distress syndrome is a serious complication after pneumonectomy and carries a high mortality. Extracorporeal membranous oxygenation (ECMO) is a highly useful method to reverse hypoxia in patients with acute respiratory distress syndrome (ARDS). Traditionally, venovenous extracorporeal membranous oxygenation (V-V ECMO) has required double site cannulation.

Method: We report a case of a successful bed side insertion and use of a single site, bicaval, double lumen Avalon EliteTM cannula (Avalon Laboratories, Rancho Dominguez, CA, USA) for extracorporeal membranous oxygenation therapy in a 59 year old male patient with acute respiratory distress syndrome after a right sided total pneumonectomy for lung cancer. *Results:* The patient was successfully supported with V-V ECMO. There was an immediate improvement in arterial pO₂ and pCO₂. After the left lung improved with rest on V-V ECMO, the patient was successfully weaned off extracorporeal support and was then supported on conventional ventilatory settings. *Conclusion:* V-V ECMO is a safe and an effective mode of support for patients with acute respiratory failure that is not amenable to conventional methods. Previously, V-V ECMO has been routinely done with dual cannulation. This case report highlights the feasibility of bedside insertion and use of a single site, bi-caval, double lumen Avalon EliteTM cannula. This strategy can facilitate mobilizing and even extubating these patients early. Based on this clinical case, early use of single site, bi-caval, double lumen cannula V-V ECMO in patients with ARDS after pneumonectomy not responding to conventional ventilation can be a lifesaving intervention.

Keywords: VV-ECMO, ARDS, single port cannulation

3.30 INCIDENT REPORTING IN PAEDIATRIC CARDIAC ANAESTHESIA

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Objective: Incident reporting is a reliable quality assurance tool, frequently used in anaesthesia to identify errors. It was introduced in anaesthesia by Cooper in 1978 and since then several departments have used voluntary incident reporting to find adverse events and near misses. Incident reporting is probably more important for prolong and technically complex procedures like paediatric cardiac surgery which require longer hospital stay. We started incident reporting in paediatric congenital heart disease (CHD) surgery patients with the aim of improving the quality of care.

Method: All CHD patients who were scheduled for surgery included in this audit. Any event in preoperative area, induction room, operating room and during transfer to cardiac ICU was documented in a predesigned proforma. This proforma included information regarding demographics, the type and severity and responsible factors for the event.

Results: Total 60 forms were completely filled during 18 months period. 41 patients were males while 19 were females. Tetralogy of fallot 19 (31.7%) and VSD 17 (28.7%) were the commonly performed procedures. Cuffed ETT was used in 90% of patients. 55 incidents were reported in 22 patients. 29 (51.8%) incidents were due to difficult intravenous and invasive line access. Four patients had carotid puncture during central line insertion. There were two incidents in each category of intubation related problems, ETT and circuit disconnection, monitoring problems and extravasation. While only one incident of bronchospasm, unanticipated difficult intubation, circuit disconnection and cardiac arrest was reported. These incidents led to major physiological impairment in only two patients while rest had no or only minor physiological changes.

Conclusion: Incident reporting is a reliable and feasible method of improving quality care in developing countries. It helps in identifying areas which needs improvement. It can also be used to create awareness among hospital staff and development of guidelines to improve safety.

Keywords: Incidents, paediatrics, congenital

3.31 CONSTRICTIVE PERICARDITIS - A DIAGNOSTIC CHALLENGE

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Objective: Constrictive pericarditis is characterized by a fibrous, thickened pericardial layer which prevents the cardiac chambers from regular filling. Today, this disease is often caused by previous cardiac surgery or mediastinal radiotherapy, whereas tuberculosis as a cause is less important nowadays. The diagnosis of constrictive pericarditis (CP) continues to be a challenge in the modern era. Understanding the pathology and interpreting the results of invasive and non-invasive techniques are important

in the differential diagnosis of CP and e.g. restrictive cardiomyopathy.

Method: Databases we searched were MEDLINE (PubMed), the Cochrane, Embase and Scopus. Key words used included 'constrictive pericarditis', 'restrictive cardiomyopathy', 'pericardial calcification', 'tuberculous pericarditis' and 'diastolic dysfunction'.

Results: Due to the reduced diastolic filling the cardiac output of the patients with constrictive pericarditis is diminished and the veins are engorged. The patients present with ascites, effusion, the ECG or an echocardiography may give first hints for the diagnosis. The chest X-ray examination might detect pericardial calcifications, echocardiography and cardiac catheterization, especially during breathing maneuvers, are diagnostic, as they demonstrate the diastolic filling disturbance, the equal increase of left and right ventricular end-diastolic and mean atrial pressures, and the strong dependency of ventricular filling from respiration. Computed tomography or magnetic resonance imaging might reveal the thickened pericardial layer. The most important differential diagnosis is restrictive cardiomyopathy, which has similar clinical and hemodynamic findings.

Conclusion: A comprehensive diagnostic work-up is necessary, as the constrictive pericarditis may be cured by a timely performed pericardial resection.

Keywords: Constrictive pericarditis, restrictive cardiomyopathy, diastolic dysfunction

3.33 BILATERAL AIRWAY FOREIGN BODY ASPIRATION AS A CAUSE OF RECURRENT PNEUMONIA

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Objective: Foreign body aspiration (FBA) into the lower airway requires a high index of suspicion. Identification of the problem can be difficult as it has a broad range of clinical presentation and often mimics other medical conditions. A delay in diagnosis and management can result in serious complications.

Method: The authors report the case of a middle aged man with bilateral airway FBA who had a history of six hospitalisations over the previous 10 years with recurrent pneumonias.

Results: A 50-year-old male gardener presented with a 1-week history of fever and productive cough and a 1-day history of spitting blood. The past medical history was significant for multiple hospitalisations over 10 years with recurrent pneumonia involving both lungs. The patient was treated with intravenous piperacillin/tazobactam after all the relevant clinical investigation but showed no clinical improvement. He underwent fibre optic bronchoscopy which revealed betel nuts impacted in right upper lobe bronchus and left lower lobe bronchus. The left sided betel nut was removed by flexible bronchoscope, while right sided foreign body removal required rigid bronchoscopy by a thoracic surgeon.

Conclusion: Bilateral FBA is a rare entity which may remain undiagnosed for years despite recurrent infections. This emphasises the fact that healthy individuals may tolerate aspiration of foreign bodies for a long time without life-threatening consequences.

Keywords: pneumonia, betel nut, aspiration

3.35

THE EFFICACY OF SPIROMETRY AS A SCREENING TOOL IN DETECTION OF AIR FLOW OBSTRUCTION

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Objective: In developing countries, spirometry has not been considered a part of routine medical check-up. The purpose of the study was to establish the usefulness of spirometry as a primary screening tool in detecting air flow obstruction (AFO) during routine medical check-up (RMC).

Method: This was a hospital based, retrospective, non-randomized case series study of 3696 participants, who presented to hospital for routine medical check-up. All subjects were assisted at the Pulmonary Medicine Department, from January 2003 till December 2008 who, having met other inclusion criteria, underwent spirometry. Data were analyzed using proportion, group means, standard deviations and Pearson Chi Square test.

Results: The overall yield from spirometry in detecting AFO was 211 patients (5.7%); 174 males (6.1%) and 37 females (4.4%) (P=0.158, Pearson Chi Square test). Greater age at presentation and BMI correlated significantly with AFO in the target group (P<0.001; P<0.005) respectively. Dyspnoea was the most frequent symptomatology observed in those diagnosed with AFO.

Conclusion: These results suggest that spirometry during RMC for all persons can detect a significant number of patients with AFO particularly among the middle and older age groups with a low BMI.

Keywords: Spirometry, airflow obstruction, Routine medical check-up, early screening

3.36

ACUTE PULMONARY EMBOLISM PRESENTING AS STATUS ASTHMATICUS: A CASE REPORT

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Objective: Acute massive pulmonary embolism (PE) is a common and often fatal disease. Mortality from massive PE can be reduced by early diagnosis and aggressive treatment. Due to its non-specific presentation more than half of all PE remain undiagnosed. Untreated massive PE is associated with a with a very high mortality rate of over 50 percent. Typical presentation of massive PE is with sudden onset of chest pain with dyspnea along with signs of severe hypoxia and hypotension. Below is a case of massive pulmonary embolism presenting as status asthmaticus and shock.

Method: A 31 year old male with no past medical history presented with a 2 day history of flu like symptoms of cough, rhinorrhea and progressive shortness of breath. He was seen at an outside hospital and managed as acute asthma with partial improvement. On the day of presentation he woke up with acute shortness of breath followed by unconsciousness. On arrival to ER he was diaphoretic and unresponsive. His blood pressure was 50/20 mmHg, pulse 140/min, respiratory rate of 26/min. His oxygen saturation on room air was 80 %. On exam he had

cold extremities and bilateral polyphonic wheezes. Soon after arrival to ER patient he went into pulse less electrical activity, was intubated and underwent CPR for 10 minutes. Arterial blood gases showed severe respiratory & metabolic acidosis, other labs including chest radiograph and EKG were unremarkable. Despite aggressive management of asthma with steroids and bronchodilators and vasopressors and fluid for shock the patient stayed hypotensive. Due to persistent hypotension and severe acidosis an echocardiography was done, which showed a dilated and hypokinetic right ventricle with paradoxical interventricular septal motion. The estimated pulmonary artery systolic pressure was 60 mmHg. A spiral CT of the chest was performed, which showed extensive bilateral pulmonary thrombi identified in both the right and left main pulmonary arteries extending into the lobar branches. The patient was given intravenous streptokinase bolus followed by an infusion for 24 hours. Over the course of the next day his shock improved and the wheezing disappeared. Subsequently the patient made a complete recovery and was discharged home on oral anticoagulation. A repeat Spiral CT scan showed resolution of the main pulmonary artery thrombi.

Conclusion: Acute Pulmonary embolism should be considered in the differential diagnosis of severe bronchospasm with hemodynamic compromise especially if the patient doesn't respond to initial therapy.

Keywords:

3.37

POST INTUBATION TRACHEAL STENOSIS - A CASE REPORT

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Objective: Tracheal stenosis, a well-known complication of endotracheal intubation and mechanical ventilation, is most likely to occur in critically ill patients requiring prolonged mechanical ventilation. Although a rare complication, and despite technological improvements and better patient care in intensive care units, tracheal stenosis still constitutes a serious clinical problem which can also develop after a short period of mechanical ventilation. The area of the trachea that is affected is usually 2 cm long and involves the anterior and lateral walls. The posterior wall is relatively protected from stenosis

Method: 45 years old obese gentleman K/C Hypertention, Ischemic cardiomyopathy, Nephrotic syndrome, OSA presented to ER with four days history of shortness of breath, fever and cough. He had history of liposuction in the recent past for which he remained in ICU and was mechanically ventilated for about a week time. At the time of presentation he had hypoxia, tachycardia and tachypnea. Possibility of acute pulmonary embolism was ruled out and the treatment for heart failure was optimized but he did not respond clinically. Spirometry (figure 1) was performed which showed fixed airway obstruction. Fibre optic bronchoscopy (figure 2) confirmed the diagnosis of tracheal stenosis secondary to endotracheal intubation. The patient underwent tracheal reconstruction surgery and was discharged home.

Conclusion: Possibility of post intubation tracheal stenosis is high in mechanically ventilated patients particularly those with high endotracheal tube cuff pressure. Spirometry is the simple and easy test that can diagnose fixed upper airway obstruction even at bedside.

3.38

COMMUNITY BASED LIFESTYLE INTERVENTION FOR BLOOD PRESSURE REDUCTION IN CHILDREN AND YOUNG ADULTS IN DEVELOPING COUNTRY: CLUSTER RANDOMISED CONTROLLED TRIAL

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Objective: To assess the effectiveness of a community based lifestyle intervention on blood pressure in children and young adults in a developing country setting

Method: Cluster randomised controlled trial. Twelve randomly selected geographical census based clusters in Karachi, Pakistan. Participants 4023 people aged 5-39 years. Intervention Three monthly family based home health education delivered by lay health workers. Main outcome measure Change in blood pressure from randomisation to end of follow-up at 2 years. **Results:** Analysed using the intention to treat principle, the change in systolic blood pressure (adjusted for age, sex, and baseline blood pressure) was significant; it increased by 1.5 (95% confidence interval 1.1 to 1.9) mm Hg in the control group and by 0.1 (-0.3 to 0.5) mm Hg in the home health education group (P for difference between groups=0.02). Findings for diastolic blood pressure were similar; the change was 1.5 mm Hg greater in the control group than in the intervention group (P=0.002).

Conclusion: Simple, family based home health education delivered by trained lay health workers significantly ameliorated the usual increase in blood pressure with age in children and young adults in the general population of Pakistan, a low income developing country. This strategy is potentially feasible for up-scaling within the existing healthcare systems of Indo-Asia.

Keywords: lifestyle intervention , blood pressure reduction , randomised controlled trial

3.39

ANALYSIS AND REFERENCE VALUE OF SIX-MINUTE WALKING DISTANCE IN HEALTHY PAKISTANI SUBJECTS

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Objective: Background: Six-min walk test (6MWT) is useful in assessing functional exercise capacity of individuals with

cardiopulmonary disease. Previous authors have published predictive equations for 6MWT distance (6MWD) among diverse populations groups with varying results. However, regression equations have yet to be established for the Southeast Asian population. We aimed to determine the 6MWD for healthy Pakistanis, identify factors affecting 6MWD and derive an equation.

Method: Methods: Subjects between 15 and 65yrs were prospectively enrolled after screening. A standardized 6MWT was administered. SpO₂, HR, BP and dyspnea scores were determined pre and post-test.

Results: Results: 296 subjects [211 (71%) men and 85 (29%) women] participated. Mean age was 37.3±12 yrs. The mean 6MWD for all participants was 469.88 ±101.24m (range 180m - 756m) [men 502.35 ± 92.21m ;women 389.28 ± 74.29m]. On univariate analysis gender, weight, height and age showed a significant relationship with the 6MWD. Sub analysis revealed a significant direct relationship between height (r=0.485, p=0.001) and weight (r=0.212, p<0.001). Gender and age were identified as independent factors in multiple regression analysis, and together explained 33% of the variance. The regression equation predicting 6MWD is: $y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \epsilon$ With an intercept term (β_0), slope parameters ($\beta_1, \beta_2, \beta_3$), one dichotomized variable of gender ($X_1, X_1 = '0'$ if the subject is female, and '1' if male). The sex-specific prediction equations are: 6MWD (m) for men = 164.08 + (78.06*1) - (1.90*age) + (1.95*height) 6MWD (m) for women = 164.08 - (1.90*age) + (1.95*height) Comparison with published equations revealed a moderate overestimation of the 6MWD in our population.

Conclusion: Conclusions: 6MWDs among Pakistanis are shorter than predicted by reference equations in literature. The proposed equation gives predicted (mean) 6MWDs for adult Pakistani naïve to the test when employing standardized protocol. Prospective validation of this equation in future larger community based studies is warranted.

Keywords: 6 min walk, PFTs, Reference equation

3.40

ALL THAT WHEEZES IS NOT ASTHMA

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Objective: "All that wheezes is not asthma" this adage accredited to Chevalier Jackson emphasizes the importance of differentiating asthma from its mimics, particularly if the patient is not responding to usual therapy. We present a case of bronchospasm which eventually found to have oesophageal achalasia.

Method: Case Report 51 year old lady presented with complains of cough for 15 days, fever for 5 days and worsening shortness of breath for the last 3 days. Her cough worsened after taking meals and on lying down as well, her fever is associated with chills and his high grade and her shortness of breath was aggravated by lying down as well as on exertion. Prior to coming to hospital she had been treated for his cough and shortness of breath with the diagnosis of Asthma but she didn't responded. She had a history of recurrent cough for the last 1-2 month

associated with shortness of breath. She had been diagnosed as a case of hyperthyroidism and was treated with Carbamazepine for last three weeks, she also had been treated as GERD and H-pylori induced gastritis. At presentation she was in respiratory distress with respiratory rate of 28/ minute. Her chest examination revealed severe bilateral poly-phonic ronchi along with crackles at bases. She was not hypoxic and her Chest X-ray was normal. She was admitted with a working diagnosis of infective exacerbation of Asthma and was initially started on intravenous steroids, nebulizers and antibiotics. The next morning she was better symptomatically and her chest auscultatory findings improved but there was a stridor present after exertion. In view of high clinical suspicion her CT scan Neck and Chest was done which revealed dilated cervical and thoracic oesophagus, causing compression and anterior displacement of the trachea (Figure: 1) Her barium Swallow was done which confirmed the diagnosis of Oesophageal Achalasia (Figure: 2) Endoscopic balloon dilatation was performed and she was then discharged home. **Conclusion:** Physician should protract a high index of suspicion for diseases that mimic asthma, particularly when the patient fails to respond to the therapy.

Keywords: asthma, wheezes, hiatus hernia

3.41 SPIROMETRIC STANDARDS FOR PREDICTED FEV1 AND FVC IN NORMAL PAKISTANI SUBJECTS.

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Objective: Spirometric evaluation of FEV1 and FVC are variable dependants of ethnicity, gender, height and age. International standards of predicted FEV1 and FVC are derived from normal caucasian individuals and extrapolated to different ethnic populations. Predicted normals vary with ethnicity, and established practice is to use a 15% reduction in FEV1 and FVC to account for these. Our objective was to determine whether such predicted FEV1 and FVC apply to our population, and whether there was any correlation in our observed data versus predicted standards. **Method:** We accessed our PFT lab database to extract spirometric data for adult subjects (age > 16 years) over the last 5 years. Subjects who were asymptomatic and had normal spirometry by ATS criteria were included in the database. Predicted FEV1 and FVC obtained according to ATS recommendations. Data was analyzed using SPSS 18. **Results:** Data was analysed on 2453 subjects. 81% (n=1988) were male, 19% (n= 465) were female. Median age for males was 40 yrs, range (16-75) years, for females 44 yrs (range 16 – 75) years. Median height for males was 170 cm, (range 118 - 190) cm, and for females was 156 cm (range 116 - 175) cm. Using a two tailed Pearson correlation model significant at 0.01 level, a weak correlation was noted between Predicted FEV1 vs. Actual FEV1 (r=0.105) and Predicted FVC vs. Actual FVC (r=0.454). On univariate and multivariate models, age, height and gender are independent predictors of FEV1 and FVC, statistically significant at the 0.01 level.

Conclusion: In our population, there is a weak correlation between standardized predicted parameters vs. observed parameters of both FEV1 and FVC. Both FEV1 and FVC are a function of gender, height and age. Our analysis highlights the need for a prospective study to evaluate and establish normal FEV1 and FVC parameters for our population.

Keywords: Predicted FEV1, Predicted FVC, correlation analysis

3.42 EXPERIENCE WITH A CHRONIC VENTILATION SERVICE

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Objective: In Pakistan increasing numbers of patients are surviving critical illness, but require long term ventilation. Prolonged ICU stay has limitations from scarcity of beds, rehabilitative efforts and financial costs. Home or facility based ventilation has become accepted practice for such patients. We developed a home-based chronic ventilation service and present data from the Chronic Vent Registry.

Method: All ventilator-dependent patients discharged home on portable ventilators from January 2000 – December 2010 were contacted at 12 months post-discharge. Survivors were administered an Urdu translation of EuroQOL (EQ-5D) quality-of-life questionnaire, evaluating mobility, self care, usual activities, discomfort, anxiety and a single index value on visual analogue scale. Primary caregiver administered the questionnaire to the patient. SPSS 16 used to analyze data.

Results: 52 patients discharged home on portable ventilators on either A/C or SIMV modes, vent settings adjusted to pre-discharge ABGs. Mean age was 49 years (range 10-98 years). Ventilatory failure related to cervical spine trauma (36%), neurological disease (27%), critical illness neuropathy (18%) and respiratory failure (18%). One year survival rate was 72% (38 patients). 50% (26 patients) were successfully weaned, mean duration of ventilation 9.45 months (95%CI 3.24, 15.67). 36% (19 patients) weaned off all ventilatory support and 13% (7 patients) required nocturnal support. Successful weaning associated with family member as the primary care giver compared to private nurse alone; RR 2.8 (95% CI 0.5, 16.6). Survivors scored a mean score of 48.2 ± 27.3 on the EQ-Visual Analogue Scale. Mean scores on EQ-5D were; Mobility 2 ± 0.82 , Self-care 2 ± 0.82 , Usual activities 1.86 ± 0.69 , Pain 1.43 ± 0.79 , Depression 1.29 ± 0.76 . **Conclusion:** In selected patients, home ventilation is a viable option with expectation of successful weaning. Patients on home ventilation report reasonable quality of life with problems related to independence compared to overall well being.

Keywords: Critical illness, chronic respiratory failure, home ventilation

3.43**'CLOT IN TRANSIT' MIMICKING A RIGHT ATRIAL MASS:
A CASE PRESENTATION***Hira Shahzad, Ali Bin Sarwar Zubairi**Department of Medicine, Aga Khan University, Karachi*

Objective: Introduction: Presentation of a cardiac mass is a rare finding with an incidence of 0.001% to 0.28% reported in autopsy reports. Differentials of such cardiac masses are commonly thrombi, primary cardiac tumors (most commonly atrial myxomas), metastatic tumors and infective emboli. Acute thromboembolytic disease has been increasingly associated with cardiac thrombi with an estimated incidence of 7-11%. Due to the high risk of potential pulmonary and systemic embolization, they require prompt therapeutic intervention. Case History: Ours is the case of a 50-year-old female with no co-morbidities who presented with a two-week history of exertional dyspnea and syncope. An electrocardiogram revealed peaked p waves representative of cor pulmonale, and a transthoracic echocardiogram showed moderately dilated right atrium (RA) and ventricle (RV), severe tricuspid regurgitation, severely reduced RV function, normal left ventricular systolic function (ejection fraction = 55%), pulmonary artery hypertension (PAH) of 90mmHg and a large, mobile multi-lobulated mass in RA protruding into RV (Panel A). Spiral Computed Tomogram (CT) of the chest revealed a saddle embolus from main right and left PA with distal extension (Panel B). RA mass was not evident on CT. A diagnosis of massive pulmonary embolism with an atrial mass was made. Cardiothoracic Surgery consult deferred surgical removal due to high mortality risk. Patient underwent thrombolytic therapy with tissue-plasminogen-activator (tPA) and anticoagulation with subcutaneous enoxaparin followed by warfarin. Transesophageal echocardiogram on third day of therapy depicted complete resolution of RA mass suggestive of a 'clot in transit' (Panel C). Work-up for hypercoagulable state was negative. Doppler Ultrasound demonstrated partial thrombosis of distal right superficial femoral vein. The patient has been doing well since discharge eight months ago on oral anticoagulation.

Conclusion: Conclusion: The distinction between an original atrial mass and a thrombus is not always easy. However, it is crucial since treatment is based on diagnosis. The distinction between an original atrial mass and a thrombus is not always easy. However, it is crucial since treatment is based on diagnosis.

Keywords: right atrial mass, saddle embolus, pulmonary embolism

3.45**EVALUATING THE USE OF SILDENAFIL IN THE
MANAGEMENT OF PPHN IN A TERTIARY CARE
TEACHING HOSPITAL OF PAKISTAN***Muhammad Hammad, Syed Rehan Ali, Maqbool Qadir**Department of Pharmacy Services and Paediatrics and Child Health, Aga Khan University, Karachi*

Objective: Persistent pulmonary hypertension of the newborn (PPHN) is an important cause of morbidity and mortality in neonatal intensive care. The incidence reported vary between 0.43 - 6.8 of 1000 live births. Therapeutic options such as high-frequency ventilation (HFV), surfactant, and inhaled nitric oxide are prevalent to manage the patients conservatively and have varying degree of success rates. Despite the emergence of certain treatment options, some studies reported the mortality remains at 10 – 20 % in newborns with PPHN and about 30% of cases failing to respond. The inhaled nitrous oxide therapy is not available in Pakistan leaving a limited range of therapeutic options to be employed. From last two decades, attempts have been made to discover an effective and selective pulmonary vasodilator with little or no systemic adverse effects for the treatment of PPHN. Oral sildenafil, primarily approved for erectile dysfunction and a potential such therapy, has not been systematically evaluated in newborns with PPHN. Sildenafil citrate is an inhibitor of cGMP specific phosphodiesterase type-5 (PDE5) in smooth muscle, where PDE5 is responsible for degradation of cGMP. Sildenafil citrate increases cGMP within vascular smooth muscle cells resulting in relaxation and vasodilation. In patients with pulmonary hypertension, this leads to vasodilation of the pulmonary vascular bed and, to a lesser degree, vasodilation in the systemic circulation. Based on some available evidences for the safety and efficacy of sildenafil, it was employed in the management of PPHN at AKUH. **Method:** Sildenafil is becoming a potential therapeutic agent in the management of PPHN. In this study, we retrospectively evaluated the use of sildenafil in the NICU of Aga Khan University Hospital Karachi. The drug utilization data of previous 8 months was collected to evaluate the use according to the following variables; - Mean Dose/Frequency Used - Mean Duration of Therapy - Use of Concomitant Inotropic Support - All-cause Mortality

Results: Overall, sildenafil was used in 26 babies in the management of PPHN over the period of last 8 months. The mean dose was 1.45 mg/kg/dose every 6 – 8 hours (SD: 0.57). Mean duration of therapy was 8.16 days (SD: 4.77) and all cause mortality was 5 (out of 26 babies). 65% babies received the concomitant support of one or more inotrope.

Conclusion: The drug seems to have promising results in the management of PPHN. This warrants a more extensive study on the use of the drug in neonates particularly focusing on the safety profile.

Keywords: PPHN and use of Sildenafil

3.46

EXCELLENCE IN CARDIAC SURGERY: A PAKISTANI PERSPECTIVE

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Objective: It is essential to monitor outcomes in complex procedures like coronary artery bypass graft operations (CABGs) to ensure that improvements are constantly being made and that patient care is optimised. Comparison with a large, internationally recognised database will demonstrate how local practice matches up with worldwide standards.

Method: From January 2006 to December 2010, information of the 2,198 CABGs performed at Aga Khan University Hospital (AKU) was collected prospectively. This included patient characteristics and specific intra- and post-operative outcomes and compared with findings from the American Society of Thoracic Surgeons' National Cardiac Database (STS-NCD).

Results: There were more male patients in the AKU cohort and more diabetics. In AKU, more cases involved three or more grafts (85% vs. 78%) and in both groups, an internal mammary artery graft was used over 90% of the time. The overall 30-day mortality was 2.7% at AKU, compared to 1.5% in the STS-NCD data. AKU had a lower incidence of permanent stroke (0.5% vs. 1.2%), prolonged ventilation (10.5% vs. 11.0%), deep sternal wound infection (0.2% vs. 0.4%) and reoperation (4.0% vs. 4.7%). It had more cases of renal failure (5.4% vs. 3.6%). Readmission rates within 30 days were also less in AKU (3.9% vs. 9.1%).

Conclusion: The outcomes at AKU compare very favourably with the American STS data. This demonstrates that world class care can be achieved in Pakistan and should encourage other similar centres in developing countries to strive for excellence. We suggest the establishment of a Pakistani database for cardiac surgery, to help advance national standards.

Keywords: cardiac surgery, database, Pakistan

4.1 PERCEPTION OF SMILE ATTRACTIVENESS IN YOUNG ADULTS-A PILOT STUDY

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Objective: To assess the perception of dental, art and business students on the importance of smile attractiveness. To assess the understanding on effect of skin tone on tooth shade value as perceived by the 3 groups.

Method: Cross sectional, analytical study conducted in Art, Business and Dental Schools. 90 students (3 groups of 30 each) were selected by non probability, purposive sampling. 24 pictures were run in front of the participants as power point presentations. The pictures were of two individual smiles, a male and a female, with changes made to colour of teeth and skin, in Adobe Photoshop. The participants were asked to grade each picture on a rating scale. SPSS 17.0 was used for data analysis. Frequency distribution of all variables was determined. Association of smile attractiveness with gender and profession was determined using chi-square test. Mean ranks and score (of the 24 pictures) of smile attractiveness as perceived by the 3 groups were compared using Kruskal-Wallis test. Level of significance was set at 0.05.

Results: The sample size consisted of 34.1% males and 64.8% females. For the dental group smile attractiveness was very important as opposed to the business and art students. For females, smile attractiveness was more important than their male counterparts. Fair skin with moderately bright teeth rated as the most attractive smile.

Conclusion: There is a difference in perception of smile attractiveness between males and females. Art, business and dental students also have different perceptions of smile attractiveness with respect to skin tones and tooth shade values.

Keywords: smile , attractiveness, skin tone

4.2 COMPARISON BETWEEN ORTHODONTIST'S AND PATIENTS PERCEPTION USING INDEX OF ORTHODONTIC TREATMENT NEED- A PILOT STUDY

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Objective: • To assess the correlation of the pretreatment aesthetic scores between the orthodontist and the patient using IOTN-AC
• To determine the correlation of IOTN-AC of the orthodontist and patient with IOTN- DHC

Method: • Study design: Cross Sectional Analytical • Settings: Dental clinic, AKUH • Study duration: May –August 2011 • Sample size: 55 • Sampling technique: Non probability purposive • Data collection procedure: Patients presenting to the clinic were shown pretreatment monochrome intraoral frontal photographs and asked to score themselves against the IOTN –AC chart. The orthodontist also repeats the same procedure. IOTN- DHC is then assessed on dental models and the highest reading obtained is recorded. • Inclusion Criteria: o Patients of Pakistani origin o Age 16-25 years o Patients presenting in the

AKUH Dental Clinic for treatment o Informed consent • Exclusion Criteria: o Presence of craniofacial anomalies, syndromes ,facial asymmetries and neurological disturbances o Patients presenting for continuation of orthodontic treatment • Data Analysis: o SPSS for windows Version 19.0 o Spearman's correlation- to assess the relationship between the orthodontist and patient IOTN- AC and IOTN- DHC. o Chi square- to assess the difference between the orthodontist and patient IOTN-AC and IOTN-DHC o Kappa- Cohen's- to assess the level of agreement between the orthodontist and patient IOTN-AC and IOTN-DHC o Intra examiner reliability was assessed using Spearman's correlation o p- value <0.05 was considered significant

Results: • There is a statistically significant correlation of low magnitude of pretreatment aesthetic scores between the orthodontist and the patient ($r = 0.388$) • There is a statistically significant correlation of acceptable magnitude between the orthodontist perceived and pretreatment –DHC scores ($r = 0.561$)

Conclusion: • There is a poor correlation of pretreatment aesthetic scores between the orthodontist and the patient • There is an acceptable correlation between the orthodontist perceived and pretreatment –DHC scores

Keywords: perception, aesthetics

4.3 NICKEL TITANIUM ROTARY INSTRUMENT FRACTURE DURING ROOT CANAL PREPARATION: A COMPARISON BETWEEN CONVENTIONAL AND HYBRID TECHNIQUES OF ROOT CANAL PREPARATION (AN IN VITRO STUDY).

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Objective: Nickel Titanium instruments has revolutionized the world of endodontics but unexpected instrument fracture is one the biggest complication associated with them. The objectives of this study are: - To compare the frequency of Protaper Nickel-Titanium Rotary instruments fracture between conventional (Pure rotary) and hybrid (Rotary and hand files) canal preparation techniques in extracted human molar teeth (first and second).
• To compare the mean time required for canal preparation in both techniques

Method: An ex vivo randomized controlled trial was conducted in dental clinics of AKHU from June to August 2011 on 72 extracted human maxillary and mandibular first and second molars (216 canals). Teeth were randomly divided into two groups on the basis of preparation technique. Group A (Conventional technique) and Group B (Hybrid technique). SPSS 19.0 was used for data analysis. Chi square test/Fisher Exact test was used to find out an association between instrument fracture frequency and technique of preparation. Independent t- test was used to measure mean time required for preparation. P value = 0.005 was taken as significant.

Results: Of the 72 (216 canals) teeth divided into two groups (Group A and Group B), each group received 10 maxillary and 26 mandibular molars. A total of 7 instruments fractured. All instruments were fractured in group A (Protaper conventional technique) (P-value=0.014). The mean time taken for preparation

of the root canals was 104.04 sec (\pm 55.7sec) in Group A versus 122.88 sec (\pm 41.67sec) in the Group B ($p=0.007$).
Conclusion: Hybrid technique, although more time consuming, is safer than conventional technique of root canal preparation in terms of instrument fracture.

Keywords: Instrument fracture, Conventional technique, Hybrid technique

4.4

COMPARISON OF NASAL PROFILE IN SKELETAL CLASS I AND II PATIENTS

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Objective: • To compare the nasal profile between skeletal class I and class II malocclusion. • To find out the gender dimorphism, if any, in the nasal profile.

Method: • Study Design: Cross Sectional Comparative study • Setting: Orthodontic Clinic, AKUH • Duration of Study: August 2010- September 2010 • Sample Size: 60 subjects divided into 2 groups o Skeletal Class I- 31 subjects o Skeletal Class II- 29 subjects • Sampling Technique: Non probability, purposive • Data Collection Procedure: All measurements were done on lateral cephalograms. Vertical and horizontal dimensions of nasal hard and soft tissues were taken. For rest of the facial skeleton, only horizontal dimensions of skeletal hard tissues were taken. • Inclusion Criteria: Patients of Pakistani origin Age 18-40 years at start of treatment Presenting in AKUH Dental Clinic for treatment • Exclusion Criteria: Patients with craniofacial anomalies, syndromes or facial asymmetries Patients presenting for continuation of orthodontic treatment Data Analysis: SPSS version 17.0 Independent sample t- test p- value of < 0.05 was considered significant.

Results: Statistically significant differences were found between Skeletal Class I and II for nasolabial angle, nasomental angle and soft tissue facial convexity. Furthermore, statistically significant differences were also obtained between males and females for nasal length, nasal depth, columella convexity and nasal bone length

Conclusion: Skeletal Class I and II subjects have different nasal profiles. Moreover, nasal profiles are significantly different between males and females. It is recommended that further research be done to establish norms in our population for nasal profile and its relationship with underlying skeletal patterns.

Keywords: nasal profile, sagittal skeletal pattern, gender dimorphism

4.5

CORRELATION OF HEAD POSTURE AND DENTAL MALOCCLUSIONS

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Objective: It has been demonstrated earlier that the craniocervical posture is related to skeletal development of the face. In view

of this relationship, the association between head posture and the occurrence of malocclusion is of particular interest. Hence, the aim of this study was to compare head posture in different malocclusions as well as to determine its correlation with different malocclusal traits.

Method: Head posture was assessed using craniocervical, craniocervical and cervicovertebral postural variables recorded from lateral cephalometric radiographs of 63 subjects, taken in the natural head position (mirror position). Malocclusions were categorized clinically into Angle's dental malocclusions class I, II and III whereas malocclusal traits including overjet, overbite and crossbites were also recorded. One way anova was used for the comparison of head posture in different malocclusions. Spearman's correlation was used to assess the correlation of head posture and different malocclusions and malocclusal traits. Statistical significance level was set at $p=0.05$.
Results: Statistically significant differences were observed between the different dental malocclusions for all the craniocervical angles ($p<0.05$) and the craniocervical angle NL/VER ($p=0.032$) as well as for the cervical curvature angle OPT/CVT ($p=0.025$). A weak correlation of craniocervical angle NL/VER ($r=0.257$, $p=0.046$) and cervical curvature angle OPT/CVT ($r=0.305$, $p=0.016$) with Angle's dental malocclusion and anterior crossbite ($r=0.249$, $p=0.050$) was observed. A weak correlation was also observed for the craniocervical angles and cervicohorizontal angles ($r<0.40$, $p<0.05$) with overjet as well as between craniocervical angles and overbite ($r<0.40$, $p<0.05$).
Conclusion: A weak correlation exists between head posture and Angle's dental malocclusion.

Keywords: head posture, dental malocclusions, correlation

4.6

THE EFFECT OF DIFFERENT SHADES, VOLTAGES AND INCREMENT THICKNESS ON THE CURING DEPTH OF ESTHET X HD COMPOSITE.

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Objective: 1.To determine the effect of variable voltage and increasing thickness of material with different shades on depth of cure of Esthet-X HD composite. 2.To evaluate the minimum depth of cure of Esthet-X HD composite by using the ISO scraping method.

Method: A total of 14 shades of Esthet X HD material were tested for depth of cure. The variables were Voltages (180V & 220V), Material thickness (2, 4 & 6mm) & Shades ($n=14$). All the samples were tested using the ISO scraping method. In this technique, 50% of the cured length is taken as the value after scraping away uncured portion. Each sample reading is taken three times to determine the mean as the final value. Other factors such as light intensity, curing time, distance of light guide were kept constant during the data collection.
Results: 1. There was a significant difference between the mean curing depths of composite sample at 180 volts to 220volts. p -value <0.002 2. At thickness of 2mm, all samples fully cured but when thickness was increased to 4mm, the curing depth became 1.86mm, while at 6mm, it was 1.96mm. p -value <0.001 3. Lighter shades exhibited deeper DOC than the reference (A1).

Whereas, darker shades showed shallower depth of cure. p-value <0.001

Conclusion: 1.The voltage, material thickness and different shades contribute significantly to the Esthet-X HD material's Depth of Cure. 2.At optimal voltage of 220V, thirteen of the fourteen (92.85%) shades met the ISO standard but when it was reduced to 180V, only eight out of fourteen (57.14%) shades passed the ISO standard.

Keywords: Esthetx, voltage.

4.7

NASOLABIAL ANGLE: A PERCEPTION OF TREATMENT NEEDS

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Objective: Nasolabial angle holds a very important position in the treatment planning process for an orthodontic case, especially in today's soft tissue paradigm. This study was therefore conducted to compare the mean preference scores for orthodontic treatment need, considering the nasolabial angle, amongst orthodontists, orthodontic patients and their parents.
Method: Male and female profile silhouettes were prepared by changing the nasolabial angle using Adobe Photoshop 7. One silhouette was prepared with a nasolabial angle of 100 degrees, chin position of 0mm and lip position of -3mm upper lip and -2mm lower lip incorporating the normal values. Four other silhouettes were prepared by changing the nasolabial angle on the above silhouette to 80, 90, 110 and 120 degrees using Adobe Photoshop 7. Rating of these male and female profile silhouettes was done by the three groups of raters (orthodontists, orthodontic patients and their parents – 36 in each group) on a scale of five with 1 being most attractive and 5 being least attractive. Two Factors analysis of variance (ANOVA) with equal replications was used to determine specific preferences for treatment need in the three individual groups of evaluators. P-value = 0.05 was considered to be significant.

Results: There were no statistically significant differences seen amongst orthodontists, orthodontic patients and their parents for treatment need perception for both the male and female profile silhouettes.

Conclusion: There were no statistically significant differences for need of treatment perception regarding nasolabial angle amongst orthodontists, orthodontic patients and their parents. This reflects that all three groups were at the same wavelength considering the eye for esthetic treatment needs for the nasolabial angle, and thus make it easier for an orthodontist to explain and carry out the orthodontic treatment plan keeping in mind the soft tissue paradigm.

Keywords: Nasolabial angle, Perception, Treatment Need

4.8

COMPARISON OF POSTOPERATIVE SENSITIVITY IN CONVENTIONAL VERSUS BONDED AMALGAM RESTORATIONS

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Objective: To evaluate the level of Post operative sensitivity with the use of bonded amalgam and conventional amalgam in class I & II cavity preparations

Method: • Study design: A Clinical trial conducted at the Dental clinics of the Aga Khan University, Karachi • Inclusion criteria: All posterior teeth with class I or II cavities requiring amalgam restorations while non restorable, pulpally involved teeth, presence of pre-operative sensitivity or teeth with excessive cavity width were excluded. • Sampling technique: Non-probability purposive sampling was employed. • Sample size: It was calculated with WHO software and turned out to be 60 in each group. • Study is approved from AKU- ERC Data Collection: Group A teeth were treated with conventional amalgam restoration while Group B teeth were restored with bonded amalgam Rely-x ARC. The outcome (post operative sensitivity) was measured by giving cold stimulus with use of compressed air and Endo ice applied on tooth for 10 seconds. The response were recorded by a visual analogue scale pain as No pain (0) mild pain (4-7) and severe (8-10). These findings were recorded on a proforma. Data Analysis: SPSS version 14-0 was used. Descriptive statistics were obtained. Chi square test was applied to see the difference in proportion of post operative sensitivity in the 2 groups. Level of significance was taken at 0.05.

Results: Both genders were evenly distributed (61 male & 59 females) Out of 120 teeth, 83 were class I and 37 were Class II preparations. At base line both genders and both cavity types were represented in the 2 study groups (conventional and bonded amalgam). There was no statistically significant difference in the level of post operative sensitivity in the 2 groups (p-value 0.357). However, the class II cavities were found to be associated with development of post operative sensitivity (p-value < 0.001).

Conclusion: There was no difference in the level of post operative sensitivity in the conventional and the bonded amalgam restorations in the Class I and Class II cavities

Keywords: Bonded , Conventional, Amalgam

4.9

ASSESSMENT OF FLUCTUATING ASYMMETRY IN PERMANENT DENTITION

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Objective: To assess fluctuating asymmetry in maxillary and mandibular arch in: Faciolingual dimension Mesiodistal dimension

Method: All measurements were done on study casts using digital vernier caliper. Faciolingual and mesiodistal dimensions were measured for maxillary and mandibular central incisors, canines

and first molars. Paired sample t -test was used to assess fluctuating asymmetry

Results: Statistically significant fluctuating asymmetry is observed between right and left sides in the mesiodistal widths of maxillary canines and faciolingual widths of maxillary first molars in our study sample

Conclusion: There is a difference in presence of asymmetry in different populations. It is suggested that assessment of asymmetry should be done for every patient before initiation of orthodontic treatment for its input in treatment planning

Keywords: fluctuating asymmetry, permanent dentition, tooth dimensions

4.10

AN IN-VITRO COMPARISON OF MARGINAL ACCURACY OF TEMPORARY CROWNS MADE USING TWO AUTO-POLYMERIZING MATERIALS.

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Objective: To compare the marginal accuracy of temporary crowns in-vitro, using two interim auto-polymerizing materials in a poly-siloxane impression.

Method: 'Tempron' and 'Integrity' were used to make 15 temporary crowns each, in sectional poly vinyl-siloxane impressions of the left quadrant of a mandibular typodont arch. The crowns were made on a prepared mandibular first molar. The margins of the prepared tooth and crowns were marked. After fitting each crown on the prepared tooth, the tooth-crown assembly was observed under microscope (4 x magnification). Images of the buccal, lingual, mesial and distal surfaces were digitally captured. The distance between the margins was measured in millimeters using computer software, at four reference points. The values obtained were compared to determine the marginal accuracy of the crowns made using the two materials. Independent samples t-test was applied to determine the difference between the two groups. All procedures and measurements were performed by a single operator.

Results: There were 15 crowns in both groups, making a total of 30 crowns with 120 observations. The mean gap with Integrity was found to be 0.2mm and that with Tempron was found to be 0.3mm ($p < 0.01$).

Conclusion: Within the limitation of our study, we found that temporary crowns made with Integrity showed better marginal accuracy than crowns made with Tempron but the difference was not clinically significant.

Keywords: marginal accuracy, temporary crowns, auto-polymerizing materials

4.11

DENTOALVEOLAR HEIGHTS IN VARIOUS VERTICAL AND SAGITTAL FACIAL PATTERNS

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Objective: Dentoalveolar heights are established when the maxillary and mandibular teeth erupt in the oral cavity and occlude with each other. Thereafter, the contact between the maxillary and mandibular teeth is maintained despite of underlying skeletal changes. One important feature of the dentoalveolar segment is its ability to adapt to the underlying skeletal dysplasia. As a result of which the teeth move to abnormal position in the dental arches in an attempt to achieve necessary compensations. In this study we have evaluated dentoalveolar heights in three vertical (Normodivergent, Hypodivergent and Hyperdivergent) and three sagittal (Class I, Class II and Class III) facial patterns, in order to find the degree of dentoalveolar compensations.

Objectives: To determine mean dentoalveolar heights in different vertical and sagittal facial patterns To compare the mean dentoalveolar heights among different vertical and sagittal facial patterns

Method: It was a cross sectional study carried out at orthodontics clinic, AKUH from September to November 2010. A total sample of 258 subjects aged 12-30 years having fully erupted first permanent molars and central incisors were included in the study from orthodontic record. The pretreatment cephalographs of subjects were traced manually over an illuminator. The various parameters like angle ANB, angle SN-MP and dentoalveolar heights were measured and recorded on data collection form. The data was analyzed using SPSS for windows (version 17, Chicago Inc ;). Means and standard deviations for the variables were generated. ANOVA was used to compare the means of dentoalveolar heights in the three vertical and three sagittal face types. Post Hoc Bonferroni test was applied to show difference among the groups. Intra and Inter examiners reliability was measured using Pearson's correlation. P value equal to or less than 0.05 was taken as statistically significant.

Results: The total sample of 258 subjects comprised of 38.76% males and 61.24% females. The total mean age of subjects in vertical group was 15.8 ± 4.3 years and that of subjects in sagittal group was 16.3 ± 3.5 years. The results of ANOVA showed statistically significant difference (p value = 0.008) for upper anterior dentoalveolar height (UADH) in the vertical group. Post Hoc Bonferroni test showed statistically significant difference for UADH between hyperdivergent and normodivergent (p value = 0.039) and hyperdivergent and hypodivergent (p value = 0.011) facial patterns. Pearson's correlation showed strong correlation for intra and inter examiner reliability. The sagittal groups showed no statistically significant difference for dentoalveolar heights.

Conclusion: The mean values of the dentoalveolar heights were determined for the vertical and sagittal facial patterns. The UADH were greater and statistically significant in the hyperdivergent group as compared to both the normodivergent and hypodivergent groups. The sagittal groups showed no statistically significant difference for dentoalveolar heights.

Keywords: dentoalveolar, vertical, sagittal

4.12**EFFECTS OF INCISOR INCLINATION CHANGES ON POINT A AND B IN ORTHODONTIC PATIENTS**

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Objective: Introduction: Point A and point B are the cephalometric skeletal landmarks located on the maxilla and mandible respectively. These landmarks are used to analyze the sagittal relationship of jaws. If the positions of point A and B are affected by alveolar bone remodeling associated with orthodontic tooth movement of upper and lower incisors then it should be considered in the diagnosis of antero-posterior skeletal relationship. In this study, we have evaluated the magnitude of change in positions of point A and B due to change in inclinations of upper and lower incisors. This will help us to formulate the proper diagnosis and to evaluate the true efficacy of orthodontic appliances on skeletal bases. *Objective:* To evaluate the change in cephalometric positions of point A and B in sagittal and vertical dimension due to change in incisal inclinations caused by orthodontic treatment.

Method: It was a cross-sectional study conducted at the Aga Khan University Hospital Karachi from July to September 2011. A total sample size of 31 subjects was taken. The inclusion criteria for the subjects to be recruited in the study were extraction in upper and lower arches, completion of growth and orthodontic treatment. Pre and post treatment lateral cephalograms were traced over an illuminator manually. By superimposition of these pre and post treatment tracings, various linear (changes in positions of point A and B in sagittal and vertical direction) and angular (angles ANB, UI-Max, IMPA etc) parameters were measured and recorded on data collection form. The data was analyzed by using SPSS for windows (version 19.0 Chicago Inc ;). Multiple linear regression analysis was used to assess the relationship between outcome and independent variables. P value equal to or less than 0.05 was taken as statistically significant.

Results: The total sample of 31 subjects comprised of 9.68% males and 90.32% females. The regression analysis showed marginally significant results for the change in position of point B in sagittal and vertical direction. According to analysis, if we increase incisor mandibular plane angle by 1o, point B will move horizontally by .225mm in posterior direction and .210mm in vertical direction. While change in position of point A showed insignificant results in horizontal and vertical direction due to change in upper incisor inclinations.

Conclusion: Lower incisor inclination is negatively related to the position of point B. Upper incisor inclination is not significantly related to change in position of point A.

Keywords: Incisor Inclination, Point A and B, Orthodontic Patients

4.13**CROWDING AND SPACING IN RELATION TO TOOTH DIMENSION AND ARCH PERIMETER**

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Objective: An ideal occlusion and alignment of teeth is a result of harmony between tooth dimensions and arch length. Any disproportion between these elements predisposes to crowding and spacing in the dental arch, which are the most common forms of malocclusion. Therefore, the objective of this study is to compare the mesiodistal (MD) dimensions of all individual teeth, the arch length, intercanine (IC) width, interpremolar (IP) width, intermolar width (IM) and arch depth between normal, crowded and spaced dentitions.

Method: A sample of 90 dental casts was collected and space analysis was performed by subtracting the sum of MD dimension of all teeth (except the permanent molars) from the arch length. The sample was divided into three groups namely normal, crowded and spaced arches on the basis of tooth size-arch length discrepancy. ANOVA and Bonferroni post-hoc were performed for the comparison between groups. A level of significance ($p = 0.05$) was used for the statistical tests.

Results: The MD dimensions of all individual teeth in crowded arches were greater than the corresponding teeth in normal arches. However, the difference was significant only for upper canines and first molars, lower central incisors and lower right lateral incisor ($p < 0.05$). The MD dimensions of all individual teeth in spaced arches were smaller than the corresponding teeth in normal arches. However, the difference was significant only for upper central and lateral incisors, lower canines and premolars ($p < 0.05$). A statistically significant difference was found in the arch lengths between the three groups ($p < 0.05$) and interpremolar widths, intermolar widths and arch depths of crowded and spaced arches.

Conclusion: Normal arches differ from crowded and spaced arches in tooth dimensions and arch perimeters.

Keywords: Crowding, Spacing, Tooth dimension

5.1

EFFECT OF ITOPRIDE ON GASTRIC FUNCTIONS IN PATIENTS WITH FUNCTIONAL DYSPESIA: A DOUBLE BLIND PLACEBO CONTROLLED STUDY- NCT # 01226134

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Objective: Functional dyspepsia is a common upper gastrointestinal functional disorder with significant impact on social and health care cost. Itopride is a benzamide derivative that appeared to stimulate endogenous acetylcholine release by antagonizing dopamine-2 receptors. Little is known about the effects of Itopride on gastric function in patients with functional dyspepsia. Aim: To evaluate the effects of itopride on gastric function in patients with functional dyspepsia.

Method: Adult males or non-pregnant females patients who were diagnosed as functional dyspepsia after normal laboratory tests, upper abdomen ultrasound and gastroscopy were enrolled. Patients were randomized either in active treatment group (Itopride; 50mg three /day) or placebo treatment group. Gastric functions (gastric accommodation by Single photon emission computer tomography, drinking capacity by satiety drinking test, and solid meal gastric emptying by 13-C octanoic acid breath test) and dyspepsia symptoms were assessed before randomization and four weeks after treatment. Liver function, serum prolactin level and QTc were checked before and 4 weeks after intervention.

Results: A total of 27, male 17(63%) were finally evaluated (37 enrolled, four excluded, five withdrawn and one lost to follow-up). Mean age of the cohort was 32.6+8 (range; 18-50) years. In the active treatment group no significant change in gastric volume, drinking capacity and gastric emptying was noted after four weeks of treatment. However mean dyspepsia symptom score improved from 21.5+5 vs.14.7+4 ($p<0.001$). Likewise in the placebo treatment group no significant change in pre and post intervention was observed in gastric volumes, drinking capacity and gastric emptying time. Similar to active group, placebo treatment group also showed an improvement in dyspepsia symptom score from mean 19.5+4 vs. 14+3.4 ($p<0.001$). Comparison between active and placebo treatment groups demonstrated no significant change in the gastric functions. Moreover dyspepsia symptoms improvement between the groups after 4 weeks of treatment was also similar. No significant differences were noted in liver enzymes, serum prolactin levels and QTc interval on ECG in both the groups after treatment.

Conclusion: This study did not demonstrate any significant effect of itopride on gastric accommodation, satiety drinking test volumes and gastric emptying time in patients with functional dyspepsia when compared with placebo.

Keywords: functional dyspepsia, gastric volumes, satiety drinking test

5.2

LEVETIRACETAM VS PHENYTOIN FOR POST NEUROSURGICAL SEIZURE PROPHYLAXIS –A META-ANALYSIS.

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Objective: Current therapy for seizure prophylaxis in Neurosurgical patients by Phenytoin (PHY) is being replaced by a new drug Levetiracetam (LEV). We aimed to compare the Efficacies of these two drugs

Method: We conducted a meta-analysis of published literature. An electronic search was performed using Pubmed, Embase and CENTRAL. All studies comparing PHY to LEV in patients with brain injury were selected. We included both observational and randomized controlled trials (RCTs). Data from eligible studies was extracted on to a standardized abstraction sheet. The occurrence of early seizures and side effects were analyzed. We used a random effects model and DerSimonian and Laird pooled odds ratios were subsequently calculated.

Results: We reviewed 2,489 unique abstracts and selected 8 studies (2 RCTs and 6 observational studies). Five studies compared the effect of LEV and PHY on early seizures. A random effects model demonstrated no superiority of either drug with the pooled odds ratio to be 1.31 (95% CI =0.41, 4.21). Two studies compared the occurrence of side effects amongst the two drugs. Our pooled estimate demonstrated patients using PHY to be 8.7 times (95%CI 2.31, 32.99) more likely to have an adverse drug effect as compared to patients on LEV. We did not find any heterogeneity amongst the studies, the I-squared value was <50% in both cases.

Conclusion: Our analysis suggests no superiority of LEV over PHY at decreasing post operative seizures. However patients on LEV suffer fewer side effects. A large RCT is required to provide conclusive evidence.

Keywords: Levetiracetam, Phenytoin, Prophylaxis

5.5

PERIOPERATIVE MANAGEMENT OF PULMONARY HYPERTENSION USING PGE1 AND VASOPRESSIN

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Objective: Managing Peri-operative Pulmonary Hypertension in congenital heart disease patients

Method: literature review of the previous work done regarding pharmacological and other methods used to control pulmonary hypertension.

Results: Pulmonary hypertension is defined as the Pulmonary artery pressure > 25 mmHg at rest and >30 mmHg during exercise. Conditions associated with pulmonary hypertension are not uncommon in congenital heart diseases. These conditions if not corrected in early life lead to secondary changes in pulmonary vasculature and with advancing age may become irreversible and threat to life. Surgical correction in early life period has been shown favorable outcome. The incidence of congenital heart disease in Pakistan ranges between 3 – 5 per 1000 births. Pulmonary hypertension is a predictor of perioperative morbidity therefore these patients are at increased risk of perioperative morbidity and mortality during anaesthesia and surgery and require special measures to control perioperative and postoperative pulmonary hypertension including inhaled Nitric oxide, phosphodiesterase inhibitors (PDE-5), JET – ventilation etc. The Aga Khan University hospital has started its congenital heart surgery program since 2006 and is dealing with complicated corrective congenital heart surgeries. Although limited in resources as compared to advanced, countries this program is running successfully with satisfactory results. We successfully managed 5 cases of congenital heart disease with severe pulmonary hypertension without inhaled Nitric oxide and JET ventilation using prostaglandin infusion along with vasopressin. These cases included CAVSD, VSD, TAPVD and MS. We exploited the pulmonary vasodilator effect of PGE1 and explored the paradoxical pulmonary vasodilator and systemic vasoconstrictor effect of Vasopressin in prevention of systemic hypotension for peri and immediate postoperative control of pulmonary hypertension. Sildenafil was used to control the pulmonary hypertension in the later post operative period.
Conclusion: Perioperative pulmonary hypertension can be managed by pharmacological means if exploited carefully using PGE1 and Vasopressin when Inhaled Nitric Oxide is not available.

Keywords: Pulmonary Hypertension , PGE1 , Vasopressin

6.1

CABERGOLINE THERAPY FOR MACROPROLACTINOMA DURING PREGNANCY

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Objective: We are reporting this case in order to contribute to the relatively meager data available to advocate the safety of cabergoline therapy in pregnant hyperprolactinemic patients
Method: We report the case of a 31 year old lady who presented to us with uncontrolled hyperprolactinemia. A pituitary Macroadenoma was demonstrated by MRI. Due to intolerance to Bromocriptine, Cabergoline was started. The patient improved and subsequently conceived. MRI in the second trimester demonstrated further reduction in the tumor size. It was decided to continue CAB throughout pregnancy to ensure further reduction in tumor size until delivery and to hold CAB during postpartum period to allow for an adequate interval of breastfeeding.
Results: At 37 weeks of gestation, the patient delivered a healthy baby. her cabergoline was withheld after delivery to allow for breast feeding. At one year post partum the patient and her baby are doing fine.

Conclusion: CAB can be used safely and effectively if required to treat macroprolactinoma during pregnancy. However it is important to discuss with the parents about the limited data available on the use of CAB during pregnancy and associated potential adverse effects on the fetus.

Keywords: Macroprolactinoma, Cabergoline, Pregnancy

6.2

A TRANSLATION RANDOMIZED TRIAL OF CULTURALLY SPECIFIC LIFESTYLE INTERVENTION FOR DIABETES PREVENTION IN PAKISTAN

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Objective: Diabetes is one of the most common chronic, non-communicable global diseases. Pakistan ranks 6th among high burden countries. The aim of study is to implement diabetes prevention program through community based lifestyle intervention (improved diet, increase physical activity and weight loss) into real life settings for two years.

Method: Would screen 5000 individuals, age 30-64 years, from each selected communities for high risk of diabetes through diabetes risk score questionnaire including age, abdominal adiposity, family history of diabetes and physical activity. In second phase, high risk subjects (N=1480) would be tested for oral glucose tolerance test (OGTT). Pre-diabetic individuals would be selected (N=580) and would be randomized into for either control or intervention arm. Intervention group would receive dietary and physical activity advice frequently for two years and control group would receive standard advice only at

the start of study. After two year of intervention OGTT would be repeated to see an impact on diabetes prevention.

Results: Study grant has been taken from the International Diabetes federation (IDF). In addition, the protocol has been submitted for approval by Ethical Review Committee of Aga Khan University. Estimated 35 percent of pre diabetic individuals would be prevented from type 2 diabetes through lifestyle intervention.

Conclusion: This study will provide evidence for larger scale lifestyle intervention to prevent type 2 diabetes. Also this study would used to make policy and public health recommendations, for diabetes prevention efforts.

Keywords: diabetes, lifestyle, intervention

6.3

PREVALENCE AND FACTORS ASSOCIATED WITH UNCONTROLLED GLYCEMIA LEVEL AMONG TYPE 2 DIABETIC PATIENTS IN KARACHI

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Objective: The total number of people with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030. It is projected that if the situation persists, by the year 2030 Pakistan will become 4th in burden of diabetes throughout world. The aim of this study was to estimate prevalence and factors associated with uncontrolled glycemia among type 2 diabetic patients in Karachi.

Method: This cross sectional study was conducted among all Type 2 diabetic patients visiting selected GPs of Karachi. Written informed consent was obtained from all the participants. Pre-testing was done on 5% of the sample size. Data was analyzed in SPSS version 19 and multivariate logistic regression was applied to identify the associated factors.

Results: Altogether 415 type 2 Diabetes patients were enrolled in the study. Prevalence of uncontrolled glycemic level among diabetics was 38%. Presence of > 2 co-morbid (OR: 2.32, 95% CI: 1.92-3.33), abnormal glucose in past 6 months (OR: 4.2, 95% CI: 3.42-5.58) were risk factors for uncontrolled diabetes. However, factors such as taking herbal supplements (OR: 0.27, 95%CI: 0.03-2.31), walking for at least 30 minutes thrice a week (OR: 0.25, 95% CI: 0.06-0.97) are protective for diabetes.
Conclusion: The results of this study found that some factors are potentially modifiable, thus interventions should be applied to reduce them. While, some identified risk factors are non-modifiable like, non-communicable diseases etc.; factors like these should be used to identify a high risk group for primary prevention that decreases the chances of uncontrolled glycemic levels in patients.

Keywords: Uncontrolled, type 2 diabetes, Glycemia

6.4 ASSOCIATION OF PASSIVE SMOKING WITH METABOLIC COMPONENTS AMONG PEOPLE WITH TYPE 2 DIABETES: RESULTS OF A MULTI-CENTER STUDY.

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Objective: : Diabetes mellitus is associated with poor metabolic outcomes and complications which lead to premature morbidities, mortalities and excessive cost utilization. The objective of this study was to assess the association of passive smoking with individual metabolic components among people with diabetes. **Method:** A multi-centered cross-sectional study was conducted among 773 adults with type-2diabetes in four out-patient clinics in Karachi, Pakistan. Means and standard deviations were calculated for descriptive presentation. Univariate and multivariable analysis was carried out to calculate crude and adjusted odds ratio respectively to assess statistical significance between passive smoking and metabolic outcomes among study participants.

Results: Mean values of metabolic components were higher among patients exposed to passive smoking compared to non-exposed patients: body mass index (28.70±5.32 vs. 26.83±4.80), fasting blood glucose (219.20±82.91 vs. 189.97±75.03), fasting triglycerides (225.48±88.58 vs. 192.53±76.47), systolic blood pressure (140.84±19.85 vs. 129.41±14.50) and diastolic blood pressure (86.62±11.44 vs. 81.74±10.73). In univariate analysis passive smoking was associated with all the metabolic components (p<0.001) while in multivariable analysis passive smoking was independently associated with triglycerides (AOR=1.005, 95% CI=1.003-1.007) and systolic blood pressure (AOR=1.041, 95% CI=1.030-1.007).

Conclusion: Passive smoking is associated with poor metabolic outcomes among diabetes patients. Diabetic-passive smokers need proper counseling and comprehensive care by the clinicians.

Keywords: Diabetes Mellitus, Metabolic Components, Passive Smoking

6.5 PREVALENCE, CLUSTERING AND ASSOCIATED SOCIO-DEMOGRAPHIC DETERMINANTS OF CARDIOVASCULAR DISEASE RELATED LIFESTYLE FACTORS AMONG PEOPLE WITH TYPE 2 DIABETES

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Objective: We evaluated the prevalence and clustering pattern of cardiovascular disease (CVD) related lifestyle factors and their association with CVD among patients with type 2 diabetes. We also examined the association of these factors with various socio-demographic characteristics.

Method: A total of 1000 patients with type 2 diabetes were interviewed in a cross-sectional, multi-center study in out-patient clinics in Karachi, Pakistan. All the data was collected by trained medical graduates using a pre-tested and structured questionnaires.

Results: In this study 30.3% (95%CI=27.3-33.2) study participants had CVD. Majority of the patients were physically inactive (65.2%) and had adverse psychosocial factors (71.4%). Forty percent of the study participants were exposed to passive smoking while 12.7% were current smokers. Only 8.8% of study subjects had none of the studied lifestyle factor, 27.5% had one, while 63.7% had two or three factors. CVD were associated with physical inactivity (AOR=1.6; 95%CI=1.2-2.3), adverse psychosocial factors (AOR=1.9; 95%CI=1.4-2.8), passive smoking (AOR=1.7; 95%CI=1.3-2.3) and clustering of two or three lifestyle factors (AOR=6.1; 95%CI=2.7-13.7). Physical inactivity was more prevalent among females (p<0.001) and patients with no/less education (p<0.001). Proportion of adverse psychosocial factors were higher among females (p=0.02), elders (p<0.001) and patients with no/less education (p=0.007). All the smokers were males while exposure to passive smoking was almost equally reported among each socio-demographic group. Clustering of these lifestyle factors was significantly higher among females, elderly and no/less educated patients. **Conclusion:** These results suggest the need of comprehensive and integrated interventions to reduce the prevalence of lifestyle factors and the increasing burden of CVD.

Keywords: Type 2 Diabetes, Cardiovascular Disease, Lifestyle Factors

6.6 AN FTO VARIANT IS ASSOCIATED WITH TYPE 2 DIABETES IN SOUTH ASIAN POPULATIONS AFTER ACCOUNTING FOR BODY MASS INDEX AND WAIST CIRCUMFERENCE

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Objective: A common variant, rs9939609, in the FTO (fat mass and obesity) gene is associated with adiposity in Europeans, explaining its relationship with diabetes. However, data are inconsistent in South Asians. Our aim was to investigate the association of the FTO rs9939609 variant with obesity, obesity-related traits and Type 2 diabetes in South Asian individuals, and to use meta-analyses to attempt to clarify to what extent BMI influences the association of FTO variants with diabetes in South Asians. **Method:** We analysed rs9939609 in two studies of Pakistani individuals: 1666 adults aged ≥ 40 years from the Karachi population-based Control of Blood Pressure and Risk Attenuation (COBRA) study and 2745 individuals of Punjabi ancestry who were part of a Type 2 diabetes case-control study (UK Asian Diabetes Study / Diabetes Genetics in Pakistan; UKADS/ DGP). The main outcomes were BMI, waist circumference and diabetes. Regression analyses were performed to determine associations between FTO alleles and outcomes. Summary estimates were combined in a meta-analysis of 8091 South Asian individuals (3919 patients with Type 2 diabetes and

4172 control subjects), including those from two previous studies. **Results:** In the 4411 Pakistani individuals from this study, the age-, sex- and diabetes-adjusted association of FTO variant rs9939609 with BMI was 0.45(95% CI 0.24–0.67) kg/m² per A-allele (P = 3.0 • 10⁻⁵) and with waist circumference was 0.88 (95% CI 0.36–1.41) cm per A-allele (P = 0.001). The A-allele (30% frequency) was also significantly associated with Type 2 diabetes [per A-allele odds ratio (95% CI) 1.18 (1.07–1.30); P = 0.0009]. A meta-analysis of four South Asian studies with 8091 subjects showed that the FTO A-allele predisposes to Type 2 diabetes [1.22 (95% CI 1.14–1.31); P = 1.07 • 10⁻⁸] even after adjusting for BMI [1.18 (95% CI 1.10–1.27); P = 1.02 • 10⁻⁵] or waist circumference [1.18 (95% CI 1.10–1.27); P = 3.97 • 10⁻⁵].

Conclusion: The strong association between FTO genotype and BMI and waist circumference in South Asians is similar to that observed in Europeans. In contrast, the strong association of FTO genotype with diabetes is only partly accounted for by BMI.

Keywords: FTO variant, Type 2 diabetes, body mass index

6.7

IN HOSPITAL CASE FATALITY RATE OF PATIENTS ADMITTED WITH DIABETIC KETOACIDOSIS IN A TERTIARY CARE CENTRE

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Objective: INTRODUCTION Diabetic Ketoacidosis is a potentially fatal complication of Diabetes Mellitus and can have significant mortality if misdiagnosed or mistreated. Internationally overall In hospital case fatality rate is reported between 1-10 percent (1, 2). DKA is a major neglected health issue of Pakistan and we believe that its incidence and subsequently its mortality are rising in our country. But little is known about its case fatality rate and true burden of the disease. This study will help us in determining the in hospital case fatality rate, hence also direct us in reforming protocols to improve patient care based on clinical evidence. **OBJECTIVES** To determine the in hospital case fatality rate of Diabetic Ketoacidosis in patients admitted to a tertiary care hospital (Aga Khan University Hospital) in Karachi.

Method: METHOD All patients fulfilling inclusion criteria were enrolled. Data were collected on pre designed Performa, and analyzed using SPSS Version 17.0. Results were given for continuous variables as means ± Standard deviation. For categorical variables, results were reported as frequencies with percentages. Stratification of in hospital case fatality rate was done according to age, duration of diabetes and length of stay. **Results:** Total of 106 patients with the diagnosis of DKA were enrolled in the study. The mean age of the study population was 43.22(±16.51) years. Out of 106 patients, 43(40.6%) were males and 63 were females (59.4%). The mean duration of having DM at the time of admission with DKA was 8(±7.69) years. Out of 106 patients 46(43.4%) had type I DM while 60(56.6%) had past history of type II DM. Random blood sugars were >250 in all 106 patients with a mean RBS of 510(±160.18) mg/dl. Mean arterial PH was 7.22(±0.145) at the time of admission

and the mean plasma bicarbonate level was found to be 8.51(±3.76) mEq. Urinary ketones were positive in all 106 patients (100%). Most common precipitating factor of DKA was found to be non compliance (39%) followed by Acute kidney Injury(27%). The mean length of stay of our study participants was 7.26(±8.587). The In hospital case fatality rate of Diabetic ketoacidosis was recorded to be 4.71% in our study. In hospital CFR was higher in age older age groups (>56 years), in females and in patients with type II DM. It was observed that CFR was higher during initial 10 days of hospital stay.

Conclusion: The In hospital case fatality rate of Diabetic ketoacidosis was 4.71% in our study.

Keywords: Diabetic Ketoacidosis, Diabetes Mellitus, Non compliance

6.8

FREQUENCY OF TYPE 2 DIABETES IN PATIENTS SUFFERING FROM POLYCYSTIC OVARIAN SYNDROME AT A TERTIARY CARE HOSPITAL

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Objective: INTRODUCTION One of the most common endocrine disorders of premenopausal women is polycystic ovarian syndrome. Its prevalence is around 10%. It is a heterogeneous syndrome with multiple etiologies and a variable clinical presentation. It is not only reproductive but also a metabolic disorder affecting all ethnic groups, presenting as menstrual dysfunction, acne, hirsutism, infertility, obesity, infertility, insulin resistance and polycystic ovaries by ultrasonography. One of the emerging issues regarding polycystic ovarian syndrome is type 2 diabetes. Approximately 25-30% of the women will develop impaired glucose tolerance and type 2 diabetes will develop in 8% of affected women by age 30. Diabetes mellitus is a multi-system disorder and results in end-organ damage. The key abnormality that leads to later development of impaired glucose tolerance appears to be insulin resistance. Although, to date, most attention of clinician has been paid to the management of specific symptoms linked to PCO, it is becoming more and more obvious that due to the complexity of this syndrome, a number of metabolic and other implications of women health will have to be confronted in the near future. So there is great need for research into several issues regarding the complexities of PCOS and their true negative late impact on women's health, especially diabetes. There are several studies done in European countries but so far there is no data regarding the frequency of type 2 diabetes in PCOS in native Asian Pakistani population so this study will help us in determining the frequency and will also direct us in reforming strategies and protocols to improve patient care and morbidity based on clinical evidence. **OBJECTIVE** To study the frequency of type 2 diabetes mellitus in women with diagnosed polycystic ovarian syndrome at a tertiary care center (AKUH).

Method: All female patients above fourteen years with polycystic ovarian syndrome (fulfilling inclusion criteria) visiting the medicine clinics of Aga Khan University Hospital during the study period were enrolled. Non-probability purposive sampling technique was used. All the information regarding demographics

and labs were recorded on a predesigned Performa. Two fasting blood sugar sample taken 48 hours apart were obtained from each subject. The normal fasting blood sugar was taken as less than or equal to 126mg/dl. Patient having blood sugar concentration of more than 126 were labeled as diabetic. All analyses was conducted by using the Statistical package for social science SPSS (Release 19.0, standard version, copyright © SPSS; 1989-02). A descriptive analysis was done for quantitative variables like age, blood glucose level (2 readings taken 48 hours apart at the time of evaluation), duration of PCO, weight, height, BMI, waist circumference and qualitative variable like family history of diabetes and obesity. Quantitative variables are presented as mean \pm standard deviation while number (Percentage) is calculated for qualitative variables. Frequency for outcome variables of type 2 diabetes was calculated. Stratification of age, weight, height, BMI, waist circumference, blood glucose level, duration of PCOS, family history of diabetes mellitus and obesity were done to control the effect modifiers.

Results: In this study, the diagnosis of diabetes mellitus was made on the basis of 2 separate fasting blood sugars level greater than 126 mg/dl (taken 48 hours apart) and both these readings were recorded on a pre designed Performa. The mean age of the study population was 30.96(range 19-56), While the mean age of diabetic patient with PCOS was 36.60 \pm 9.4. Out of 75 patients, 10 were diabetics and 65 patients were non diabetics so that the frequency of type 2 diabetes mellitus in PCOS patient was 13.3%. The age, duration of polycystic ovarian syndrome, family history of diabetes and obesity, weight, height, BMI and waist circumference was more in diabetics with polycystic ovarian syndrome.

Conclusion: The frequency of T2DM is 13.3% among patient with PCOS in a medical OPD at a tertiary care hospital in Karachi. It was also found that increasing age, duration of diagnosed PCOS, family history of diabetes, weight, waist circumference and BMI was found more in diabetics with polycystic ovarian syndrome than in non-diabetics.

Keywords: polycystic ovarian syndrome, Diabetes Mellitus, fasting blood sugar

6.9

THE CONSERVATION AND UNIQUENESS OF THYROID PEROXIDASE IN BASAL BIOINFORMATICS ANALYSIS

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Objective: Thyroid Peroxidase (TPO) is involved in the overall thyroid function. It liberates iodine for addition onto tyrosine on thyroglobulin for the production of thyroxine or triiodothyronine thyroid hormone. Previously, six TPO transcript variants have been reported in the literature. TPO is a frequent epitope of autoantibodies in autoimmune thyroid diseases. The objective of the present study was to perform a comparative bioinformatics analysis of the human TPO gene and protein

sequences to examine similarity, homology and variations in other organisms.

Method: Analysis was performed by using databases and tools available at National Center for Biotechnology Information (NCBI), European Bioinformatics Institute (EMBL-EBI) and Ensembl. The largest TPO transcript was selected for further analysis. Sequence alignment, similarity, conserved domain search (BLAST) and multiple sequence alignments (ClustalW, MUSCLE and T-Coffee) were performed. Ensembl was used for variation analysis.

Results: Ensembl search displayed 18 TPO transcripts. The largest TPO transcript shared maximum similarity with Gibbons (97%) followed by rat (79%), mouse (78%) and dog (78%) while only 44% of the sequences were similar between human and sea squirt (E value=0). Thyroid Peroxidase was the most conserved domain however the amino acid position was 145-735 in Ensembl whereas it was 167-734 in NCBI. 117 variations (synonymous coding, non-synonymous coding, coding unknown, frameshift coding and stop gained) were reported in Ensembl.

Conclusion: There are now 18 TPO transcripts identified containing several variations. These variations may have the potential of translating into clinical pathologies. The novel mutations that are being reported in TPO confirm existing data on the phenotypic variability of patients with TPO. mutations.

Keywords: Thyroid Peroxidase, Bioinformatics, Variations

6.10

EFFICACY OF ANTI-HYPERGLYCEMIC MEDICATIONS IN A SUBSET OF PAKISTAN POPULATION.

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Objective: Maintenance of normal blood glucose levels is associated with a reduced risk of micro and macro-vascular complications. This paper aims to provide an overview of anti hyperglycemic drugs and investigate their use in Pakistani population coupled with their efficacy in treatment of diabetes type2.

Method: An extensive literature was conducted and identified 140 clinical trials and 26 observational studies that compared mono or combination therapies. Further a retrospective review of 518 patients which were undergoing treatment for type II diabetes mellitus in outpatient department (OPD) of endocrinology unit of Aga Khan University Hospital was done. The data was analyzed for efficacy of the medications using SPSS.V16.

Results: The results showed weak evidence for long-term outcomes of most therapies assessed. Insulin, Biguanides, Sulfonylureas, Thiazolidinediones and Alpha-glycosidase were preferred to use singly or in combination. Overall insulin usage with other combination was in 56% of patients while overall Biguanides and sulfonylureas usage was in 61% and 45% of

patients respectively. In response to therapy, the achieved FBS level, below 110 mg/dl, was in 21% of patients, levels as >110 to <126 mg/dl were found in 13% of patients while 66% of patients had >126 mg/dl. Insulin and Biguanides were efficacious to bring the glycemic levels at normal limits in only 34 % of selected population when employed more than other classes either singly or in combination.

Conclusion: Poorly controlled glycemic levels in 66% of population indicate co-morbidities and future complications of diabetes. The results can aid doctors and patients in making informed choices for better type 2 diabetes management.

Keywords: Population

6.11

COMMON INFLAMMATORY FACTORS IN OBESITY AND DIABETES : ENROUTE HEALTH COMPLICATIONS

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Objective: Inflammation though a protective phenomenon could become lethal in phase of chronicity, deregulated homeostasis. The chronic inflammatory state of diabetes has found to be afflicted with obesity and insulin resistance. The trio of conditions is fastened to each other by a member of inflammatory mediators/cytokine. The disproportionate elevation of inflammatory markers such as TNF, CRP, IL6 and IL8 is seen in case of obesity, diabetes and person with increased predisposition to diabetes with a number of characteristic typical of metabolic syndrome. These are also found to be increased in pre-diabetic state such as insulin resistance, over weight situation and in people afflicted with inflammatory disorders such as arthritis and atherosclerosis. This review is focused to evaluate the role of above mentioned inflammatory markers in the pathogenesis of metabolically provoked state of diabetes.

Method: Information was collected from AKU library and online published/unpublished resources, through books, Journals and continued medical education websites.

Results: Recent insights suggest that inflammatory signals interact and interfere with insulin signaling pathway moreover some anti-inflammatory modalities may increase insulin sensitivity.

Conclusion: Evidences have started to surface suggesting the anti-inflammatory role of the existing hypoglycemic therapies. Inflammatory interventions in the diabetes are in its formative era. It will certainly help the global community to overcome this major health care challenge. It provides a perspective of their scope as biomarker for anticipatory diagnosis of complications associated with obesity and diabetes linked chronic inflammation.

Keywords: Diabetes, inflammation, obesity

7.1 EMERGENCY INCISIONAL HERNIA REPAIR: A DIFFICULT PROBLEM WAITING FOR A SOLUTION

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Objective: Emergency repair of obstructed incisional hernia in potentially or contaminated field is technically challenging due to edematous, inflamed and friable tissues with occasional need for concurrent bowel resection and carries high rates of post-operative infectious complications. The aim of this study was to retrospectively assess the wound related morbidity of use of permanent prosthetic mesh in emergency repair of obstructed incisional hernias. We also describe a new technique of leaving the mesh exposed to heal by secondary intention with granulation tissue.

Method: Between 2000 and 2010 a total of 60 patients underwent emergency surgery for obstructed incisional hernia with placement of permanent prosthetic mesh. The wound was closed after hernia repair in 55 patients while it was left open to granulate in 5 patients.

Results: In the group of patients with primary wound closure, 11 patients developed superficial surgical site infection, 5 developed deep wound infection and one patient had cellulitis. These patients were treated with wound debridement and antibiotics. Mesh explanation was required in one patient. There were no infections in the group of patients who had their surgical wounds left open. One patient in this group died on the fifth postoperative day from septicemia.

Conclusion: Use of permanent prosthetic mesh in emergency repair of obstructed incisional hernia in contaminated field is associated with high risk of wound infection.

Keywords: Obstructed hernia, Incisional Hernia, Emergency Hernia repair

7.2 ISOLATED ADULT HYPOGANGLIONOSIS PRESENTING AS SIGMOID VOLVULUS: A CASE REPORT

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Introduction: Isolated hypoganglionosis is a rare cause of intestinal innervation defects. It is characterized by sparse and small myenteric ganglia, absent or low acetylcholinesterase activity in the lamina propria and hypertrophy of the muscularis mucosae, principally in the region of the colon and rectum. It accounts for 5% of all intestinal neuronal malformations. To the best of our knowledge, only 92 cases of isolated hypoganglionosis were reported from 1978 to 2009. Isolated hypoganglionosis usually manifests as enterocolitis or poor bowel function, and is diagnosed in infancy or childhood. We report the first case of isolated hypoganglionosis presenting with sigmoid volvulus in a 34-year-old woman. Case presentation: A 34-year-old Asian woman had progressively increasing abdominal pain and had not passed stool or flatus for two days. A physical examination

revealed a distended abdomen with sluggish gut sounds. A computerized tomography (CT) scan demonstrated gross dilatation of the sigmoid colon (maximal diameter 14.3cm) suggestive of sigmoid volvulus. During emergency laparotomy, sigmoidectomy with a side-to-side colorectal anastomosis was performed. Histopathology of the resected specimen showed occasional ganglion cells and hypertrophied nerve bundles in the muscle layers, suggesting hypoganglionosis. Colonoscopy was performed, and multiple full-thickness biopsies were taken that showed hypoganglionosis of the entire large bowel. Our patient underwent total colectomy with an ileorectal anastomosis. Subsequently our patient reported a dramatic improvement in her bowel function. **Conclusions:** Isolated hypoganglionosis is a rare cause of intestinal dysganglionosis and cannot be differentiated from Hirschsprung's disease based on clinical presentation. A definitive diagnosis requires histopathological analysis of full-thickness intestinal biopsies. Treatment should be tailored to the extent of hypoganglionosis.

Keywords: Isolated Hypoganglionosis, Intestinal innervation defects, Sigmoid volvulus

7.4 GASTROPROTECTIVE POTENTIAL OF SELECTED PAKISTANI MEDICINAL PLANTS IN HELICOBACTER PYLORI-INFECTED GASTRIC EPITHELIAL CELLS

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Objective: Helicobacter pylori infection is associated with high global prevalence of gastritis, peptic ulcer, and gastric cancer. Due to emerging resistance problems with antibiotics, efforts are now directed to identify alternative agents to treat and prevent these associated disorders. In this study, we have evaluated the effects of selected Pakistani medicinal plants on the expression of interleukin-8 (IL-8) and reactive oxygen species (ROS) in H. pylori-infected gastric epithelial cells, to identify potential gastroprotective candidates.

Method: Human gastric epithelial cells (AGS) and clinically isolated H. pylori strain (193C) were employed for co-culture experiments. Aqueous ethanol (70%) extract of the plants, traditionally used to treat gastrointestinal disorders, were utilized and their anti-H. pylori activity and cytotoxic effects were determined by serial dilution method and DNA fragmentation assay respectively. ELISA and Flow Cytometry were performed to evaluate the effects on IL-8 secretion and ROS generation.

Results: At 100 µg/ml of concentration, among the twenty four commercially available medicinal plants evaluated against IL-8 production, around half of them strongly inhibited the secretion of IL-8 and demonstrated significant suppression of ROS in H. pylori-infected cells. Cinnamomum cassia, being the most potent among these, was further evaluated in a concentration dependent manner and showed significant ($p < 0.01$) suppression of IL-8 up to 3.12 µg/ml in H. pylori-infected cells while there was no effect of Cinnamomum cassia in uninfected cells. **Conclusion:** Our study has revealed the potential gastroprotective

effects of selected medicinal plants and may partially validate their traditional use in GI disorders particularly associated with *H. pylori*. Furthermore, *Cinnamomum cassia* might serve as a future candidate of chemoprevention against peptic ulcer or gastric cancer.

Keywords: *Helicobacter pylori*, Pakistani medicinal herbs, *Cinnamomum cassia*

7.5

DOWN-REGULATION OF ACTIVATION-INDUCED CYTIDINE DEAMINASE BY CURCUMIN: A NOVEL APPROACH TO PREVENT *HELICOBACTER PYLORI*-ASSOCIATED GASTRIC CARCINOGENESIS

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Objective: Anomalous expression of activation-induced cytidine deaminase (AID) in *H. pylori*-infected gastric epithelial cells has recently been postulated as one of the key mechanisms in the development of gastric cancer. Therefore, suppression of AID might serve a novel strategy to prevent *H. pylori*-induced gastric carcinogenesis. Curcumin is known for its anti-inflammatory and cancer chemopreventive activity. Objective of this study was to evaluate effects of curcumin in suppression of AID in *H. pylori*-infected gastric epithelial cells.
Method: MKN-28 or MKN-45 cells and *H. pylori* strain 193C were used for co-culture experiments. Cells were pre-treated with or without non-bactericidal concentrations of curcumin. Apoptosis was determined by DNA fragmentation assay. Real-time PCR reaction was employed to evaluate the expression of AID mRNA. Immunoblot assay was performed for the analysis of AID, NF-B, IB, and IKK regulation with or without curcumin.
Results: Pretreatment of Curcumin at =10 M down-regulated mRNA and protein expression of AID provoked by *H. pylori*. Similarly, expression of inflammatory cytokines such as TNF-, IL-6 and IL-8 was also suppressed by curcumin. Moreover, curcumin (=10 M) suppressed *H. pylori*-induced NF-B activation via inhibition of IKK activation and IB degradation.
Conclusion: Non-bactericidal concentrations of curcumin downregulated *H. pylori*-induced AID expression in gastric epithelial cells, probably via inhibiting NF-B pathway. Hence, curcumin can be considered as a potential chemopreventive candidate against *H. pylori* related gastric carcinogenesis.

Keywords: *Helicobacter pylori*, Activation-induced Cytidine Deaminase, Curcumin

7.7

ANTI-*HELICOBACTER PYLORI* ACTIVITY OF MEDICINAL PLANTS/ SPICES FROM PAKISTAN, EMPLOYED FOR THE TREATMENT OF GASTROINTESTINAL DISORDERS

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Objective: In the present study, we evaluated the anti-*H. pylori* activity of 50 commonly used Unani (traditional) medicine

plants from Pakistan that are extensively utilized for the cure of gastrointestinal disorders

Method: Seven clinical isolates and one standard of *Helicobacter pylori* (ATCC 43504) were included for screening of plant extracts. Fifty medicinal herbs including 25 daily culinary spices were evaluated against several Pakistani and Japanese clinical isolates. Minimum bactericidal concentration (MBC) of the active plants was determined. Resistant strains were determined on the basis of minimum inhibitory concentration (MIC) values by E-test.

Results: More than 50% of the herbs inhibited the growth of eight strains at 500 g/ml. The 70% aqueous-ethanol extracts of *Curcuma amada*, *Mallotus philippinesis*, *Myristica fragrans*, and *Psoralea corylifolia* demonstrated strong anti-*H. pylori* activity with MBC value ranged from 15.6 to 62.5 g/ml. The most potent bactericidal activity was exhibited by *Mallotus philippinesis* which completely killed the bacteria at the concentration of 15.6–31.2 g/ml. Among the isolated compounds from *Mallotus philippinesis*, rottlerin exhibited most potent bactericidal activity with MBC value of 3.12–6.25 g/ml which was comparable with positive controls.

Conclusion: As *H. pylori* is widely accepted to be the causative agent for numerous GI diseases including dyspepsia, the findings of our study may partially validate the use of these herbs in gastric diseases. Furthermore, these herbs might serve as a source for future anti-*H. pylori* candidates especially against antibiotic resistant strains.

Keywords: *Helicobacter pylori*, Pakistani medicinal plants, *Mallotus philippinesis*

7.8

PRESENTATION OF WILSON'S DISEASE IN PAKISTAN: IS IT DIFFERENT FROM THE REST OF WORLD?

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Objective: : Wilson's disease (WD) is a rare autosomal recessive disorder of copper metabolism, with an average worldwide prevalence of approximately 1 in 30,000 people. Data regarding WD from Pakistan is not available hence we aim to determine the pattern of WD in Pakistan population and wanted to compare with international literature

Method: Cross sectional study from 1985-2010, conducted at Aga Khan University Hospital Karachi

Results: A Total of 47 patients were seen among them 32 (68.1%) were male. The mean age (SD) of the patients was 26.6(9.97) years. The most common presentation in this group of patients was hepatic; 22 (46.8%), second most common mode of presentation was neurological; 17 (36.2%) and rest were presented with psychiatric symptoms which comprises of 8 (17%) patients. The patients with psychiatric symptoms had earlier onset of WD at the mean age of 18.8±3.3 years. Mean ceruloplasmin levels were 0.17 (0.13) and was reduced (<0.25 g/dl) in 39 (86.6%). Serum Copper (Cu) was reduced in 32 (68.1%). 24 hr urinary Cu was raised in only 22(47.6%). Slit Lamp examination for Kayser-Fleischer (KF) rings was done on 15(31.9%) patients and only 9(60%) patients were found to have KF rings. Out of these 9 patients with KF ring positive, 8 (88.8%) had neurologic disease. Mean Serum Aspartate Transaminase (AST)/Alanine Transaminases (ALT) ratio was 1.92 and median Alkaline Phosphatase/Total Bilirubin ratio was

79.30 (IQR 35.05;166.50) Thirty one (65.4%) patients were given combination of D-Penicillamine and Zinc (Zn), 11(23.1%) patients were given only D-Penicillamine and only 5 (11.5%) were on Zn alone. . Only one patient who presented with decompensated liver disease underwent liver transplant
Conclusion: Patients with WD present slightly later in adulthood in our population and hepatic presentation is the most common .The disease presentation and biochemical parameters in Pakistan are not different from the rest of the world. WD should be suspected in patients who have unexplained abnormal liver function tests and had family history is positive for liver disease.Earlier recognition of WD should be emphasized because early treatment of WD will prevent long term complications hence preventing premature morbidity and mortality. We can also consider that WD is not a rare entity as it is being thought.

Keywords: Wilson's disease, pakistan, Comparison

7.9

USEFULNESS OF ADJUSTED BLOOD REQUIREMENT INDEX AS AN INDICATOR OF FAILURE TO CONTROL BLEED IN PATIENTS WITH ACUTE VARICEAL BLEEDING

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Objective: Introduction: Variceal Bleed is a serious and a potentially life threatening complication of cirrhosis. Adjusted Blood Requirement Index (ABRI) has been suggested as an independent tool in predicting failure to control bleeding. Objectives: The aim of this study was to ascertain whether ABRI had any value in predicting failure to control bleeding in patients with variceal bleed. Also, we looked to assess whether there was any correlation between ABRI and complications of variceal bleed such as rebleeding, ascites and PSE.

Method: Case records of all patients admitted with variceal bleed who were admitted in the bleeding control units, following a standardized pathway between June 2007 till June 2010 was reviewed. Patients who did not require blood transfusion during their admission were excluded. Each patient's demographics, Child score, MELD score, serial hemoglobin and hemotocrit, number of packed cells transfused, endoscopic findings, outcome at 5th day were also recorded. All patients were followed for six weeks for outcome or morbidity and mortality.
Results: A total of 69 patients out of which 48 (69%) patients were males and 21 (31%) females. Hepatitis C was the underlying diagnosis in 53 (75.7%), Hepatitis B in 5 (7.1%) and non A and non B in 12 (17.1%) who had presented with active bleeding. Following endoscopy and supportive management homeostasis was achieved in 62 (88.2%). The baseline heart-rate of patients was 95 ± 22 beats per minutes and blood pressure 121 ± 22 mmHg. The initial and final Hb was 8 ± 2 and 9 ± 1 respectively whereas the initial and final Hct was 24 ± 6 and 28 ± 3 respectively. The ABRI score was 0.66 ± 0.89 while the median was 0.43. In 42 (70%) of the patients endoscopy was done 12 hours after onset of symptoms. There was a significant association between increased ABRI score and heart rate < 100 (ABRI > 0.5 and > 0.75). However there was no significant association observed between ABRI and initial Hct or number of packed cells transfusion and clinical assessment of failure to control bleed.

On six weeks follow-up rebleeding was observed in 12 (17%), ascites in 10 (15%), PSE 5 (7%). All causes mortality was observed in 6 (9%). ABRI value at < 0.5 and < 0.7 did not show any significant relationship with any parameter of morbidity and mortality.

Conclusion: ABRI values correlated well with heart rate in patients with variceal bleeding but not with hypotension, drop in hemoglobin and numbers of blood transfusion. Moreover relationship between ABRI and six weeks morbidity and mortality in patients with variceal bleeding was not observed in this study.

Keywords: ABRI, variceal bleed, ascites

7.10

USEFULNESS OF CRITICAL FLICKER FREQUENCY TEST (CFF) IN PATIENTS SUFFERING FROM CIRRHOSIS, WITHOUT EVIDENCE OF OVERT HEPATIC ENCEPHALOPATHY (HE) IN A TERTIARY CARE HOSPITAL IN KARACHI, PAKISTAN

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Objective: Hepatonorm TM Analyzer uses decreased visual evoked potential responses as the basis for measuring the critical flicker frequency (CFF), in order to grade the severity of HE. It has been shown that the CFF decreases as the severity of HE increases. The aim of the study was to assess the usefulness of CFF as a tool in diagnosing HE in patients with Cirrhosis without evidence of overt HE in a tertiary care hospital.
Method: This Prospective cross sectional study was conducted in out-patient GI clinics of Aga Khan University Hospital from June 2010 till June 2011. Cirrhosis was diagnosed on clinical examination, laboratory tests including radiology and liver biopsy where possible. The grades of HE were assessed according to West Haven criteria at the beginning of evaluation in all cirrhotic patients (n=450) and 86 patients without overt HE were enrolled depending on their eligibility for enrolment and an equal number of age and gender matched healthy volunteers were also enrolled. Both groups were subjected to NCT A and CFF measurements using standard NCT A chart and Hepatonorm TM Analyzer respectively.

Results: Mean age of cirrhotic patients was 45.88 ± 13.75 years and 45 (52.3%) were males. The mean NCT-A of cases was 117.67 ± 59.55 seconds and the mean CFF value was 36.10 ± 4.27 Hz. The mean age of healthy individuals was 44.10 ± 9.7 years and 49(57%) were males. The mean value of NCT A in healthy individuals was 42.9 ± 14.17 seconds and CFF value was 47.02 ± 6.5 Hz. Both NCT A and CFF values were significantly different in the two groups ($p < 0.05$). A linear regression analysis of NCT A and CFF values in cirrhotics revealed a significant correlation ($r = -0.53$, $p = 0.01$) whereas no such correlation was found in the healthy controls.

Conclusion: CFF is significantly decreased in cirrhotics without overt HE compared to healthy volunteers. There is also a significant correlation between CFF and NCT A in cirrhotics without overt HE but not in healthy controls.

Keywords: Minimal hepatic encephalopathy, Critical flicker frequency, Chronic Liver disease.

7.11

DRUG INDUCED LIVER INJURY: OUR EXPERIENCE IN THE PAST 20 YEARS AT AKUH.

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Objective: Drug induced liver injury (DILI) is among the leading causes of acute liver failure and the most common reason for pulling drugs off the market during post marketing surveillance. The drugs include those prescribed by both allopathic and alternative medical practitioners. While allopathic medications have been implicated most commonly in the West, Asian literature reports non conventional medications to be a significant contributor to DILI. We carried out a cross sectional study at Aga Khan University Hospital, Karachi, Pakistan to determine drugs responsible for DILI, the pattern of liver injury and their eventual outcome.

Method: Patients diagnosed to have DILI during 1990-2010 were identified using ICD code 9. Patient demographics, clinical and laboratory features, detailed drug history for the past 3 months, radiological investigations and biopsy results were analyzed. We divided subjects into types of liver injury based on the International Consensus Meeting criteria. **Results:** A total of 295 patients were analyzed. The mean age was 49 years and 52.2% were males. Multiple drugs were found to be the culprit. Anti-Tuberculosis Therapy was implicated in 58% cases, Non-Steroidal Anti Inflammatory drugs in 7%, Valproic acid in 6% and 4% was contributed to by hakeem/herbal medications. Pattern of liver injury varied from hepatocellular (43.1%), cholestatic (40.7%) and mixed (16.3%). After a 6 month follow up period, 46.1% patients recovered fully following removal of offending agent and treatment, 4.1% developed chronic disease while 14.9% died.

Conclusion: DILI is a significant contributor to morbidity in our population, with hepatocellular injury being the most common type (43.1%). ATT and NSAIDs are the agents causing most of the DILI. On withdrawal of offending agent most patients recover well (46.1%) but 14.9% expired despite treatment, the remaining 4.1% developing chronicity

Keywords: DILI, drug induced liver injury

7.12

EFFECT OF URSODEOXYCHOLIC ACID (UDCA) THERAPY ON GALL BLADDER MOTILITY IN CHOLESTEROL GALL STONE PATIENTS.

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Objective: Ursodeoxycholic Acid (UDCA) has been used as a Gall Stone dissolving agent. However, its role in Gall Bladder motility in patients with Gall Stone disease has been studied inadequately.

Method: Gall Bladder specimens were obtained from Gall Stone patients treated with UDCA (n=3) and untreated patients (n=

7). In vitro Gall Bladder contractility was determined in tissue bath experiments and cumulative concentration response curves were constructed. Histological examination of resected gall bladders and bile analysis were also carried out. **Results:** The cumulative concentration response curves revealed similar maximum contraction to Carbachol (expressed as percentage of maximum contraction to K⁺) 43.13±21.94 vs 56.75±7.02 (p>0.05) in UDCA treated and untreated patients, respectively. Similarly, the sensitivity of contraction expressed as pD₂ values were also similar in the two groups, 1.37±0.19 vs 0.73±0.22 (p>0.05). The inflammation scores comparing degree of fibrosis, muscle thickness, inflammatory cell infiltration were also similar in the two groups. Bile analysis revealed similar total bile cholesterol concentration, 686.67±550.71 vs 732.09±180.19 mg/dl, triglyceride levels 46.00± 12.36 vs 80.86±14.0 mg/dl, and total bile acid concentration 19.03±6.44 vs 42.36±15.14 mg/dl in the two groups, respectively (p>0.05). **Conclusion:** UDCA therapy in a dose of 10mg/kg/day in Cholesterol Gall Stone patients do not alter in vitro Gall Bladder contractility and is therefore unlikely to lead to bile stasis and consequent biliary sepsis. However, numbers in our study are small and more studies on a larger number of patients are required.

Keywords: Ursodeoxycholic Acid, Gall Bladder motility, Gallstone

7.13

PREVALENCE OF NON HELICOBACTER PYLORI SPECIES IN PATIENTS PRESENTING WITH DYSPEPSIA

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Objective: Helicobacter species associated with human infection include Helicobacter pylori (H. pylori), Helicobacter heilmannii (H. heilmannii) and Helicobacter felis (H. felis). In this study we determined the prevalence of non-Helicobacter pylori organisms e.g. H. felis and H. heilmannii in patients presenting with dyspepsia.

Method: Biopsy specimens were obtained from patients with dyspepsia on esophagogastroduodenoscopy (EGD) for rapid urease test, histology and PCR examination for Helicobacter genus specific 16S rDNA, H. pylori phosphoglucosamine mutase (glmM) and urease B (ure B) gene of H. heilmannii and H. felis. Sequencing of PCR product of H. heilmannii and H. felis was done.

Results: Two hundred-fifty patients with dyspepsia were enrolled. The mean age was 39± 12 years with male 162(65%). Twenty-six percent (66 out of 250) were exposed to cats or dogs. PCR for Helicobacter genus specific 16S rDNA was positive in 167/250 (67%), H. pylori glmM in 142/250 (57%), H. heilmannii in 17/250 (7%) and H. felis in 10/250 (4%), respectively. Patients with H. pylori infection were significantly in the 17- 39 years age range, while H. felis and H. heilmannii did not show this distribution. The occurrence of coinfection of H. pylori and H. heilmannii was 17(7%) and with H. felis was 10(4%), respectively. Only 6% (1 out of 66) exposed to pets were positive for H.

heilmannii (p=0.05). Sequencing of PCR amplified products were consistent with *H. heilmannii* and *H. felis*
Conclusion: The prevalence of *H. heilmannii* and *H. felis* was low in our patients with dyspepsia in keeping with low exposure to pet. Most patients with *H. heilmannii* infection did not have pet contact. There was no difference in the gastric histopathology finding associated with coinfection with these helicobacter species.

Keywords: Dyspepsia, *H. pylori*, *H. heilmannii*

7.14

THE VIRULENCE MARKERS OF HELICOBACTER PYLORI IN PATIENTS WITH DIARRHEA DOMINANT IRRITABLE BOWEL SYNDROME

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Objective: Recent studies suggest that Irritable bowel syndrome (IBS) is associated with low grade inflammation. We determined the distribution of *Helicobacter pylori* (*H. pylori*) cytotoxin associated gene-A (*cagA*) and vacuolating cytotoxin-A (*vacA*) alleles e.g. s1 and s2 in patients with diarrhea dominant IBS (IBS-D) as latter causes vacuolation in colonic epithelial cells in vitro.

Method: One hundred and seventy patients meeting Rome III criteria for IBS-D, mean age 40 ±15 years were enrolled. Gastric biopsy were used for histology and DNA extraction for polymerase chain reaction (PCR) for *H. pylori* genus 16S ribosomal DNA (16SrDNA), *cagA* and *vacA* allele s1 and s2.
Results: *H. pylori* was positive in 204(62%). There was no age and gender related difference in *H. pylori* positivity in IBS-D compared to control. *H. pylori* was positive in 116(68%) with IBS-D compared to 88(55%) (p=0.01) in control. *CagA* was positive in 73(63%) with IBS-D compared to 42(48%) (p=0.03) in control. The *vacAs1* was positive in 61(53%) with IBS-D compared to 32(36%) (p=0.02) in control. The *cagAs1* was positive in 39(34%) with IBS-D compared to 13(15%) (p=0.002) in control.

Conclusion: *H. pylori* infection is common in IBS-D. The infecting strains were predominantly *cagA* positive in IBS-D.

Keywords: IBS-D, *H. pylori*, *cagA/vacA*

7.15

IN VITRO SENSITIVITY OF BLASTOCYSTIS HOMINIS TO GARLIC, GINGER, WHITE CUMIN AND BLACK PEPPER USED IN DIET

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Objective: To determine the growth pattern and in vitro susceptibility of *Blastocystis hominis* (*B. hominis*) to

metronidazole (MTZ), garlic, ginger, white cumin and black pepper.

Method: Stool specimens were collected from 16 irritable bowel syndrome (IBS) and 10 controls between July-November 2010. Stool microscopy and culture for *B. hominis* was performed. Drug susceptibility assays was done using 0.01mg/ml and 0.1 mg/ml of metronidazole (MTZ), garlic, ginger, white cumin and black pepper. Effect was assessed on *B. hominis* culture after 48 hours. Stool DNA was extracted using stool DNA extraction kit (Qiagen) and polymerase chain reaction (PCR) done using subtype specific sequence-tagged-site primers.

Results: *Blastocystis hominis* genotype 3 and coinfection of 1 and 3 tended to grow well in culture compared to isolated type 1 infection. Exposed to MTZ at a concentration of 0.01mg/ml, 38 % (6/16) *B. hominis* from IBS did not grow in culture compared to 100% (10/10) of *B. hominis* from control (p=0.001). When they were exposed to MTZ at 0.1mg/ml, 56 % (9/16) *B. hominis* from IBS did not grow in cultures compared to 100% (10/10) from control (p=0.01). 44 % (7/16) *B. hominis* from IBS did not grow in culture compared to 100% (10/10) *B. hominis* from control when exposed to garlic at a concentration of 0.01mg/ml (p=0.003) and following exposure to garlic at 0.1mg/ml, 38 % (6/16) *B. hominis* from IBS did not grow in cultures compared to 100% (10/10) from control (p=0.001). *B. hominis* isolates from IBS had a cell count of 6625 at a MTZ concentration of 0.01mg/ml that reduced to 1250 as MTZ concentration was increased to 0.1mg/ml (p=0.08). *B. hominis* from IBS with a mean cell count of 3x 10⁵ at baseline decreased to 1x 10⁴ when exposed to garlic at 0.01mg/ml (p<0.001) and to 1x 10³ (p<0.001) when garlic was 0.1mg/ml. *B. hominis* from IBS, cell count decreased to 1 x 10⁵ when exposed to white cumin at 0.01mg/ml (p=0.01) and to 1 x 10⁵ (p<0.001) when white cumin was 0.1mg/ml. Exposed to black pepper at 0.1mg/ml, cell count of *B. hominis* from IBS decreased to 1 x 10⁵ (p=0.01). *B. hominis* from IBS decreased to 1.3 x 10⁵ exposed to ginger at 0.01mg/ml (p=0.001).

Conclusion: *Blastocystis hominis* isolates from IBS mostly genotype 1 demonstrated an increased sensitivity to garlic compared to MTZ. The sensitivity to MTZ increases as its concentration is increased.

Keywords: *Blastocystis hominis*, genotype, Garlic

7.16

PHARMACOLOGICAL STUDIES ON GUT MODULATORY AND BRONCHODILATOR ACTIVITIES OF AMARANTHUS SPINOSUS LINN.

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Objective: *Amaranthus spinosus* Linn., (Family, Amaranthaceae) was studied for laxative, spasmolytic and broncho-dilator activities to validate some of its medicinal uses.

Method: The study was conducted on aqueous-methanolic extract of the whole plant (As.Cr) by using in-vitro and in-vivo experiments.

Results: As.Cr showed a concentration-dependent (0.01-10.0 mg/ml) spasmogenic effect in spontaneously contracting rabbit jejunum and guinea-pig ileum preparations. The spasmogenic effect was partially blocked in tissues pretreated with atropine (0.1 μ M). As.Cr completely relaxed K⁺ (80 mM)-induced contraction in isolated rabbit jejunum, and shifted Ca⁺⁺ concentration-response curves towards right, similar to diltiazem. In the in vivo laxative study, As.Cr (100 and 300 mg/kg) increased fecal output in mice. In rabbit trachea, As.Cr completely relaxed K⁺ (80 mM) and carbachol (1 μ M)-induced contractions at 1 mg/ml but in the presence of propranolol, the CCh-induced contraction was relaxed at higher concentration (10 mg/ml). As.Cr increased both force and rate of spontaneous contractions in isolated guinea-pig atria up to 0.3 mg/ml followed by relaxation at higher concentration (1.0-5.0 mg/ml). The cardio-stimulant effect was diminished in the presence of propranolol. Activity-directed fractionation revealed that the spasmolytic component (s) was separated in organic fraction whereas the spasmogenic component was concentrated in aqueous fraction along with week spasmolytic activity.

Conclusion: These results, suggesting that As.Cr contains spasmogenic effect partially mediated through cholinergic and spasmolytic effect through calcium antagonist pathways, while broncho-dilator effect is mediated through a combination of β -adrenergic agonistic and calcium channel blocking mechanisms, explain the medicinal uses of *Amaranthus spinosus* in gut and airway disorders.

Keywords: *Amaranthus spinosus* , laxative, broncho-relaxant

7.17 SMALL INTESTINAL BACTERIAL OVERGROWTH AND LACTOSE INTOLERANCE CONTRIBUTE TO IRRITABLE BOWEL SYNDROME SYMPTOMATOLOGY IN PAKISTAN

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Objective: The symptoms of irritable bowel syndrome resemble to those of small intestinal bacterial overgrowth (SIBO). The aim of this study was to determine the frequency of SIBO and lactose intolerance (LI) occurrence in patients with diarrhea predominant irritable bowel syndrome (IBS-D) according to Rome III criteria.

Method: In this retrospective case-control study, patients over 18 years of age with altered bowel habit, bloating and who had lactose Hydrogen breath test (H2BT) done were included. The "cases" were defined as patients who fulfill Rome III criteria for IBS-D while "controls" were those having chronic nonspecific diarrhea (CNSD) that did not fulfill Rome III criteria for IBS-D. Demographic data, predominant bowel habit pattern and concurrent use of medications, etc were noted.

Results: Patients with IBS-D were 119(51%) with a mean age of 35 \pm 13 year while those with CNSD were 115(49%) and mean age 36 \pm 15 year. Patients in both IBS-D and CNSD were comparable in gender with more often male 87(74%) vs 77(67%), respectively. SIBO was documented by lactose H2BT in 32/234 (14%). It was positive in 22/119(19%) with IBS-D while 10/115(9%) had CNSD (p = 0.03). Lactose intolerance was

positive in 43/234 (18%). Of these 25/119 (21%) had IBS-D and 18/115 (16%) with CNSD (p=0.29).

Conclusion: Small intestinal bacterial overgrowth was seen in a significant number of our patients with IBS-D. There was no significant age or gender difference in patients with or without SIBO.

Keywords: IBS-D, small intestinal bacterial overgrowth, Lactose intolerance

7.18 HELICOBACTER PYLORI CAGE GENE IS ASSOCIATED WITH SENSITIVITY TO PLANT EXTRACTS USED IN POPULAR DIET

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Objective: There is an increase in the prevalence of antibiotic resistance to *Helicobacter pylori* (*H. pylori*) treatment. We determined plant extracts as anti-*Helicobacter pylori* activity that are used in local cuisine.

Method: Extracts were prepared of garlic, white cumin and black pepper. *H. pylori* strains were isolated from patients with dyspeptic symptoms. Extracts bactericidal activity was determined by a viable colony count. Clarithromycin (CLR) and amoxicillin (AMX) were used as control. Bacterial cell DNA was extracted. We determined DNA fingerprint by random amplified-polymorphic-polymerase chain reaction (RAPD-PCR) and virulence marker e.g., cytotoxin-associated gene (*cagA*), *cag*-promoter (*cagA P*) and *cagE* gene.

Results: *H. pylori* exhibited sensitivity to garlic which increased as its concentration was increased. In the presence of *cagE* gene, *H. pylori* sensitivity increased to mixed herbs in both concentrations 11(37%) vs. 3(11%) (p=0.02) and 18(60%) vs. 4(14%) (p<0.001), respectively. This effect may be related to presence of white cumin which was more effective in the presence of *cagE* gene, 13(43%) vs. 5(18%) (p=0.04).

Conclusion: *H. pylori* strains exhibited sensitivity to herbs mix and white cumin. This sensitivity was increased in the presence of *H. pylori cagE* gene.

Keywords: *Helicobacter pylori*, *cagE* , garlic

7.19 POPULATION- ATTRIBUTABLE RISK ESTIMATES FOR RISK FACTORS ASSOCIATED WITH HEPATITIS B AND C IN PAKISTAN, IMPLICATIONS FOR PREVENTION POLICY AND PLANNING

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Objective: Re-use of contaminated syringes, greater frequency of injections, tattooing, and skin piercing have repeatedly been shown to be an important and independent risk factors for hepatitis B and C. There have been few attempts, however, to quantify the proportion of disease associated with these potentially modifiable factors.

Method: We estimated the population attributable risks (PARs) of various risk factors of HBsAg and Anti HCV in our population using data from a nationally representative cross sectional survey conducted between July 2007 - May 2008 by Pakistan medical and research council (PMRC). Estimation of population (PARs) was obtained by using an approach based on unconditional logistic regression.

Results: Odds of HBsAg among those with greater than 10 IM injections in the past one year are 4.5 times than those with none, yielding a PAR of 3.5%. Likewise, decreasing the practice of reuse of syringes will result in preventing 2.7% of hepatitis B from our population. Another modifiable risk factor, reducing the practice of shaving at barbers will avert 2.5% of new cases. Similarly, odds of sharing of smokeless tobacco (cigarettes, hokas, bidi) are 2.5 times more associated with the outcome, giving a highest PARs of 4.4%. For anti HCV, by reducing the frequency of IM injections will avert 11.3% new cases. Similarly, decreasing the practice of reuse of syringes will result in obviating 2.7% of hepatitis C cases. Decreasing the practice of sharing of smokeless tobacco (cigarettes, hokas, bidi) will preclude 8.1% of this disease from our population. Odds of Anti-HCV among those reporting tattooing are 8.3 times yielding a PAR of 3.5%. Similarly, practice of ear/ nose piercing among females yields PARs of 5.9%.

Conclusion: About one-third of the HBsAg and anti HCV cases in this Pakistani population could be prevented by the intervention on a few selected and modifiable risk factors.

Keywords: PARs, Hepatitis B, Hepatitis C

7.20

RESVERATROL FROM RED GRAPES AS CHEMOPREVENTIVE CANDIDATE AGAINST H. PYLORI-ASSOCIATED DISORDERS

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Objective: Inflammatory cytokine interleukin-8 (IL-8) and reactive oxygen species (ROS) overexpressed in the gastric mucosa when exposed to *Helicobacter pylori*, defined as a class I carcinogen. Moreover, infection with *H. pylori* leads to morphological changes in co-cultured cells known as hummingbird phenomenon along with increased motility. In the present study, we evaluated the effect of resveratrol, a highly abundant polyphenol in red grapes, against *H. pylori*-linked interleukin-8 secretion, reactive oxygen species generation and morphological changes in human gastric epithelial cells.

Method: MKN45 cells and clinically isolated *H. pylori* strain (193C) was employed for co-culture experiments. Anti-*H. pylori* activity and cytotoxic effects of the resveratrol were determined by serial dilution method and DNA fragmentation assay respectively. ELISA and Flow Cytometry were performed to evaluate the effect on IL-8 secretion and ROS generation in *H. pylori*-infected cells.

Results: The non-toxic resveratrol (=100 M) treatment did not demonstrate any inhibitory effect against *H. pylori* adhesion to

gastric epithelial cells. However, preincubation of the cells with 75 and 100 M of resveratrol significantly ($p < 0.05$ and $p < 0.01$ respectively) inhibited the secretion of IL-8 from *H. pylori*-infected cells. In addition, resveratrol pretreatment at 1–100 M suppressed *H. pylori*-induced ROS generation in a concentration dependent manner. Moreover, *H. pylori*-initiated morphological changes were markedly blocked by resveratrol.

Conclusion: Hence, resveratrol or red grapes might be considered as a potential candidate for preventing various *H. pylori* associated disorder like peptic ulcer and gastric cancer.

Keywords: *Helicobacter pylori*, Resveratrol, Anti-inflammatory

7.21

UNDERLYING MECHANISMS FOR THE LAXATIVE AND ANTIDIARRHOEAL EFFECTS OF INDIAN PSYLLIUM HUSK (ISPAGHULA) AND ITS COMPARISON WITH PAKISTANI VARIETY

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Objective: This study was aimed at providing pharmacological basis for the medicinal use of psyllium husk (Ispaghula) of Indian variety in gut motility disorders and its comparison with Pakistani variety.

Method: Animal experiments were conducted in mice and isolated tissue experiments were performed in rabbit jejunum and guinea-pig ileum.

Results: In mice, the crude extract of Indian variety of Ispaghula (Poi.Cr) caused laxative effect at 100 and 300 mg/kg, which was partially sensitive to atropine or SB203186 (5-HT₄ antagonist), while at higher tested doses of 500 and 1000 mg/kg, it showed antisecretory and antidiarrheal activities. In guinea-pig ileum, Poi.Cr (1-10 mg/ml) caused spasmodic effect, which was reduced in the presence of atropine or SB203186. In rabbit jejunum, extract exhibited a partially atropine-sensitive contractile effect followed by relaxation at 10 mg/ml. The relaxation was inhibited in the presence of phentolamine. Similarly, the partial relaxant effect of Poi.Cr observed on K⁺ (80 mM)-induced contractions was significantly attenuated when restudied in tissue pretreated with phentolamine. Solvent-guided fractionation revealed that the gut modulatory constituents of Poi.Cr were distributed in aqueous and organic fractions.

Conclusion: By comparing data, Poi.Cr showed a similar pattern of activity in its gut stimulatory effect (partially cholinergic and serotonergic) as seen in Pakistani variety, while its antispasmodic effect was mediated through the activation of α -adrenergic receptors instead of NO-cGMP pathways as observed in Pakistani variety. This data indicates that Indian variety of ispaghula is relatively more effective in constipation and Pakistani ispaghula is more effective in diarrhea.

Keywords: Indian variety of *Plantago ovata*, Pakistani variety of *Plantago ovata*, Ispaghula

7.22

A MECHANISTIC STUDY ON THE MEDICINAL SE OF MINT IN DIARRHEA

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Objective: This study was tempted to provide underlying mechanism(s) for the medicinal use of *Mentha arvensis* (Mint) in gut hyperactive disorder

Method: In-vivo assays were performed in mice and isolated tissue experiments were conducted in rabbit jejunum and guinea-pig ileum.

Results: The crude methanolic extract of the leaves of *Mentha arvensis* (Ma.Cr) was tested positive for the presence of alkaloids, tannins, terpenes, flavonoids, sterols and coumarins as plant constituents. The crude extract (300-600 mg/kg) caused inhibition of both castor oil-induced and magnesium sulphate-stimulated diarrhea in mice, similar to nifedipine and dicyclomine. In spontaneously contracting rabbit jejunum, Ma.Cr (0.1-3 mg/mL) caused relaxation. When tested on carbachol (CCh) and K⁺ (80 mM)-induced contractions, Ma.Cr (0.3-10 mg/mL) caused a complete relaxation of CCh, while partially inhibited K⁺ (80 mM) at the highest tested concentration (10 mg/mL) and the pattern of relaxation was found similar to that of dicyclomine. The preincubation of guinea-pig ileum with Ma.Cr (1 mg/mL), caused a rightward parallel shift in concentration-response curves (CRCs) of CCh without suppression of the maximum response. At higher concentration of 3 mg/mL, it produced a non-parallel rightward shift with suppression of the maximum response, similar to that of dicyclomine, suggesting the antispasmodic effect was mediated through dual blockade of muscarinic receptors and Ca⁺⁺ channels. The Ca⁺⁺ antagonist activity was confirmed when pretreatment of the tissue with Ma.Cr shifted the CRCs of Ca⁺⁺ to the right with suppression of the maximum response, similar to nifedipine or dicyclomine

Conclusion: These results indicate that Mint extract possesses antidiarrheal and spasmolytic activities mediated possibly through dual blockade of muscarinic receptors and Ca⁺⁺ channels, thus explaining its medicinal use in diarrhea.

Keywords: *Mentha arvensis*, Antidiarrheal, Antispasmodic

7.23

PREVALENCE AND RISK FACTORS OF NAFLD AMONG NATIVE SOUTH ASIAN PAKISTANI PATIENT WITH TYPE 2 DM

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Objective: Despite an increase in morbidity and mortality due to diabetes(DM) and metabolic syndrome(MS) in South-Asia and establishment of their association with Non-alcoholic fatty liver disease(NAFLD) in other part of world, scanty data is available regarding NAFLD from Pakistan. NAFLD is not only a precursor of Cirrhosis & HCC but also associated with increased morbidity & early mortality. AIMS: To estimate the prevalence

of NAFLD and to determine the predicting factors associated with NAFLD among native South Asian Pakistani patients with Type 2 DM & Metabolic Syndrome.

Method: This was a prospective, Cross-sectional study, conducted in outpatient clinics of the Aga Khan University hospital, Karachi, Pakistan during 2007 and 2010. Patients=18 years of age diagnosed to have type 2 DM and MS were enrolled. Patients who have liver disease due to HBV, HCV, autoimmune and metabolic causes, taking hepatotoxic drugs or alcohol were excluded. NCEP, ATP III Criteria for MS with the exception of abdominal obesity (waist circumference >90 cm in men & 80 cm in women for Asian population) was used to define MS. Information was collected about demographics, BMI(KG/m²), waist circumference, components of MS, duration of DM, glycemic control and ALT. Ultrasound liver was performed by an experienced sonologist to identify NAFLD. Patients with elevated ALT were evaluated for HBV, HCV infection and for autoimmune and metabolic liver disease.

Results: Out of 180 patients 163 were eligible. Mean age was 54.3±11.1 years with 87(54%) males. Overall prevalence of NAFLD was 72.4%. Moreover, the NAFLD prevalence was higher among males as compared to females(51.3% vs.40.7%) and patients with HTN(73.6% vs. 53.6%), dyslipidemia(59.7% vs. 53.65%) and obesity(70% vs. 49.1%). Mean ALT was 27.0±15.9 IU/ml. ALT was higher above the normal limits in 15% cases and was associated with severe fatty changes in liver. Older age(p 0.02), obesity(p 0.01), higher waist circumference(p 0.03), longer duration of DM(p 0.01), dyslipidemia(0.04), poor glycemic control(p 0.03) were the factors significantly associated with NAFLD. Furthermore, prevalence of NAFLD was increased with increasing components of MS.

Conclusion: The prevalence of NAFLD was high in this cohort of South Asian Pakistani population with type 2 DM and Metabolic Syndrome. Moreover, NAFLD was not only strongly associated with the MS, the increasing components of MS were also found to be associated with higher risk of NAFLD.

Keywords: diabetes mellitus, diabetes mellitus type 2, metabolic syndrome, NAFLD,, NAFLD

7.24

ETIOLOGY AND DISEASE CHARACTERISTICS OF PATIENTS WITH ACUTE ON CHRONIC LIVER FAILURE IN KARACHI, PAKISTAN

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Objective: Acute on Chronic liver failure (ACLF) is associated with high morbidity and mortality. Hepatitis E virus (HEV) super-infection is common in patients with underlying chronic liver disease (CLD) and can lead to ACLF. Scanty data is available from Pakistan which is a hyper-endemic region for HEV virus. The aim of present study was to investigate the etiology and disease characteristics of patients presenting with Acute on Chronic Liver Failure.

Method: Consecutive patients=18 years of age admitted with acute liver failure in Gastroenterology wards of The Aga Khan University hospital, Karachi, Pakistan during 2008-2009 were evaluated. Those who were diagnosed to have ACLF were

included. The diagnosis of ACLF was made if the patient has 1) acute onset jaundice within last 4 weeks, 2)serum bilirubin= 2 mg/dl, 3)coagulopathy(INR=1.5), 4)clinical/histological/radiological or serological evidence of underlying chronic liver disease, 5)Known compensated CLD and now presented with acute decompensation.

Results: Out of 200 patients 34 patients were diagnosed to have ACLF. Mean age was 40.88±12.96 years and 25(73.5%) were males. The etiology of underlying CLD was HBV(32.4%), HCV(17.6%) concomitant HBV, HDV with or without HCV(23.3%), alcohol(5.9%), Wilson's disease(2.9%) and cryptogenic cirrhosis(17.6%). The etiology for acute decompensation was acute hepatitis E (44.1%), hepatitis A (2.9%), acute HBV(14.7%), HDV superinfection(5.9%), hepatotoxic drugs (2.9%) and unknown(29.4%). Common presentations were fever(78%), jaundice (100%), ascites(58.8%) and encephalopathy(61.8%). Mean CTP and MELD scores were 11.55±2.06 & 28.38±9.85 respectively. Laboratory parameters at presentation were Hb 11.9±2.3 mg/dl, creatinine1.8±1.2mg/dl, bilirubin 20.1±10.4 mg/dl, albumin 2.2±0.6mg/dl, ALT 539.2±396IU/ml, PT 24.4±12.4 seconds. Overall in hospital mortality was 55.9%. On multivariate analysis, ascites, hepatic encephalopathy, renal failure, GI bleeding, total bilirubin and coagulopathy were the significant predictors of mortality.

Conclusion: HEV was the most common cause of ACLF. ACLF is associated with significant in hospital mortality. Preventive measures against HEV could prevent severe acute hepatic decompensation and mortality.

Keywords: ACLF, acute liver failure

7.25

RETREATMENT OF CHRONIC HEPATITIS C, GENOTYPE 3 PATIENTS WITH PEGYLATED INTERFERON AND RIBAVIRIN

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Objective: Re-treatment of patients with chronic hepatitis C virus(HCV), non-responders or relapsers to interferon alfa and ribavirin is difficult. AIM: To evaluate the sustained virological response(SVR) after re-treatment with pegylated Interferon and Ribavirin in chronic HCV, non-responder (NR) or relaper patients with genotype 3 infection.

Method: This was a prospective observational study. All patients who were non-responders or relapsers to initial treatment with standard IFN and ribavirin and visiting our Gastroenterology clinics from 2007 to 2009 were studied. All patients received pegylated interferon alfa 2a(180 mcg/kg/week) with ribavirin(400mg TID). Diagnosis of cirrhosis was made by liver biopsy and/or on biochemical and ultrasonological findings. Patients were given treatment for 6 or 12 months based on rapid virological response(RVR). Primary end point was SVR. Predictors of SVR were also analyzed and adverse events were recorded.

Results: A total of 63 patients were re-treated. There were 54.1% males and 53(84%) were >35 years of age. 35 patients had child's Acirrhosis. There were 25(39.67%) NR and 38(60.3%) relapsers.

Duration of treatment was 6 months in 43 patients and 12 months in 18. Two patients were unable to complete treatment due to adverse events. Following re-treatment, the SVR was achieved by 38(60.3%) patients. RVR and ETR was achieved in 44(72.1%) and 40(65.6%) cases respectively. Moreover, SVR was achieved in 31/43(72%) and 9/18(50%) patients who received 6 & 12 months treatment respectively. RVR(p 0.006), non-cirrhotic status(p 0.007), relapse with initial treatment(p<0.05), re-treatment within one year(p<0.05) were predictors of SVR. The most frequent adverse events were fever(55%), fatigue(40%), and anorexia(35%). Six patients were supported with G-CSF and 10 with erythropoietin for leucopenia and anemia respectively with modification in dosage of peg-IFN and ribavirin. **Conclusion:** Re-treatment with pegylated interferon and ribavirin in non-responder HCV genotype 3 patients is effective. Rapid virological response, non-cirrhotic status, relapse with initial treatment, re-treatment within one year were predictors of SVR

Keywords: Chronic Hepatitis C, retreatment, HCV relapsers

7.26

MIRIZZI'S SYNDROME MASQUERADING AS CHOLANGIOCARCINOMA : A CASE REPORT

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Objective: Mirizzi's syndrome is a rarely observed condition that presents with obstructive jaundice caused by a stone impacted in the gallbladder neck or the cystic duct that impinges on the common hepatic duct with or without a cholecystocholedochal fistula. Preoperative diagnosis of Mirizzi's syndrome could be challenging as the clinical, biochemical and radiological presentation is similar to other conditions like choledocholithiasis, cholangitis or cholangiocarcinoma.

Method: We present a case of a 44 year old male with mirizzi's syndrome who was initially diagnosed as cholangiocarcinoma based on his clinical presentation, raised CA19-9 levels and radiological findings.

Results: The patient was diagnosed with Mirizzi's syndrome intra-operatively. On surgical exploration a thick walled gall bladder was seen with a large stone impacted in the cystic duct causing external compression on the common hepatic duct (Mirizzi's syndrome). Intra operative cholangiogram also showed a proximal filling defect in the common bile duct. Eventually a cholecystectomy was done with common bile duct exploration and T-tube placement for bile drainage. Tissue of the gallbladder sent for histopathology came out to be negative for malignancy. The postoperative course was uneventful.

Conclusion: The accurate diagnosis of Mirizzi's syndrome is of particular importance to surgeons as the condition may be confused with choledocholithiasis, cholangitis or cholangiocarcinoma on initial presentation and hence the surgical treatment is associated with a significantly increased risk of bile duct injury.

Keywords: Mirizzi's Syndrome, Cholangiocarcinoma, Cholecystectomy

7.27

LATE PRESENTATION OF SIGMOID VOLVULUS IN PREGNANCY- A SURGICAL AND OBSTETRIC CATASTROPHE, A CASE REPORT

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Objective: Sigmoid volvulus in pregnancy is a rare but serious complication associated with a significant maternal and fetal mortality. The fundamental problem of sigmoid volvulus in pregnancy is that of delay in presentation and diagnosis leading to ischaemia of the colon, which requires bowel resection and colostomy as seen in most of the reported cases. Timely surgical intervention is essential to reduce maternal and fetal morbidity and mortality.

Method: We report a case of a 30 weeks pregnant lady with sigmoid volvulus. **Results:** A 25 year old pregnant lady, gravid 2, para 1 presented to the emergency room with complaints of lower abdominal pain, abdominal distension, bilious vomiting and constipation for 6 days. Plain radiographs of the chest and abdomen showed pneumoperitoneum, a single fetus and a distended gas filled transverse colon. U/S scan revealed a dead intra-uterine fetus. With the clinical suspicion of acute intestinal obstruction patient was taken up for emergency laparotomy. Intra-operatively findings were a large sigmoid volvulus resulting in closed loop obstruction leading to distended large bowel throughout the colon. The whole of the colon was friable, gangrenous and necrotic. Colon was mobilized & resected and diverting ileostomy was performed. The patient developed sepsis post-operatively and eventually expired on the 8th post-operative day.

Conclusion: Sigmoid volvulus complicating pregnancy is very rare condition with significant maternal and fetal morbidity and mortality. Timely diagnosis mandates high index of clinical suspicion in patients presenting with abdominal pain, distension and absolute constipation

Keywords: Volvulus, Intestinal obstruction, pregnancy

7.28

IS TAE A VALUABLE FOR TREATMENT OF SPONTANEOUS RUPTURE OF HEPATOCELLULAR CARCINOMA: A SOUTH-ASIAN EXPERIENCE

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Objective: Spontaneous rupture of hepatocellular carcinoma (HCC) is a potentially life-threatening complication with variable presentation. However, no data is available from Pakistan. Objectives To evaluate the Clinicopathological characteristics, treatment outcome and survival of patients presented with spontaneously ruptured HCC treated with or without transarterial embolization (TAE).

Method: This was a retrospective cross sectional study. Patients= 18 years, already diagnosed to have HCC, admitted to Aga Khan University Hospital during 2006-2011 were identified by using ICD code 1550. Those who presented with spontaneous rupture

of HCC were analyzed. The primary outcome measure was control of bleeding. Secondary outcome measures were in-hospital mortality, 30-days mortality & overall survival. **Results:** Out of 850 patients, 12 patients were diagnosed with spontaneously ruptured HCC. Mean age was 64.6±13.52 years and 91.7% were males. The underlying cause of cirrhosis was HCV and HBV in 10(83.3%) and 1(8.3%) cases respectively. The mean Child-Pugh score was 10.17± 3.32 and MELD score was 17.58± 5.97. Most of them presented with sudden abdominal pain(75%), abdominal distension with ascites(75%), hemoperitoneum(58.3%), symptoms of acute anemia(83.3%) and hypovolemic shock(41.7%). The mean tumor diameter was 7.66±3.71cm (range 2.6-15cm). The lesion was solitary in 2(10%), paucifocal in 1(8.3%), multifocal in 7(58.3) and massive/infiltrative in 2(16.7%). Furthermore, 9(75%) of patients had advanced HCC. PVT & extrahepatic spread was found in 5(41.7%) and 5(41.7%) cases respectively. A total of 4(33.3%), 6(50%) and 2(16.7%) patients were treated conservatively, underwent transcatheter arterial embolization(TAE) and transarterial chemoembolization(TACE). Success rate for control of bleeding via TAE/TACE was higher than conservative treatment(87.5%vs.25%). Overall median survival time was longer for patients treated with TAE/TACE(45days, range 2-240 vs.7.50days, range3-13) as compared to those who were treated conservatively. In-hospital mortality was significantly lower in TAE/TACE group(87.5% vs.00%, p 0.01). Although the difference was not statistically significant, 30 days mortality was lower in patients treated with TAE/TACE (37.5%vs.100, p 0.07).

Conclusion: Ruptured hematoma is a life threatening complication requiring early diagnosis and treatment. Transcatheter arterial embolization is an effective and well-tolerated treatment in the management of hemoperitoneum associated with ruptured hepatocellular carcinoma.

Keywords: Ruptured hepatocellular carcinoma, Transarterial embolization, Pakistan

7.29

ADJUSTED BLOOD REQUIREMENT INDEX (ABRI) AS AN INDICATOR OF FAILURE TO CONTROL VARICEAL BLEED

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Objective: Acute variceal hemorrhage is common in patients with chronic liver disease. This medical emergency has a five day mortality worldwide. ABRI has been suggested as an independent tool in predicting failure to control bleeding. The aim of this study was to ascertain whether ABRI had any value in predicting failure to control variceal bleed. Also, we looked to assess whether there was any correlation between ABRI and complications of variceal bleed.

Method: CLD patients with acute variceal bleed presenting to AKUH were selected and a self designed questionnaire was filled out. Patients were then followed up for complications. **Results:** In the study, 48 (69%) patients were males and 21 (31%) females. 53 (75.7%) were diagnosed with hepatitis C, 5 (7.1%) hepatitis B and 12 (17.1%) non-B-non-C hepatitis. 63

(90%) presented with active bleeding of which in 62 (88.2%) patients hemostasis was successfully secured. ABRI score was 0.66 +/- 0.89 while median was 0.43. In 42 (70%) patients endoscopy was done 12 hours after onset of symptoms. Patients who had an ABRI score of < 0.5, 5 (45.5%) had rebleeding, 4 (36.4%) had ascites and 2 (18.2%) had PSE. Of those with score >0.5, 7 (43.8%) had rebleeding, 6 (37.5%) had ascites and 3 (18.8%) had PSE. There was a significant association between increased ABRI score and heart rate < 100 (ABRI >0.5 and >0.75).

Conclusion: ABRI has no significant value in predicting failure to control bleeding. There is no significant correlation between ABRI and patient's initial Hct or number of packed cells transfused.

Keywords: Cirrhosis, varices, hepatitis

7.31

CYSTIC ARTERY PSEUDOANEURYSM AS A CAUSE OF HEMOBILIA IN ACUTE CHOLECYSTITIS

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Objective: Acute cholecystitis is a very common condition in our day to day practice but underlying pseudoaneurysm may be life threatening if not treated urgently. This report will help the physician to have high index of suspicion in haemodynamically unstable patients presenting as acute cholecystitis especially with unusual radiological findings. Haemobilia is a rare condition 1 and is defined as bleeding from biliary tree which may remain asymptomatic or present as malena or hematemesis. Most common cause of haemobilia is liver trauma. 2 Other less frequent causes may be post cholecystitis, postpancreatitis, 3 postlaparoscopic cholecystectomy, hepatic and biliary neoplasm or bleeding problems (polyarteritis nodosa and haemophilia). 3 Cystic artery pseudo aneurysm is a very rare cause of haemobilia and only 16 cases are reported in literature to date. Here we present case of cystic artery pseudo aneurysm as a result of acute cholecystitis.

Method: Case report

Results: Patient underwent angiography followed by angio embolization of cystic artery aneurysm. He had interval cholecystectomy. Postoperatively patient recovered well and was doing well after 4 months of surgery (lost to follow-up for 3 months).

Conclusion: Interventional radiology has a promising role in managing unstable patients. • For complete recovery, patient must undergo interval cholecystectomy. • High index of suspicion is one of the most important factors for good outcome in this fatal condition.

Keywords: Cystic artery pseudoaneurysm, angioembolization, hemobilia

8.1 MISCONCEPTIONS IN STUDENTS: HOW TO RESOLVE THEM?

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Objective: The objective of this paper is to define why misconceptions usually occur in students and the stages to rectify.

Method: This paper discusses how misconceptions originate in students.

Results: This paper projects how misconceptions in students are resolved in current circumstances through a more elucidated and a better five-step process known as ECIRR (Elicit-Confront-Identify-Resolve-Reinforce) model.

Conclusion: It is evident through this model that teacher facilitation is definite in defining and resolving the misconceptions in students, however, the strength of this model is truly impressive. This paper provides the background that why students develop misconceptions and how to resolve them in an increasingly complex world.

Keywords: Students, Misconcepts, Rectify

8.2 POSSIBILITY OF COMPETENCY-BASED FRAMEWORK IN PAKISTANI CONTEXT

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Objective: The objective of this paper is twofold: Analysing the Competency-Based framework and to describe the possibility of its application at post-graduate medical education in Pakistan.

Method: This paper rules out the feasibility of this competency based model to be adapted in Pakistani context.

Results: This paper projects that competency-based training is no doubt an evolutionary step imparting the concept of 'learning to competence' in a physician, and dispelling the notion that simply attending the academic training updates the physician. This model of training leads to flexible training for individuals, transparent standards and increased accountability to public.

Conclusion: This model of training may help and improve, or at least verify, the quality of education and the function of our training programs. To facilitate the transition of competency-based approach we should initiate with the pilot projects that can further be expanded and applied across the nation's training programs. The purpose of adopting this competency-based model is not to actually reduce the years in residency, but primarily is the proof of competency and secondly cost saving.

Keywords: Competency-based framework, learner, Pakistan

8.3 INSIGHT ON HEALTH PROFESSIONS EDUCATION PROGRAM

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Objective: This paper attempts to define the characteristics of the Health Professions Education Program offered by CPSP.

Method: The approach adopted within this discourse is focussing on the vision of the MCPS Health Professions Education (HPE) course.

Results: This paper has made a successful attempt in describing the overall strengths and weaknesses of the program.

Conclusion: This unique diploma program offered by College of Physicians and Surgeons Pakistan aims at equipping participants with the intellectual means needed to provide basic education to health care professionals in the area of medical teaching, learning and educational leadership. Health Professions Education program of the College of Physicians and Surgeons Pakistan is a novel concept in our part of the world, as the field of health professions is evolving and expanding throughout the world.

Keywords: Novice, CPSP, Health Professions Education

8.4 ORIENTATION IMPACT ON THE PROFESSIONAL GROWTH OF NOVICE FACULTIES

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Objective: Faculty orientation program is alliance with institutional practices, philosophy and principles that endorse educational development and improve the quality of education as in developing countries this has been a major concern for everyone. It provides "road map" to the novice faculty members as they are not fully prepared for commencing this new role. Formal orientation which is consistent and pertinent with the principle and norms of university helps to overcome the challenges of transition and enhance faculty development.

Method: This study was conducted to identify the need of formal, comprehensive orientation program for newly hired faculty and its impact on their professional development. To know the findings that at which extent orientation enables faculties to grow professionally and its immediate need to provide orientation package at AKUSON level, in order to promote core competency in their practices and to increase the productivity and effectiveness of institution. This study was conducted at AKUSON. It follows the quantitative paradigm and structured questionnaire was developed to collect the data. Focused group sampling method was done.

Results: The study suggests some important findings related to role of orientation in the professional development of novice faculty members. Formal and comprehensive orientation has been great support for enhancing their professional development and help to increase confidence in performance, and promotion perspective and reduction in stress level of faculty member.

Conclusion: Structured orientation program assist faculty members to become a successful educator and to promote job satisfaction.

Keywords: novice faculty, orientation, professional growth

8.5**IS THERE A RELATIONSHIP BETWEEN ATTENDANCE IN LABORATORY SESSIONS AND STUDENT'S ACHIEVEMENT SCORES IN OSPE**

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Objective: Aga Khan University adopted the hybrid Problem Based Learning (PBL) curriculum in 2002. Students are given clinical scenarios to learn Basic Science objectives by following 'strategically' placed triggers in the cases. Teaching strategies include PBL, large class format sessions, laboratory sessions and Anatomy tutorial sessions to reinforce learning through main PBL mode of learning. Assessment of basic science objectives is also multi-modal and student's knowledge of the basic sciences is tested through 'Best Choice questions', 'Short Answer Questions', 'Objective Structured Practical Examinations' and structured viva voce examination. There are no studies to show the correlation between student's performance in the OSPE and their attendance in the Physiology laboratory sessions. Our hypothesis is that those students who attend Physiology laboratory sessions regularly perform better in OSPE compared with those who are not so regular. In this study our objective is to relate the student's attendance in physiology laboratory sessions with their achievement scores in the physiology OSPE.

Method: A total of about 100 medical students, all from the same class, were followed for their attendance in their physiology practical sessions and the scores in the end of the module OSPE for one full calendar year in their years I and II of the Medical College studies. Four modules of the Year I (Blood & Inflammation, Gastrointestinal, Cardio-vascular/Respiration and Renal) and two modules of the Year II (Musculo-skeletal and Neurosciences) having Physiology practical sessions in them were included in this study. Data from all the 100 students could only be used for the analysis of 3 modules i.e. Blood & Inflammation, Gastrointestinal and Cardio-vascular/Respiration. In rest of the modules due to various reasons, 99 students took the exam, except in Neurosciences where 98 students sat in the OSPE. Data entry and statistical analyses were performed using SPSS program. Normality assumption was assessed for scores and laboratory attendance for different modules. Spearman's rank correlation was used to assess the strength and direction of relationship between scores and laboratory attendance for each module and overall. A p-value of less than 0.05 was treated as significant. Scatter plot between overall average score and overall average attendance was also made.

Results: There was a 'very weak' to 'weak' relationship between scores of students in different modules and their respective laboratory attendance. Module wise Spearman's correlations and significance (p-value) were calculated, and a Scatter plot between average overall scores and attendance in the physiology laboratory was also formed.

Conclusion: There is hardly any relationship between attendance in different modules and their respective scores in the OSPE. Further more detailed scientific studies are required to observe the assessment of OSPE and also the identification of factors that influence the scores of individuals.

Keywords: Relationship Between Attendance and Achievement

8.6**ASSESSING THE QUALITY OF CLINICAL SKILLS ASSESSMENT – THE AGA KHAN UNIVERSITY (AKU) EXPERIENCE**

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Objective: Clinical skills are commonly assessed through Objective Structured Clinical Examinations (OSCE) or Work-Based Assessments like Mini Clinical Evaluation Exercise (Mini-CEX) and Direct Observation of Procedural Skills (DOPS). These assessment methods use itemized instruments using a checklist or a rating scale usually with a global rating at the end. Assessing the quality of these instruments is necessary to ensure that the assessment is valid, reliable and fair. The objective of this study is to evaluate and improve the quality of OSCE stations at AKU.

Method: Fifteen stations, using a 7-point rating-scale with global-ratings, administered in MBBS Year 2 OSCE are studied. In addition to the reliability of the stations, inter-grade discrimination and the coefficient of determination are calculated using the station mean scores and global ratings to validate the items and global ratings.

Results: The reliability of the stations ranged between 0.5 and 0.9. The inter-grade discrimination ranged between 4.5 to 13.1%. The coefficient of determination ranged from 0.44 to 0.91. **Conclusion:** Inter-grade discrimination is found to be in the acceptable range. Thirteen of the fifteen stations has coefficient of determination in the acceptable range, i.e. 0.5 or above. The two stations with lower coefficient of determination when studied in detail are found to require improvement in the items. Inter-grade discrimination and coefficient of determination are found to be useful and can be used to ensure the quality of the instruments for clinical skills assessment and identify gaps for improvement.

Keywords: OSCE, Psychometrics, Assessment

8.7**MEDICAL STUDENT ATTITUDES AND BEHAVIOURS REGARDING ACADEMIC MISCONDUCT**

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

Method: Following approval from the Ethical Review Committee and Office of the Registrar, Aga Khan University (AKU), and informed consent of the participants, medical students from all years at AKU were asked to anonymously complete a brief survey. The survey presented 15 statements followed by related questions designed to query attitudes and behaviours regarding

plagiarism, lying, cheating and falsifying documentation. *Results:* Preliminary results of the survey completed by 254 students reveal that most students can identify what constitutes cheating and stealing, but not plagiarism. Importantly, ability to identify acts of academic misconduct does not deter students from engaging in the behaviour themselves. For example, while 87% of the students thought it was wrong to cheat in an examination, 24% said they had cheated previously or would consider doing the same. Only 53% of the students consider it wrong to copy from a website without referencing it, while 26% had done or would consider doing the same.

Conclusion: While many students identify and refrain from academic misconduct, several others believe that strict policies force them to indulge in and accept academic misconduct. The results of this study may be used to inform curriculum and policy matters, to address academic misconduct within the medical school setting.

Keywords: bioethics, medical education, academic misconduct

8.9 TEACHING DUTIES, METHODOLOGIES AND REWARDS IN RADIOLOGY UNDERGRADUATE MEDICAL EDUCATION: A PERSPECTIVE FROM RADIOLOGICAL ACADEMIA OF PAKISTAN.

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Objective: Dedicated radiology teaching has shown improvement in the medical students' performance in image interpretation in the North American and British studies. No study has been conducted in Pakistan to demonstrate an academic framework of radiology medical education at an undergraduate level. We aimed to document and compare current level of teaching duties, teaching methodologies and teaching rewards among radiologists and residents in private and public teaching hospitals. *Method:* A survey was conducted among all 121 radiologists and residents in two private and two public teaching hospitals in Karachi, Pakistan. Self-administered questionnaires were collected from 95 participants. Questionnaire addressed information regarding teaching duties, methods and rewards. *Results:* The overall response-rate was 78.51% (95/121). All of the radiologists were involved in teaching residents and medical students; however, only 36% reported formal training for teaching skills. Although most of the respondents (76%) agreed that medical students appeared enthusiastic in learning radiology, the time spent on teaching medical students was less than 5 hours/week (82%). The time spent on teaching material preparation was less than 5 hours/week as well. Gender of the respondent was found to have a significant association for teaching residents (p -value= 0.001) but not undergraduate medical students (p -value= 0.484). Only 37% of all respondents preferred dedicated clerkships over distributed clerkships (41%). The most common overall teaching methodology was one-to-one interaction. Teaching via radiology films (86%) was the most frequent mode of instruction. Salary (59%) was the most common teaching reward. Majority of the respondents (88%) were not satisfied with their current level of teaching rewards.

Conclusion: Radiologists showed a positive attitude towards teaching radiology to medical students. However, residents were preferred for teaching purposes. Teaching methodologies differed significantly among private and public teaching hospitals. Due to a very low satisfaction among all respondents, efforts should be made to provide satisfying teaching rewards.

Keywords: Radiology, Medical Students, Teaching

8.10 EFFECT OF A FORMAL INTERVENTION TO ENHANCE THE EDUCATORS ABILITY FOR PROMOTING CRITICAL THINKING IN THEIR CLASSROOM DISCOURSES

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Objective: Literature reveals that educators find it too challenging foster critical thinking in their students if they have not learnt how to use critical thinking in their educational system and training. This paper reports finding from a national research project that was undertaken to enhance the educator's ability to promote critical thinking in their teaching practices. *Method:* Using a randomized control trial design, 91 educators from 14 schools of nursing in Pakistan consented to enroll in the study. Out of that 44 participants were randomly allocated to the intervention group who were invited to participate in two workshops on critical thinking. Data was collected, pre and post intervention, on the educators' teaching practices through classroom observations on a structured checklist, tape recording of teachers' questioning, and field notes. The duration of the observations was 45-60 minutes. Of the 44 participants, 39 educators attended the workshops; however, only 36 participants were available for the post-intervention data. Descriptive statistics were computed for data obtained through the structured checklist and the teachers' level of questioning on Bloom's Taxonomy for cognitive thinking.

Results: Compared with pre-intervention data, findings from the post intervention data revealed several positive changes in the classroom discourses including an increase in the higher level questioning and decrease in the lower level questioning by the teacher, facilitative teacher-student interaction and use of multiple teaching strategies. Although all the changes were *Results:* : Compared with pre-intervention data, findings from the post intervention data revealed several positive changes in the classroom discourses including an increase in the higher level questioning and decrease in the lower level questioning by the teacher, facilitative teacher-student interaction and use of multiple teaching strategies. Although all the changes were not found significant statistically, all of the noted changes are thought to promote critical thinking among students. *Conclusion:* This study offers evidence to support that some formal training to enhance the educators' critical thinking skills is help to promote critical thinking in their teaching practices.

Keywords: Critical thinking skills, Teacher education, classroom questioning

8.12**OCCUPATIONAL STRESS AMONGST RADIOGRAPHERS: DOES WORKING IN PRIVATE OR GOVERNMENT HOSPITALS MAKE A DIFFERENCE?**

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Objective: Stress is a common prevalent mental condition. Literature indicates that the prevalence and impact of stress among radiographers is high. No study has been written that focuses on the factors causing stress in radiographers. For the first time in Pakistan we want to evaluate the stress among radiographers. Our study encompasses the difference of stress levels in radiographer working in private and government hospital setups.

Method: We conducted a cross-sectional study of two government (JPMC & Civil) and two private (Aga Khan University & Ziauddin University) hospitals' radiology departments. 20 radiographers were randomly selected from each hospital. Results were compiled from questionnaires.

Results: Of 140 questionnaires that were sent out 106 (75.7%) responded, 15(10.7%) did not responded and 19(13.5%) forms received were not completed. Of the 80 participants in private & government hospitals 70 (87.5%) were satisfied and 10 (12.5%) were not satisfied with their work. In government, sector job satisfaction level was higher than in private sector. The stress level was high in private sector and lower in government sector. Workload, low salary scale and lack of staff were major factors associated with stress. Sports/exercise and eating are the main factors to release stress.

Conclusion: We found more stress in private because of excess workload, long working hours, and low salary scale and staff shortage as causes of low satisfaction and high stress in participants.

Keywords: Insomnia, Fatigue

8.13**COMPARISON OF MRI KNEE WITH PLAIN FILMS OF PATIENTS WITH NON-SPECIFIC KNEE PAIN**

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Objective: The role of imaging of knee is an important adjunct to clinical examination. Symptoms such as pain, swelling, locking and mechanical stiffness are often reported by patients and can make an accurate diagnosis difficult by clinical examination in isolation. The purpose of the study is to evaluate the efficacy of MRI knee in comparison with plain film of patients presenting with non-specific knee pain

Method: This multicentre study was carried out between Jan 2009 to Dec 2009 in two tertiary care hospitals in Karachi. Retrospective comparison study of MRI knee with plain radiography of the knee in patients with non-specific knee pain was undertaken. Data were collected from RIS (Radiology information system) Ziauddin university hospital, and Aga Khan University hospital. Karachi Pakistan. We randomly selected

200 patients who presented with non-specific knee pain. All the patients had a standard radiographic examination of the knee employing anteroposterior and lateral projections and then an MRI examination. The corresponding pair of reports was analyzed and a comparison was made between the two.

Results: For the radiographic examination, abnormalities were reported in 30 (15%) cases. The remaining 170 (85%) cases were reported as normal. For the corresponding MRI examinations, abnormalities were reported in 87 (43.5%), out of the 170 patient's they were mainly intra-capsular lesions of various types. There was no incident when the radiographic examination revealed an abnormality and the MRI examination did not.

Conclusion: MRI is the most accurate diagnostic imaging method in patients presenting with knee pain and suspected internal derangement. This study has demonstrated that patients with non-specific knee pain imaged with plain radiography will have a very high probability of a negative finding and an unnecessary dose of radiation irrespective of any soft-tissue anatomical derangement present.

Keywords:

8.14**USES OF PINEAPPLE JUICE AS A NEGATIVE ORAL CONTRAST AGENT IN MAGNETIC RESONANCE CHOLANGIOPANCREATOGRAPHY (MRCP)**

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Objective: Uses of Pineapple juice as a negative oral contrast agent in magnetic Resonance cholangiopancreatography

Method: It was a retrospective study. Total numbers of patients are 10. Patients are required to fast for 6 to 8 hours before the examination, to permit gall bladder filling and promote gastric emptying. Pre-contrast images (pineapple juice) and after 15 minutes post-contrast (pineapple juice) images were obtained oral administration of 250 ml of commercially available pineapple juice. All MRCP studies were performed with technique using a heavily T2 weighted turbo spin echo (TSE) sequence is currently one of the most widely used multilane 3-d MR technique, having a high spatial resolution and fast imaging capacity.

Results: Images were evaluated by senior Radiologist. In seven patient (70%) images were degraded by fluid in GI tract on post contrast images clear anatomy, pathology and helpful for the Radiologist.

Conclusion: Pineapple juice is an affordable, cheap, available, safe and efficient oral negative contrast agent for MRCP which reduce the signal intensity of fluids in the gastrointestinal tract. There were marked improvements in contrast and image between pre and post images.

Keywords:

8.15

PROMOTION OF CLINICAL RADIOLOGY RESEARCH IN OUR TEACHING HOSPITALS: VIEWPOINT FROM PAKISTAN

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Objective: Today, evidence based medicine is the standard for clinical practice in radiology. This evidence is retrieved from research studies and scientific medical literature – signifying the importance of research in clinical radiology. We primarily aimed to determine the current status of academic radiology in Pakistan. A component of our project intended to determine the current level of research promotion in clinical radiology in Pakistan.

Method: Using self-administered questionnaires, we surveyed radiologists and residents of four major teaching hospitals in Karachi, Pakistan. We recruited all available radiologists and residents from two private and two public teaching hospitals (n=95).

Results: A high level of research promotion was observed among all respondents (n=70/95, 74%). It was significantly higher for radiologists than residents (97% vs. 57%). Private teaching hospitals promote radiology research significantly as compared to public teaching hospitals (80% vs. 62%). Fellows and residents were the most preferred groups for research in private and public teaching hospitals, respectively. This can be explained by lack of enough fellowship positions in public institutes. An almost equal number of radiologists in private and public teaching hospitals involve medical students in radiology research projects (42% vs. 38%). However, residents in private teaching hospitals are more likely to involve students in their research than their colleagues in public teaching hospitals (50% vs 31%). Three sub-groups of medical students were identified in our survey: students rotating in radiology clerkships, volunteers, and elective medical students. The latter group was least preferred by the respondents. This may be explained by a shorter duration of contact with faculty and residents while students are on electives, when compared to other two sub-groups. Although a low level of radiology research production from Pakistan has been reported, we observed a high level of promotion of research activities in our participating teaching hospitals. This may suggest a discrepancy in promotion of research, and production of results from our research projects. Research was promoted significantly higher in private institutes compared to public institutes. This is consistent with a previous study which assessed clinical radiology research in Pakistan.

Conclusion: In conclusion, a high level of research promotion in radiology has been observed in our teaching hospitals. Research was promoted significantly higher in private institutes. Fellows and residents are significantly preferred than medical students for such purposes.

Keywords: Radiology, Research, Pakistan

8.16

FACTORS INFLUENCING TRAINEE RADIOGRAPHERS' CHOICES IN CONSIDERING RURAL RADIOGRAPHY CAREER

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Objective: The objective of our study is to identify the Factors that should be instituted to attract and retain student radiographer in rural areas.

Method: It was a cross sectional study conducted at The Aga Khan University Hospital and Ziauddin University Hospital training period of 2008 to 2010. Total 37 trainee radiographer participated from both campus were included in this study. Out of 37 trainee radiographer 65 % (24) were the Aga Khan University and Hospital and 35% (13) were the Ziauddin University Hospital. Majority of the student said to will to work in rural areas. Data was collected through a questionnaire and recorded on preset Performa and was subsequently entered and analyzed using SPSS version 17.

Results: The factor that are associated to retain student radiographer in rural areas includes, providing good environment, Handsome salary ,best equipment , accommodation free transport and medical facility.Earliar consideration for promotion and provision of recreational facility. Out of 37 participated students 51 %were female and 49 % were male. Interest of rural radiography both campus Aga khan and Ziauddin Hospital 79 % strongly agree and 21% disagree.

Conclusion: This Study has shown the student consider working in rural areas provided the working conditions are improved upon. By this study we came to know if you provide hand some salary and good working environment to the radiographer who trained in the well equipped department on tertiary care hospital will provide their services to rural area.

Keywords:

8.18

USEFULNESS OF INITIAL MRI SCREENING FORM

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Objective: To evaluate and determine the importance and benefits of initial MRI Screening form.

Method: A retrospective study was carried out at the MRI section Aga Khan University Hospital from Jan 2010 to Jun 2010. 3870 examinations were performed during this time period. Pre-Screening forms were filled by all the patients.

Results: On the basis of MRI screening forms 16 out of 3870 (0.41%) patients were cancelled due to following reasons. Cardiac pacemaker: 03 patients Cardiac stent 01, Metallic fragments 03 patients, Bomb blast injury 02 patients Bullet injury 03 patients, Metallic implant 04 patient

Conclusion: This Study has shown the efficacy of MRI pre-screening form it's very important before MRI procedure. It prevents patients from hazards of magnetic field.

Keywords: MRI, screening

8.19 TEACHING OF THE SOCIAL DETERMINANTS OF HEALTH IN MEDICAL AND NURSING EDUCATION: STRATEGIES AND CHALLENGES

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Khan University, Karachi*

Objective: The purpose of this paper is to discuss the growing need to develop medical and nursing curriculum in a way that could enhance health personals' understanding to the disease etiology in a broader horizon of bio-psychosocial model making them able to realize the sensitivity of human health to the social environment and to the social determinants of health.

Method: The approach adopted within this discourse is to focus that the health-care sector has an important stewardship role in efforts meant to bring health equity within a society. However this role can be effectively played only if professionals and policy-makers in the health-care sector could understand how social determinants influence health and transform patterns of mortality and morbidity in a community.

Results: Challenges have been identified and the difficulties faced by the students and medical faculty in appreciating relevance of social sciences to clinical practice have been addressed.
Conclusion: Medical faculty should adopt an integrative approach to the learning of biomedical, behavioral, and social sciences using Engel's biopsychosocial model as a link between the social sciences and the clinical practice. Unlike the biomedical model of clinical reasoning, the biopsychosocial model accommodates the observed associations between life events and morbidity and physicians' decision-making techniques and patients' health outcomes. Identification of challenges and incorporation of evidence based strategies in medical and nursing programs could be a way forward to give prevention and health promotion a more prominent place in health care delivery system.

Keywords: Social determinants, Engel's model, Medical Education

8.20 IMPRTANCE OF ANATOMY CLASSES FOR STUDENT RADIOGRAPHER

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Objective: The anatomy is the key subject in the curriculum of student radiographer. The aim of this study is to evaluate and analyze the importance and purpose of the anatomy classes among the student radiographer.

Method: It was a cross sectional descriptive study. This study was conducted in Aga Khan University hospital and Ziauddin hospital. This study recruited 39 students' radiographers, out of which 23 were female and 16 were male students who attended the radiography programs from July 2007 to 2009 and from July 2008 to 2010 batches. Out of 39 students, 15 students were selected randomly from each hospital. Data was collected from examination department of both hospitals. Data was recorded, entered and analyzed using SPSS version 17.

Results: Over all anatomy results percentage of both hospitals were 80%. Male students radiographer anatomy result percentage were 66% and female result percentage were 76%. The result of A tertiary hospital is greater 85% than result of B tertiary hospital was 75%. Female radiographer result was high than male radiographer in both.

Conclusion: Through this study we observed that the result of A tertiary care hospital was high than result of B tertiary care hospital. Because the education level was high in A university students other than B university, A university 'student admission requirement is B.Sc (bachelor of Science) and B university 'student admission requirement is Intermediate. And attendance is more important factor because A university 'student attendance level is high than B university 'student.

Keywords:

8.21 STUDENTS' PERSPECTIVE OF THE EMERGENCY MEDICINE ROTATION AT A UNIVERSITY HOSPITAL IN PAKISTAN: QUALITATIVE ANALYSIS

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Objective: The aim of this study was to evaluate the emergency medicine clerkship in the words of the final year students.

Method: The study took place at the Aga Khan University which is a tertiary care hospital. Themes were extracted from open ended questions in the evaluation form. A total population of 71 students was selected. All of the data was entered into the program NVivo v.2.

Results: Six nodes were included from the coding tree: Importance of Acute Cardiac Life Support, Academic Sessions Rating, Trainers Assessment, Duration of the Rotation, Areas of Improvement and Overall Rating of the Rotation. The majority of the students were satisfied with their Acute Cardiac Life Support training. Most of the comments on trainers were positive. Overall, everyone wanted a longer Emergency Medicine rotation with stress on the need for learning skills and procedures. We noted a need for a better evaluation tool and a set of learning objectives that could be practically tracked over the course of the four weeks. Nevertheless, this rotation was almost unanimously ranked as the best learning experience that the students had in five years of medical college and that its overall structure was great.

Conclusion: This study brings to light several important facts that define students' learning in Emergency Medicine at the Aga Khan University. We need to increase Emergency Department exposure, introduce procedure logs, make smaller groups for academic sessions and create a robust student evaluation system. We should also integrate emergency medicine training earlier in the student years.

Keywords: clerkship, emergency medicine, curriculum

8.22

DIFFERENCES IN CHARACTERISTICS OF CLINICAL SUPERVISION (CS) BETWEEN CPSP MEMBERSHIP AND FELLOWSHIP TRAINING PROGRAMS

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Objective: Clinical Supervision has a vital role in CPSP training programs. Supervision by the supervisor is a multifaceted role which occurs in a variety of settings with diverse functions and modes of delivery. Literature review shows that this area has been the least investigated aspect of clinical education in medicine across the world. Few multispecialty reviews do exist in literature but no studies have queried the residents regarding the nature and adequacy of their CS. CPSP approved Supervisor and the Postgraduate Trainee has a shared relationship. It is expected that the Trainee and the Supervisor will maintain a professional relationship at all times. It is further expected that the Trainee and the Supervisor will be cognizant of, and abide by, the standards and guidelines of the CPSP. The purpose of this study was to assess the current status of clinical supervision in CPSP training programs on a national level and to make a comparison of the attributes of clinical supervision between Fellowship and Membership programmes.

Method: A cross sectional survey was done and a survey questionnaire was distributed after having informed, to all the postgraduate trainees in each clinical and basic science discipline throughout the CPSP regional centres from August to October 2010 to be filled by each trainee attending the scheduled workshops in respective regional centre. A total of n= 274 completed forms were received back. Data was analyzed on SPSS 11.0. Student t-test was applied to compare mean difference of responses for satisfaction in different areas. Chi square test was applied comparing other parameters.

Results: The satisfaction level regarding supervision of trainees in both the training programs was not significant with a standard deviation of +1 in most of the areas except for a few. 25-36% of MCPS and 24-38% FCPS trainees were satisfied with the various settings of their clinical teaching sessions like theater, grand rounds wards, clinics and including the frequency of various teaching sessions. The different roles that a supervisor has to play (in areas such as his /her availability, patient care, career counseling, signing of log book regularly, support in writing synopsis etc) lead to satisfaction of 24-35% of FCPS trainees and only 35-40% for MCPS trainees.

Conclusion: The relationship between the supervisor and the trainee plays an important role in promoting the trainees' objectives. The satisfaction level of the trainees with the supervisor and their teaching has no significant effect regardless of the training program. The quality of supervision provided maybe the most important factor for effective supervision. It is evident from literature that CS plays a positive role in patient care. The gaps identified in CS shall serve to develop recommendations for strengthening the CS in CPSP training programs.

Keywords: clinical supervision, trainee, medical education

8.23

INTRODFUCTION OF E LEARNING INTO THE POST RN BSCN PROGRAM: A PILOT STUDY

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Objective: AKDN is developing an E learning strategy. In 2010 as part of the annual Goals and Objectives exercise, AKUSON decided that Post RN program would be used as a pilot and offered through blended learning; using both distance learning and face to face interaction in 2014. AKU-SON has found that there are many Diploma Alumni who would like to pursue this BScN in light of USA Nursing Board regulations that a BScN will be the entry-to-practice requirement from 2012 onwards. Offering such a program will also assist our international students, who can complete their coursework through blended learning and complete their clinical requirements in their home-country (under guided supervision from an AKU faculty). Furthermore, at present there is no E-learning program at the national level for a Post-RN Programme. Objectives: In order to bring this mandate forward the NU444 Senior Elective was pilot tested using a blended approach and a trio model consisting of student, preceptor and faculty between May and July 2011. *Method:* NU 444 Senior Elective course was delivered through a blended delivery approach to test out e- learning strategy by using Moodle. The existing course was reviewed. Students' feedback was elicited before, during and at the end of the course. In addition, faculty development for moodle and use of e-portfolio was organized. Meetings were held with content and technical experts periodically. Final approval came from the curriculum committee.

Results: The pilot study concluded that in order to carry this project forward the following is required: (1) Full-time IT personnel dedicated to this project; (2) Protected time for the faculty to conduct the planning and implementation of this program (includes a needs assessment and follow-up activities); and (3) close work with our partners (University of Alberta or McMaster University) who can assist with developing required materials

Conclusion: The lesson learnt will then be utilized to plan for the E learning program at the national level in Pakistan and wherever AKU is located As a first step in developing the capacity of faculty in E-learning, a training is being organized from Sep 2011-May 2012 at AKU for which faculty have already been identified. A partnership with Open University (OU) is being considered which can help AKU-SON further develop its expertise in E-Learning by building the capacity of faculty. In order to take this partnership further, potential areas of mutual interest and collaboration need to be explored and discussed with Open University.

Keywords: e-learning, baccalaureate education, teaching pedagogy

8.24 ACQUIRING PROCEDURAL SKILLS IN INTERNAL MEDICINE: WHAT DO RESIDENTS EXPECT?

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Objective: Procedural skills training forms an essential yet difficult to assess component of an Internal Medicine Residency Program. We, report the development of our own process of documentation and assessment of procedural skills training. *Method:* A survey was conducted within the Department of Internal Medicine at The Aga Khan University Hospital, Karachi in order to determine the optimal number of procedures needed to be performed by residents at each year of residency. Respondents included both faculty and residents in the Department. Thereafter the responses were analyzed with the expert opinion of a focus group in cases of discordant responses. *Results:* A total of 64 responses were obtained of which about 70% consisted of resident responses. Focus group's assistance was taken on a total of 8 procedures due to difference in responses of faculty and residents.

Conclusion: Program guidelines were formulated and a logbook has been designed which will facilitate the assessment of the procedures performed at the facility by the residents. Since this is a novel step in our region of the world, these guidelines can serve as a tool for other programs in the country and region for the evaluation and assessment of procedural skills in Internal Medicine residency programs.

Keywords: Procedural skills, Internal Medicine, Residency

8.25 360-DEGREE EVALUATION OF RESIDENTS ON COMMUNICATION & INTERPERSONAL SKILLS; INTER- RATER VARIATION IN JUDGMENT

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Objective: Effective communication and interpersonal skills are key components for the optimal performance of any health care professional. Developing these skills is an integral part of residency training. Residency programs are adopting various methods to assess how well their trainees can interact with patients and coworkers. We conducted 360-degree evaluations of all our residents to assess their interpersonal and communication skills. The measurement properties of the multi-source ratings were investigated.

Method: A cross-sectional survey of 49 of the residents currently enrolled in our Internal Medicine residency program at Aga Khan University Hospital was conducted. Using a 360 degree evaluation technique, every resident was evaluated by eight other co-workers who they had interacted with in the past six months. A self evaluation was also completed.

Results: We received a total of 367 completed forms for the 360 degree evaluations (response rate of 83.2%). Comparing mean scores, we found a statistically significant difference between the ratings given by the nurses and the faculty (p-value 0.0003).

On average, the mean resident self-assessment scores were significantly lower than those provided by faculty (p-value 0.0003).

Conclusion: The 360 degree evaluation technique is effective for measuring the communication skills of trainees. Individuals who interact with trainees on regular basis, at least in aggregate, can provide meaningful judgments of ability.

Keywords: 360 degree evaluation, feedback, Residency

8.26 EFFECTIVENESS OF SMOKING CESSATION SKILLS BUILDING WORKSHOPS IN EDUCATING SMOKING CESSATION TECHNIQUES TO PAKISTANI PHYSICIANS

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Objective: Introduction: Physician advice to quit smoking is an effective component of a smoking cessation strategy. Previously published data clearly demonstrated that education smoking cessation skills to physicians improves physicians' smoking cessation practices and increases smoking cessation rates among their patients *Objective:* To determine the effectiveness of smoking cessation skills building workshops in training of smoking cessation techniques to Pakistani physicians *Method:* Methods: Five full day smoking cessation skills building workshop have been arranged in different part of the country in which 113 physicians participated including General Practitioners (GPs) Chest Physicians, Cardiologists, Residents, and House Officers. A validated questionnaire regarding the attitude and knowledge about smoking is filled by the doctors at the registration desk before the start of the workshop. After the completion of the workshop same questionnaire was again filled by the attending doctor to record the response.

Results: Results: Total of 113 doctors attended the workshops in which 90 were males and age ranged from 22 to 61 years (mean age \pm SD is 37 \pm 11). Out of these 113, 33 doctors were GPs, 11 chest physicians, 11 cardiologists, 8 consultant physicians and 11 were house officers. After the workshop the physicians felt very confident about their knowledge to treat nicotine dependence 15.9% (pre-workshop) vs. 64.6% (post-workshop); they (physicians) seemed very confident is discussing the smoking cessation issue with their patients 52.2% vs. 80.9% and also they themselves felt them very knowledgeable regarding pharmacotherapy 9.7% vs. 49.1%. Regarding the technical knowledge of the subject response is also favorable e.g. the 5As approach answered correctly by 17.7% vs. 69.9% in pre and post workshop respectively; regarding Nicotine Replacement Therapy correct answer given were 39.8% vs. 61.1% in pre and post workshop respectively; while regarding Bupropion adverse effects 46.9% vs. 71.1% physician gave correct answer in pre and post workshop questionnaire respectively.

Conclusion: Conclusion: After attending one full day smoking cessation skills building workshop physician felt more confident in discussing the anti-smoking issue with their patient and their smoking cessation knowledge also increased significantly.

Keywords: smoking, education, workshop

8.28

ERYTHEMA ANNULARE CENTRIFUGUM SIMULATING ERYTHEMA GYRATUM REPENS.

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Objective: Introduction Numerous dermatoses produce annular lesions, many of which occur in conjunction with other lesional morphology or lead to a specific diagnosis. However there are a group of chronic, annular and figurate eruptions that do not easily lead to a specific diagnosis. We are presenting an interesting case of annular erythema. Case report A 32 yr old male presented in dermatology clinic with 9 month history of non itchy persistent rash. It first appeared on his nose then spread to his trunk and extremities. They started as a small pink raised rash which slowly enlarged and formed rings. The lesions were present on the chest, back, buttocks and legs. Skin biopsy revealed 'sleeve like' lymphohistiocytic infiltrate, which is diagnostic. Discussion A broad range of associations have been described as causes of erythema Annulare Centrifugum; some associations that have been described may be coincidental and some may be more properly categorized as unusual presentation mimicking EAC. In large majority of cases the etiology remains obscure even after prolonged observation and investigation. EAC lesions are frequently confluent and show polycyclic or figurate appearance, they rarely show the whorled pattern seen in EGR. Although both EGR and EAC are classified as reactive figurate erythema, the former has a much stronger association with internal malignancy.

Conclusion: In conclusion, a rare case of EAC presenting EGR-like concentric features without accompanying any internal malignancy is presented in this report. Our case indicates that EAC may simulate EGR suggesting a link between these two figurate erythematous

Keywords: Annular, Erythema, Gyration repens

8.29

STUDENTS PERCEPTION: TRANSITION FROM UGME YEAR I & II TO CLINICAL CLERKSHIP YEARS: READY OR NOT?

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Objective: Pre clerkship years prepare students for clinical education. Literature review shows that transition periods from Years I and II to clinical years were the prime causes of stress 1, 2, 3, 4, 5. There is evidence across the world that medical students do not feel adequately prepared for clinical practice in the clerkships with obvious changes of time table and therefore feel stressful 2, 3, 4, 5 The transition of medical students from Years I & II, which is relatively safe and secure classroom environment, to the unstructured settings of clinical years in medicine is not an easy one. Students often report several challenging aspects of this transition, including the difficulties they encounter in applying clinical knowledge, adjusting to

different clinical settings, and understanding new roles and responsibilities 3, 6. Literature shows studies on student struggling in areas when they begin their early clinical training 7, 8. The areas that are mostly identified in literature are roles and responsibilities, adjusting to culture of clinical environment, performing clinical skills, learning the logistics of how things work in clinical settings, various clinical environments, frequent change of rotations, frequent changes in staff, clinical knowledge and reasoning, methods of assessment and feedback, professional identity, self perception, self confidence, self directed and experiential learning, adjusting to culture of patient care, time management and prioritizing 2, 7, 8, 9, 10. . The five year Aga Khan University (AKU) Undergraduate Medical Curriculum is divided into two main components 1& 2 pre clerkship years and 3-5 clinical clerkship years. The undergraduate medical curriculum at AKU underwent a major revision with the introduction of problem-based learning in 2002. With this change came the brief introduction of history taking and clinical skills formally in years one and two and early introduction to clinical medicine and patient interaction by the end of year 2. Years 1 & 2 prepares with the required knowledge of starting clinical practice before they move on to Year 3. There are a total of 13 modules in the Curriculum of years 1 & 2 which consists of, of lectures, anatomy sessions, clinical skills sessions, communication skills sessions, seminars and problem-based learning. Basic sciences are integrated throughout the 5 year curriculum with more emphasis been made in Years 1 & 2. In addition assessment in clinical years is based on 15% component from basic sciences. Clinical skills in Years I and II use mannequins to practice simple procedures and examinations. Students have clinical exposure to Standardized Patients throughout Years 1 & 2 (up to 6 sessions in each module). Students have two hours of direct patient exposure by the end of Year II, once a week for eight weeks. AKU spends so much time and money into areas like establishment of the clinical skills committee, use of standardized patients, communication skills workshops etc. However the general perception among the clinical faculty and the expressed feelings of the students show that they are ill prepared for the clerkship years, moreover, for their first clerkship. The purpose of this study is to explore: 1) whether the perceptions are correct or not, 2) the student expectations of the necessary skills and their anxieties in order to develop recommendations for clinical skills committee/curriculum committee to ease the transition. **Method:** Methodology The study will be conducted at AKU. Anonymous Cross section Survey will be conducted with Year 2 Medical school students entering Year 3 with their informed consent

Results: Expected Outcome The survey will provide an insight of the student perceptions of the required attributes, skills and their anxieties while moving from pre clerkship to clinical clerkship years under two dimensions • Essential skills required • Additional skills training to ease transition The gaps will be identified in order to further develop recommendations for Curriculum Committee/ Clinical Skills to ease the transition and to develop a workshop based on the skills identified.

Conclusion: Future Step The data available will serve as needs assessment to develop strategies to bridge the gaps identified and ease the transition phase.

Keywords: UGME, clerkship

8.30**EVALUATING THE IMPACT OF STRUCTURED VERBAL FEEDBACK ON RESIDENTS' PERFORMANCE: STEP I; BASELINE DATA FOLLOWED BY FEEDBACK WORKSHOPS LEADING TO IMPLEMENTATION OF A SYSTEM OF FEEDBACK**

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Objective: Background: It has been noted that due to lack of a formal system of verbal feedback, residents at our program are unable to know their strengths and areas needing improvement in a timely manner. This problem was also noted in an external review conducted by international medical experts in 2008. Objectives: To strengthen the postgraduate program by improving the assessment and feedback system. In order to implement such a system, it was initially necessary to a)gather specific information on the how feedback is presently incorporated in the training program, and b)develop a tool to gather baseline performance data.

Method: The baseline (pre-intervention) performance of 49 residents was assessed by 360-degree evaluation using a multi-domain questionnaire. Nine different raters, including nurses, faculty, peers, unit receptionists, service coordinators and self, evaluated the residents based on their communication and interpersonal skills. During the same period, a satisfaction survey was administered to collect information on the quality of the present feedback system. Subsequently, 5 faculty workshops were conducted to improve the quality of feedback. **Results:** The baseline satisfaction survey revealed that 45% of the faculty had not provided formal verbal feedback to the residents in past 6 months. According to residents, 65% never received any formal feedback. Analysis of the 360-degree ratings indicated that there was a training level effect, indicating that experience was related to overall performance. Interestingly, there was a negative relationship between the resident self ratings and the aggregate ratings provided by others.

Conclusion: We observed that verbal feedback given by the faculty to residents was significantly lacking. We also noted that residents tend to significantly underestimate their skills and performance. The faculty themselves identified a number a challenges to feedback, that need to be addressed for its effective implementation.

Keywords: Residents, verbal feedback, internal Medicine

8.31**SELECTION OF CAREER SPECIALTY: PREFERENCES AND FACTORS AFFECTING CHOICE AMONG MEDICAL STUDENTS IN PAKISTAN**

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Dow University of Health Sciences,*

Objective: The distribution of medical professionals in various fields affects the healthcare system in a country. Currently

Pakistan has only 0.473 physicians/ 1000 population and is the third leading source of IMGs in affluent countries (1). Various variables including income, controllable lifestyle and personal passion have been found to influence specialty preferences (2, 3, 4). Our objectives were to record current career preferences and investigate factors that might influence these decisions among medical students in Pakistan, and to compare any differences between medical students in public and private sectors.

Method: A cross-sectional study was conducted by administering a self-filled questionnaire to 471 students from years 3, 4 and 5 at one private and public Medical college in Karachi.

Results: The most popular specialties included general surgery (n=196), family medicine (n=161), pediatric (n=152), cardiology (n=133) and dermatology (n=130). Personal Passion (n=380), Income (n=355), Controllable Lifestyle (n=242), Availability of Opportunities and Role Model (n=210) were the notable influencing factors. Choices were significantly affected by gender with women and men more likely to choose medical and surgical fields respectively. Private college students were significantly more likely to practice abroad.

Conclusion: In order to meet the demands for various specialties there is a need to anticipate trends among medical student preferences (5). Knowledge of the factors that impact students is integral to positively influence their career choices (5) and fill predicted gaps in demand and supply of physicians. There is a need to incentivize students from private colleges to practice in Pakistan, and to balance female and male physicians across different specialties. REFERENCES 1. Mullen F: The metrics of the Physician Brain Drain NEJM 2005;353 1810-181 2. 20 Dorsey ER, Jarjoura D, Rutecki GW: Influence of controllable lifestyle on recent trends in specialty choice by US Medical Students. JAMA 2003;290(0):1173-1178. 3. 23 Tardiff K, Cella D, Seiferth C, Perry S. Selection and change of specialties by medical school graduates. J Med education 1986;61:790-796. 4. 28 Gorenflo DW, Ruffin MT, Sheets KJ. A multivariate model for specialty preference by medical students. J Fam. Practice 1994;39:570-576.

Keywords: medical students, career choices, factors

8.32**RADIOLOGY ANGIOGRAPHIC PROCEDURE KNOWLEDGE IN STUDENT NURSES OF AGA KHAN UNIVERSITY-SCHOOL OF NURSING**

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Objective: To assess the Angiography procedure knowledge in student nurses, identify the areas of improvement and initiate education sessions.

Method: This survey was conducted by radiology department staff in collaboration with school of Nursing, Aga Khan University Hospital. A simple survey form was circulated amongst Student Nurses. The forms were collected over a period of Two weeks. Data was summarized and results were evaluated.

Results: A total of 100 forms were received. Survey revealed

that 99 % knew about angiography however only 67% were aware of non cardiac angiography. 91% responded positively about the awareness of location where non cardiac and cardiac angiography were performed but on specific inquiry regarding the location only 7 were definite about all types of angiographies including cardiac, non cardiac (Radiology) and fluorescein angiography (eye). 45 knew about cardiac and radiological angiographies and 44 only knew about cardiac angiographies. With respect to indications 47 had reasonable information and 38 had inadequate information. 55% knew about the preparation for angiography whereas 45 % were not well aware of it. 91 % were aware of post angiography procedure whereas 9% were not aware of them.

Conclusion: The results were indicative that generally student nurses are not much aware of non cardiac angiographies and procedure performed however because of extensive dealing with cardiac angiographic patients the pre and post procedure care of patients is generally satisfactory. Further rotations and lectures may be helpful in increasing awareness and increasing patient care.

Keywords: Angiography Knowledge, Student Nurses, Radiology

8.35

MRI ARTIFACTS: MECHANISM, CAUSE AND CONTROL

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Objective: Magnetic resonance imaging (MRI) is widely used in medical diagnosis for its various advantageous features, such as high-resolution capability and the ability to produce an arbitrary anatomic cross-sectional images. The purpose of this study is to show wide variety of artifacts routinely encountered on MR images. This study presents the cause, appearance, diagnostic effect, and available remedies for the artifacts that are most frequently observed on MR images and are of greatest clinical significance. Combined with routine preventive maintenance of imaging equipment, consistent quality control, and appropriate selection of imaging parameters, awareness of the manifestations of these artifacts will allow image quality and diagnostic interpretation to be optimized.

Method: The study was carried out between June 2009 to May 2010. This is a retrospective study and was conducted in MRI Suite radiology department Aga Khan University Hospital. 1.5 Tesla Avanto Siemens machine was used. Total numbers of 100 MRI examinations were randomly included and data was collected from Radiology Pacs information system AKUH. **Results:** In this study a total number of 100 exams having different type of artifact such as Chemical Shift Artifacts, Aliasing Artifacts, Zipper, Phase-encoding, Motion Artifacts, Entry Slice Phenomenon, Slice-overlap Artifacts, Moiré Fringes RF Overlap Artifacts, Susceptibility Artifacts, Zero-fill Artifact (Zebra Artifact) Effects Wrap around and others artifacts were detected. **Conclusion:** Every artifact has a different cause and can distort clinical image. Clinically significant artifacts were detected in this study.

Keywords: knee artifacts

8.37

OBSERVATION OF RADIOGRAPHER'S COMMUNICATION SKILLS:

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Objective: Communication in medical imaging is a neglected area of research, despite the necessity for good communication if optimum diagnostic images are to be achieved and the purpose is to improve sharing of information between patients and radiographer to keep front-line staff and patients better informed. **Method:** The present study has investigated the styles of communication used in medical imaging, using an approach known as Transactional Analysis. This approach has been demonstrated by using observations and supporting questionnaire with inter-rater observations of radiographer-patient interactions. **Results:** We surveyed 20 patients in each hospital & the patients remarks about the radiographer's communication skills are as follows, Communication skills 67% satisfied, 33% not satisfied 93% satisfied, 7% not satisfied

Conclusion: In our survey it was observed that radiographer's attitude, behavior & communication skills of private care hospitals were noticed much better as compared to government hospitals. There is lack of staff training & awareness regarding communication skills, patient dealing, staff and patient interaction, radiographers' areas of professional and personnel competence & others factors in government hospitals; we can fill this gap by arranging different sessions and short training courses regarding communication skills & service excellence in every health care organization.

Keywords:

8.40

INPATIENT CANNULATION IN CT – HOW MUCH SCANNER TIME IS LOST?

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Objective: Cannulation in the CT department for an inpatient may be distressing and can reduce compliance with instructions during the scan. It is better performed by the clinical team caring for the patient on the ward. If there is no CT preparation area for cannulation to be carried out it prolongs the time the patient is on the scan table, which in a busy service may compromise throughput with knock on effects on productivity and waiting lists. This audit will allow quantification of the time lost when inpatients are sent down from the wards without an appropriate cannula in CT-Scan

Method: The study was carried over two months from July to August 2011. This was a cross-sectional study conducted in CT scan suite radiology department Aga Khan University Hospital. All inpatients arriving for a CT with IV contrast should have an appropriate cannula. Data were collected prospectively, record details of all inpatients requiring CT scans with contrast. Time taken to insert cannula if one was required.

Results: In this study, taken number of 200 patients they came from ward for CT with IV contrast. In there was 105(52.5%)

patients were an appropriate cannula, 95(47.5%) patients No appropriate cannula includes: 55(27.5%) patients absent cannula, 18(9%) patients cannula present but not working, 09(4.5%) patients looks infected, 13(6.5%) patients too small not suitable for bolus contrast. Average time taken to insert and maintain cannula in CT Suite 10 to 15 minutes.

Conclusion: Patients came from ward for CT Scan without or improper cannula then average (15 mins) was allocated to maintain the cannula. Its a wastage of time both department and technologist and cause delay in services, prolong waiting time for others patients. If dedicated CT preparation room not present this could create a more complicated service. Reminders to ward staff need for a working cannula for inpatients having CT with contrast. Prior to sending down to the department, consider a CT checklist completed by nursing staff which includes assessment of the presence of a working cannula.

Keywords: Cannula

8.41 PRACTICES OF WRITTEN FEEDBACK IN NURSING DEGREE PROGRAMMES IN KARACHI

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Objective: Background Good academic writing skills, is a key to success for students. Without good academic writing skills students find it challenging to fulfill the requirements of their studies in higher education. Written feedback is known to assess and develop students' academic writing skills. However, many factors may affect the practices of written feedback and its utilization. The study aimed at identifying students' perceptions about written feedback in the nursing degree programmes in Karachi.

Method: Methods A descriptive exploratory design was used in this study. The sample consisted of 379 students from nine nursing institutions. The data was collected through a modified Assessment Experience Questionnaire by Gibbs and Simpson. The data was analyzed for descriptive statistics.
Results: Results Variations were found in the practices of written assignments, provision of assessment criteria and provision of written feedback. 80% of the students reported receiving written feedback, with or without oral feedback. However, 20 % of them received only verbal feedback. Only 40% students reported receiving feedback on regular basis. Assignment guidelines were not always in a written form, were ambiguous and the feedback not reflective of the guidelines.

Conclusion: Recommendations The findings have implications for teachers, students and institutions similar to the context of this study. Teachers need to be aware of the role and impact of written feedback on students' learning and develop competence for giving effective feedback. Finally, institutional commitment & policies are needed to promote the practices of effective written feedback.

8.42 INTRODUCTION OF ELECTIVES INTO THE BACCALAUREATE NURSING CURRICULUM: FROM CONCEPTUALIZATION TO OPERATIONALIZATION

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Objective: Design of a curriculum is a daunting but exciting activity. Adding electives to a curriculum enhances the knowledge base of students. For the first time the baccalaureate nursing curriculum offered the flexibility of offering two electives into the curriculum. The faculty offered two courses one on Palliative Nursing and the other on Diagnostic test. Both courses complemented the baccalaureate curriculum

Method: This paper will describe the process from conceptualization of the elective to operationalization of the Palliative nursing course. The course was delivered using a hybrid approach which included e learning, face to face component and hands on experience in a clinical setting

Results: The course has proved to be beneficial for nursing students, nursing faculty and nursing service employees. Several positive outcomes were reported from student evaluation, course briefings and meeting with Director of Nursing Services.
Conclusion: The lessons learnt from this course will go a long way to add to the knowledge base for electives for the national baccalaureate curriculum. In addition it will evaluation a new teaching methodology of e learning.

Keywords: baccauleurate nursing education, elearning, electives

8.43 EVALUATION OF ACUTE STROKE WITH MULTISECTION CT AND MR IMAGING: INFLUENCE OF IMAGING MODALITY AND POST PROCESSING

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Objective: We prospectively evaluated the influence of different imaging techniques (time-of-flight MR angiography [TOF-MRA], multisection CT angiography [CTA]) and postprocessing methods (maximum intensity projection [MIP], multiplanar reformation [MPR]) on acute stroke. To determine the worth of MR angiography of the circle of Willis as a supplement to routine MR in the examination of patients with symptoms of acute stroke in terms of its depiction of the number and distribution of arterial stenoses or occlusions. We also sought to compare the accuracy of MR angiography with CT angiography.
Method: Thirty patients (22 men, 08 women) with symptoms of acute stroke were examined with routine MR head with MR angiography. CT angiography was also performed that 30 patients.. CT and MR angiograms for stenoses or occlusions involving the vessels about the circle of Willis. MR and CT angiograms were also evaluated for image quality, and the corresponding routine CT and MR studies were evaluated for the presence of arterial infarction. In MRI 3D-TOF technique were applied for MRA and MIP was used for postprocessing

and CT used intracranial arteries protocol with IV bolus contrast injected.

Results: CT angiograms were rated good or excellent in 89% of cases whereas MR angiograms were rated good or excellent in 62% of cases. Arterial stenoses or occlusions were present on 58% of CT angiograms, 42% of MR angiograms. Findings were in agreement in 92% of the vessels analyzed by CT angiography and MR angiography. Similarly, there was overall agreement of findings in 99% of vessels analyzed by CT angiography. None of the patients had any immediate adverse reactions after administration of intravenous nonionic iodinated contrast material

Conclusion: CT angiography is an accurate and safe method for evaluating arterial stenoses or occlusions in the vessels about the circle of Willis. CT angiography should be used in patients with symptoms of acute stroke for whom evaluation of the intracranial vasculature is desirable

Keywords: Stroke

8.44

RADIOGRAPHER COMPETENCE IN THE ADMINISTRATION OF IV CONTRAST FOR CT EXAMINATIONS

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Objective: This audit is worth carrying out because when delegating the injection of intravenous (IV) contrast agents to radiographic staff, there must be evidence that such delegation is proper and appropriate. There is a need to demonstrate that all radiographers performing this task are competent at needle insertion and in the use of the injector pump. In addition, those who carry out these tasks must possess an understanding of the contra-indications to contrast administration, signs of contrast medium reactions and how such reactions should be managed. They all have must knowledge of needle stick injury. Assessment of radiographer skills and understanding of the administration of intravenous contrast

Method: We conducted a cross-sectional study of two governments (JPMC & Civil) and two private (Aga Khan University & Ziauddin University) hospitals' radiology department CT Scan Suites. A sample was taken randomly 15 radiographers from each sector government & private. We used a questionnaire that filled by self-report total 40 questionnaire forms were distributed in both sectors, Our questionnaire based on these points: different skills in that we asked from participants, Hold a current certificate of competence in administration of IV contrast, daily assessment of contrast medium injector pumps, Should have CPR certificate, knowledge about contraindication of contrast media Data was recorded, entered, and analyzed using SPSS version 17.

Results: Out of 40 participants in both sector (private & government). Certificate of competence in administration of IV contrast was in government sector (25%) and in private sector (60%). CPR certificate (55%) in private sector and (10%) in government sector. Knowledge regarding contra-indication of contrast media (75%) in private sector and (60%) in government sector. Lack of resources, Low level of education, no CME

(continuous medical education), lack of trainings in staff were major factors associated in government sector. As comparison with both sector competence factor was high in private sector and low in government sector

Conclusion: There was more competence found in private sector than government practices. However the participation response rate was higher in private as compare government practices. The rang of participants age was between 24-48 years. we found the more skills in private because of continuous CME and on job training. excess work load, lack of training, poor educational environment cause low competence in government sector

Keywords: IV Contrast

8.45

MENTORSHIP PROGRAM FOR RADIOLOGY RESIDENTS IN PAKISTAN: A NEW HORIZON TO BE EXPLORED!

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Objective: The purpose of this study was to assess the knowledge of radiology resident's toward the subject of mentorship in order to formulate and inculcate an effective and successful mentorship program.

Method: A questionnaire was developed and circulated among present radiology residents of private and government teaching hospitals. The survey assessed views on mentorship during residency training and the potential role of mentorship in resident career development. Results of filled questionnaire were recorded on SPSS19 and analyzed.

Results: Twenty six residents responded to the survey (100%). Majority were year one residents (yr1=9, yr2=7, yr3=5, yr4=3, yr5=2). Male residents were 18 and females were 8. Mean age was 29.9 (range 26-35). 16 knew what a mentorship program was (61.5%). Only 5 residents currently had a mentor (19.2%). 14/26 had a specific person in mind to be their mentor (53.8%). 15 residents preferred that a mentor should have a clinical background, 4 preferred a mentor with research background whereas only 3 preferred a mentor with empathy. 4 residents wanted a mentor with both clinical and research background. 17 residents wanted a senior faculty as their mentor (65.3%). 57.7% residents prefer male mentors while 6 had no preference. 23 residents wanted mentorship program to commence in year one of residency. 11 residents wanted 1 session per week with majority opting for one hour per session. 23 residents believed that mentoring should cover academics, followed by residency related issues and future planning. Slight higher preference was given to informal mentorship program as opposed to formal mentorship program.

Conclusion: Residents consider mentoring relationships to be an important resource for their professional and personal development as well as play a potent role in increasing the proportion of residents pursuing academic careers and positions of leadership.

Keywords: Mentorship, Mentor, Residents.

8.46**MEDICAL STUDENTS' ASSESSMENT OF AN INCIPIENT CORE CLERKSHIP IN RADIOLOGY**

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Objective: To elicit medical students' appraisal of an incipient core clerkship in radiology and to explore the trends of these opinions during three of the initial years of institution.
Method: A cross-sectional survey was conducted, using a self-administered questionnaire. All medical students who had completed the clerkship were eligible for participation. The learners' agreement with statements concerning different aspects of the clerkship was assessed using a 5-point scale (1=Strongly disagree, 5=Strongly agree). Their opinions regarding exposure to radiology and length of an ideal radiology clerkship were also elicited. Mean (SD) scores for each statement was calculated. Opinions across three batches of students were assessed with ANOVA. $P < 0.05$ was considered significant.

Results: A total of 140 students (Mean age 22 years, 40.7% female) returned the questionnaire; $n=32$ (22.9%) were in Year V, $n=42$ (30.0%) in Year IV and $n=66$ (47.1%) in Year III. The learners opined that the organization of the clerkship (mean score 3.8) as well as the volume (mean score 3.8) and diversity (mean score 3.7) of patients that they were exposed to, were satisfactory. The students found clerkship useful during other clerkships (mean score 4.0) and were satisfied with the overall quality of the learning experience (mean score 3.7); trends of improvement were observed in several areas. Majority (86.4%, $n=121$) opined that Radiology clerkship should be mandatory ($p < 0.001$, χ^2 -test). The average suggested duration of an ideal clerkship was three weeks.

Conclusion: A core clerkship in Radiology is a feasible instrument for improving integrated learning in medical school.

Keywords: Clerkship, Radiology, Medical Students

8.47**FAMILY INVOLVEMENT: ENHANCING QUALITY OF CARE FOR HOME VENTILATION PATIENTS**

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Objective: Nowadays increasing number of patients is requiring long term ventilation management. Introducing home ventilation is a solution for patients who are ventilator dependent. Leading such initiative in a Tertiary Care University Hospital (TCUH) in Karachi, Pakistan facilitates patients' quality of life, addresses the issues of ICU beds, and reduces financial burdens on patients and families. Family involvement in care processes enhance the quality of care and act as a first line of defense against clinical or communication errors. The objective of this paper is to share comprehensive rehabilitative care services extended to ventilator-dependent patients with a reasonable expectation of weaning or discharge on home ventilation with family participation.
Method: Plan-Do-Check-Act (PDSA) methodology was used with process analysis instrument as a quality improvement tools

to facilitate care provision and discharge plan for patients identified for home ventilation. Daily checks were done to provide appropriate weaning, rehabilitation, nutritional support, pain management and family briefings about plan of care. Staff members identifies care taker (family member), trained and evaluated them for basic care concerns. Family partnership initiatives programs were conducted to promote best practice guidelines.

Results: Implementing family centered care practices; we were able to discharge 16 patients from January 2010 to Sep 2011 in a TCUH in Karachi, Pakistan. Staff compliance for defined strategy was improved from 25% to 90%.

Conclusion: Goal of family involvement in patients care processes was achieved; sustaining family involvement in care provision required a cultural change. Family focused initiatives has received attention, coordination and improvements in the care of ventilator-dependent patients

Keywords: Family , Involvement , Care

8.48**REASONS OF REFUSAL AND DROP OUT IN A FOLLOW UP STUDY**

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Objective: To determine the reasons underlying the refusals to participate and drop outs from a follow up study involving primigravidae

Method: Aga Khan University and Aga Khan Hospital for Women, Karachi, jointly initiated a nested case-control study on primigravidae for determining the predictability of preeclampsia using various biochemical markers in blood. The protocol-eligible study subjects were counseled along with their accompanying family members to participate in the study. All women recruited in this study were followed up throughout their pregnancy till delivery

Results: One thousand six hundred and sixty-five primigravidae were identified as the potential study subjects. Among them, 1,307 (78.5%) consented and 358 (21.5%) refused to participate. The most common reason underlying the refusal was inability to get permission from the family members ($n = 84$; 34.4%) followed by fear of prick ($n = 51$; 20.9%). For 114 refusals, either the reason was not mentioned by the counseled women ($n = 60$) or the data was missing ($n = 54$). Out of 1,307 women recruited in the research, only 611 (46.7%) women completed the study. Among the rest, 102 (7.8%) subsequently withdrew from the research, 503 (38.5%) were dropped out, and 91 (7.0%) were lost to follow up.

Conclusion: Refusal to participate and drop out from the research program are two significant factors hindering the smooth flow of a study. In Pakistan, the major reason for the refusal by the protocol-eligible pregnant women for participating in a research program is the unwillingness of the family members.

Keywords: refusal to participate, lost to follow up, primigravidae

8.49

TO ASSESS THE TREATMENT AND OUTCOME OF PATIENTS PRESENTING TO THE EMERGENCY DEPARTMENT WITH HYPERKALEMIA

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Objective: Severe hyperkalemia (K level > 6.5 mmol/L) can cause serious arrhythmias including ventricular fibrillation and asystolic arrest. The objective is to assess the treatment and outcome of patients presenting to emergency department (ED) with hyperkalemia.

Method: This is a retrospective chart study that includes all patients presenting to AKUH-ED with hyperkalemia. LAMA or transferred patients were excluded. Data was collected from January 2009- September 2010. Two hundred and forty-nine cases were enrolled in the study. Information on major comorbidities of patient, laboratory investigations, treatment given to patient and final outcome in terms of mortality and morbidity were noted. The effectiveness of treatment in terms of lowering of potassium levels was also evaluated.

Results: Shortness of breath was the most common complaint (36.1%). Most common comorbidities were hypertension 200 (80.3%), diabetes 163 (65.5%) and chronic renal failure 153 (61.4%). There were 147 (59 %) cases of severe hyperkalemia and 101 (40.6%) cases of moderate hyperkalemia (K 5.5 – 6.5 mmol/L). Patients were given insulin 219 (88%), dextrose 233 (93.6%), calcium gluconate 234 (94%), kayexalate 187 (75%), salbutamol nebs 96 (38.6%) as treatment. Dialysis was done in 34 (13%) cases. Potassium normalized in 75 (30.1%) cases and 38 (15.3%) were still severely hyperkalemic. Of all the patients, 192 (77.1%) survived and only 3 (1.2%) expired. *Conclusion:* Hyperkalemia is a commonly seen condition in the ED and most of the patients treated for severe hyperkalemia do respond to treatment and can be managed in the ED.

Keywords: hyperkalemia, treatment, outcomes

8.50

STRENGTHENING CRITICAL CARE COMPETENCY THROUGH CAPACITY BUILDING OF NURSES AT AGA KHAN UNIVERSITY HOSPITAL (AKUH), KARACHI

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Objective: Intensive care nurses play a vital role in total patient care management and are also required to be comfortable with a wide variety of technology and its uses in the critical care setting. At present this training is provided through a comprehensive competency based orientation program in collaboration with biomedical in-services, manufacturer training, and many hours of education time with experienced operators. Annual continuing education is required to ensure that all skills are kept up to date. Many intensive care unit management teams send their nurses to conferences to ensure that the staff is kept up to the current state of this rapidly changing technology. *Method:* Plan-Do-Check-Act (PDSA) methodology was used

with process analysis instrument as a quality improvement tool to do the capacity building of intensive care unit nurses in specialty based developments. With limited resource allocation for everyone to be trained and develop critical care competency in such manner, Division of Nursing Services-critical care management team in collaboration with Human Resources Division invited an experienced TKN Volunteer to do the needful. *Results:* The above initiative has proven to improve quality of care to critically ill patients, enhanced clinical competencies, and professional confidence; introduction of concepts like FAST HUG for patient care as a vital few and its application at the bedside was very beneficial. Practicing nurses were able to establish international networking.

Conclusion: Enhancing professional development provides opportunity to strengthen organizational commitment and provides inspiration to staff during difficult times

Keywords: Critical Care, Competency, Capacity Building

8.51

PERIOPERATIVE MANAGEMENT OF PULMONARY HYPERTENSION USING PGE1 AND VASOPRESSIN

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Objective: Summary: Pulmonary hypertension is defined as the pulmonary artery pressure > 25 mmHg at rest and >30 mmHg during exercise. Conditions associated with pulmonary hypertension are not uncommon in congenital heart diseases. These conditions if not corrected in early life lead to secondary changes in pulmonary vasculature and with advancing age may become irreversible and threat to life. Surgical correction in early life period has been shown favorable outcome. The incidence of congenital heart disease in Pakistan ranges between 3 – 5 per 1000 births. Pulmonary hypertension is a predictor of perioperative morbidity therefore these patients are at increased risk of perioperative morbidity and mortality during anaesthesia and surgery and require special measures to control perioperative and postoperative pulmonary hypertension including inhaled Nitric oxide, phosphodiesterase inhibitors (PDE-5), JET – ventilation etc. The Aga Khan University hospital has started its congenital heart surgery program since 2006 and is dealing with complicated corrective congenital heart surgeries. Although limited in resources as compared to advanced countries this program is running successfully with satisfactory results. We successfully managed 5 cases of congenital heart disease with severe pulmonary hypertension without inhaled Nitric oxide and JET ventilation using prostaglandin infusion along with vasopressin. These cases included CAVSD, VSD, TAPVD and MS. We exploited the pulmonary vasodilator effect of PGE1 and explored the paradoxical pulmonary vasodilator and systemic vasoconstrictor effect of Vasopressin in prevention of systemic hypotension for peri and immediate postoperative control of pulmonary hypertension. Sildenafil was used to control the pulmonary hypertension in the later post operative period. *Method:* literature review of the previous work done regarding pharmacological and other methods used to control pulmonary hypertension.

Results: Conclusion: Perioperative pulmonary hypertension can be managed by pharmacological means if exploited carefully using PGE1 and Vasopressin when Inhaled Nitric Oxide is not available.

Conclusion: Conclusion: Perioperative pulmonary hypertension can be managed by pharmacological means if exploited carefully using PGE1 and Vasopressin when Inhaled Nitric Oxide is not available.

Keywords: Pulmonary, hypertension

8.52

A PROCESS FOR IMPROVING EXAMS, TEACHING AND WRITTEN OUTCOMES: POST-HOC ANALYSIS APPROACH

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Objective: At Aga Khan University, the four-week rotation in Orthopaedics takes place in the 3rd year of the MBBS curriculum, and is based on defined curricular objectives. By the end of the rotation the student is expected to have acquired basic orthopaedic skills of an outgoing graduate. Although pre-hoc and post-hoc analysis have been in place, since there were no clearly written outcomes previously, there were still gaps between teaching and a valid and fair examination. We aimed to review the teaching and examination process by the means of post-hoc examination analysis in order to ensure learning of the desired outcomes by 3rd year medical students.

Method: To start with, a pilot was conducted on the orthopaedics rotation. Exam papers were analysed for difficulty and discriminatory indices. Questions with low and high difficulty i.e. <30% and >80% and with no discrimination, were reviewed in depth to identify reasons of such performance. Moreover, questions in which students showed varied responses in light of objectives and teaching methods were also reviewed. Suggestions for improvement of questions and content delivery were noted down by coordinator for subsequent incorporation in questions, to develop new questions and improving delivery of specific concepts.

Results: As a result of this post-hoc analysis, we have been able to have a) clearly written outcomes, b) improved questions in structure and cognitive level, and c) improved teaching. Also, on the basis of this exercise and table of specifications we have been able to put together an improved exam blue print.

Conclusion: Clearly written outcomes, explicitly understood by faculty and students alongwith regular review and improvement of the assessment and teaching is essential for students' mastering the outcomes.

Keywords: Education, Post-hoc analysis, Examination

8.53

SCIENCE TEACHERS' BELIEFS AND TEACHING PRACTICES IN PRIVATE SCHOOLS OF NURSING, KARACHI

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Objective: Introduction: The study in progress proposes to understand the pedagogical beliefs of science teachers teaching science courses in professional nursing education. The academic preparation of science teachers focuses more on teaching core science and minimal on its application in nursing practice. This orientation develops a particular belief system about knowledge, teaching, learning, and thus creates a tension between science teachers' pedagogical beliefs and their practices in the nursing school. Purpose: To understand the teaching/ learning beliefs of science teachers in professional nursing education. The study also seeks to understand their personal, professional beliefs and how these beliefs influence their practices.

Method: Life-history will be used as a methodological lens for in-depth exploration of participants' lives. Life-history interviews and classroom observations are key methods for data collection. With no baseline data available on science teachers, demographic data was collected from 26 private, Pakistan Nursing Council (PNC) registered schools of nursing.

Results: Demographic results reveal that 71% of the science teachers are subject specialists i.e. Physiologist, physicists chemists and microbiologists with masters' degree in science. Majority (64%) engaged in teaching all science courses are either microbiologists or physiologists. The rest are doctors, engineers, pharmacists and nurses. Based on these findings I selected a sample of 4 subject specialist for life history interview. This selection represents the entire population of science teachers in private nursing schools in Karachi. The experience of these science teachers ranges from 3-23 years. Male science teachers have slight edge over females in numbers.

Conclusion: Study findings will generate a data base of science teachers in private schools of nursing, Karachi.

Keywords: Teachers beliefs, professional nursing education, life history

9.1 NUCLEIC ACID TESTING OF PAKISTANI BLOOD DONORS: IS IT NEEDED?

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Introduction: The frequency of viral hepatitis B and C is estimated to be 3-4% in Pakistani blood donors while HIV is <1%. However no data is available regarding blood donations that are made during window period. Such donations though serologically negative are potentially infectious because of the substantial viral load. The current study was done to estimate the extent of such blood donations that were made during the gap before sero-conversion. **Objective:** To determine the frequency of window period blood donations for estimating NAT-yield in Pakistan **Method:** All donors were initially scanned verbally to assess their suitability for donation using an in house questionnaire. We collected two 5ml blood in gel tube (BD vacutainer) from each donor. Each donation was screened for HIV, Hepatitis B and C [Vitros Johnson & Johnson, ortho- clinical and diagnostic 1996-2000], malaria [Now malaria® Binax incorporated] and syphilis [VDRL Carbon antigen Plasmatec Laboratory products]. Serologically negative donors were evaluated further through nucleic acid testing [TaqScreen MPX Assay, Roche Diagnostics]. **Results:** During the 4-month study period [April 20 to August 19, 2011], 8486 blood donations were made. There were 8236 males and 250 females with age ranging from 18 to 50 years. 284 subjects were sero-positive for the following markers: HbsAg [n=110], HCV [n=121], HIV [n=5], VDRL [n= 40] and ICT malaria [n= 8]. 8202 serologically non reactive blood samples were tested for nucleic acid and a total of 9 cases were positive. NAT yield was computed as 1:900 donations showing that one of every 900 blood donations was made during the window period. Theoretically, 27 patients were saved from transfusion transmitted viral infections through this strategy. **Conclusion:** Nucleic acid testing in Pakistani donors had yielded high positivity rate. For safe blood transfusion, we must continue NAT and also urge other blood banks to utilize our services for the same.

Keywords: Blood donors, NAT, Pakistan

9.2 RESISTANCE PATTERN OF CIPROFLOXACIN AGAINST DIFFERENT PATHOGENS

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Objective: Objectives: Ciprofloxacin is a broad-spectrum antibiotic widely prescribed in clinical and hospital settings. The emergence of antimicrobial resistance against effective antibiotics is a global issue. The objective of this study is the surveillance of ciprofloxacin against common pathogens. **Method:** Methods: To investigate the present status of

antimicrobial resistance against ciprofloxacin, 524 clinical isolates of Escherichia coli (29.58%), Staphylococcus aureus (32.63%), Salmonella typhi (9.16%), Klebsiella pneumonia (14.3%) and Pseudomonas aeruginosa (14.3%) were collected for the study between January 2008 and February 2009 from different pathological laboratories and hospitals in Karachi, Pakistan. These pathogens were isolated from specimens of both in and outpatients departments. The in-vitro antimicrobial activity of ciprofloxacin was carried out using the Disc Diffusion Method (Kirby-Bauer test).

Results: Results: Results showed that ciprofloxacin was 27.02%, 21.95%, 16.66%, 72.22% and 44.44% resistant to Escherichia coli, Staphylococcus aureus, Salmonella typhi, Klebsiella pneumonia and Pseudomonas aeruginosa respectively.

Conclusion: Conclusion: To concluded, it can be deduced that these clinical isolates have began to develop resistance against ciprofloxacin due to its irrational and inappropriate use. Continuous surveillance is crucial to monitor the antimicrobial resistance among pathogens.

Keywords: resistance pattern, different pathogens, ciprofloxacin

9.3 CCL2/MCP-1 GG GENOTYPE IS ASSOCIATED WITH DISEASE LOCALIZATION IN TUBERCULOSIS

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Objective: Among the known biomarkers, chemokines, secreted by activated macrophages and T cells, attract groups of immune cells to the site of infection and may determine the clinical outcome. Association studies of CCL-2/MCP-1 -2518 A/G functional SNP linked to high and low phenotypes with tuberculosis disease susceptibility have shown conflicting results in tuberculosis. Some of these differences may be due to differences in latent infection as assessed by Tuberculin Skin Test (TST) or tuberculosis disease variability. The objective of the current study was to analyze CCL-2 SNP -2518 (A/G transition) in relation to TST status (presence or absence of latent infection) as well as disease severity in tuberculosis across the clinical spectrum.

Method: Study subjects included Healthy control groups (TBNA=189; TBNA TST+=110; TST- =67) and compared them with tuberculosis patients with active disease (TBA=185). TBA was further divided into those with pulmonary disease (minimal to moderate [P-md=71] or advanced [P-ad=33] lung involvement or extrapulmonary with less severe (LTB=46) or severe (DTB=35) disease.

Results: The only association observed was with GG genotype in the P-md group ($\chi^2=3.95$; $p=0.047$) when compared with TBNA TST- group. No association was observed with either PAD ($p=0.978$), LTB ($p=0.328$) or DTB ($p=0.989$). No associations were observed when the groups were compared with TBNA TST+ group. Although not significant, GG genotype was overrepresented in healthy donors with latent infection (GG 2.28-fold higher) compared to TST- healthy donors. **Conclusion:** Conclusion: The main conclusion was that CCL2

GG genotype, linked to high producer phenotype may play a role in disease localization in tuberculosis.

Keywords: CCL2/MCP1, SNP, Tuberculosis

9.4

HIV TREATMENT IN PAKISTAN - SHOTS IN THE DARK?

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Objective: The World Health Organization (WHO)-recommended first-line therapy for HIV patients is a cocktail of one non-nucleoside reverse transcriptase inhibitor (NNRTI) and two nucleotide reverse transcriptase inhibitors (NRTIs). Under selection pressures from ART, however, HIV can rapidly develop ART resistance-conferring mutations – leading to therapy failure. **Method:** Thirty-eight samples from HIV-1 positive drug-naïve as well as first-line ART-receiving patients were used for this study. The HIV-1 pol region (entire protease gene and partial reverse transcriptase gene) was sequenced and ART resistance mutations were analyzed using the Stanford HIV Drug Resistance Database.

Results: Of the 38 HIV-1 positive patients enrolled in the study, 34 (89%) patients infected with HIV-1 subtype A, showed the presence of one stable minor mutation, E138A. Phylogenetic analysis indicated that the stable E138A is most likely a primary HIV-1 subtype A-specific mutation. Furthermore, our analysis revealed a higher degree of HIV sequence variability in drug-treated compared to drug-naïve patients, possibly owing to selection pressure from the ART.

Conclusion: HIV-1 in the infected Pakistani patients is carrying a stable mutation. A trend is apparent that overtime further HIV mutations may accumulate in the drug-treated patients. We recommend HIV-1 drug resistance profiling of infected population before and during ART regimen. This will help to optimize the antiretroviral drug treatment for HIV patients, and to control further transmission of ART resistant stable HIV variants into vulnerable populations.

Keywords: HIV, Antiretroviral treatment, Resistance mutation

9.5

VACCINE EFFECTIVENESS AND THE RISK FACTORS ASSOCIATED WITH MEASLES AMONG CHILDREN PRESENTING IN THE PUBLIC SECTOR TERTIARY CARE HOSPITALS OF KARACHI, PAKISTAN

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Objective: • To determine the risk factors associated with development of measles among children less than 12 years of age presenting in the tertiary care hospitals of Karachi. • To find out effectiveness of measles vaccine among children less than

12 years of age presenting in the tertiary care hospitals of Karachi. Vaccine effectiveness: Odds of developing measles among vaccinated children Odds of developing measles among unvaccinated children

Study design: Matched case control study. Ratio of 1:2 shall be used for cases vs. controls. Matching shall be done on the basis of age and gender. Setting: Children Hospitals of Karachi (NICH, Pediatrics Dept. of CHK, Paediatrics Dept. of Abbasi Shaheed Hospital Karachi). Sample size: Sample size is calculated using prevalence of various risk factors for measles among cases and general population from national and regional studies. Therefore, 146 individuals are required as cases and 292 as controls, yielding a total sample size of 438. Sampling technique: Consecutive sampling of children presenting with measles and hospital matched controls matched for age and gender. Variables: Independent variables: Age, Gender, socioeconomic status, ethnicity, mother's education, exposure to health facility, vaccination status, frequency of measles vaccination, no. of children in household, nutrition status (as per modified Gomez classification), interaction with the floating population. Outcome variable: Measles risk factors Data collection tools: Interview based questionnaire + Serum IgM levels for measles Data analysis procedure: Descriptive statistics (mean, std. deviation or freq %) will be presented for comparison of cases with controls using t-test & chi sq for continuous and categorical variables respectively. Conditional logistic regression analysis will be conducted to assess the crude association of each independent factor with measles. Final results will be expressed as odds ratio. **Expected results:** • Vaccine effectiveness among children presenting in hospitals of Karachi is less than 85% expected, so need to develop stringent policies on vaccine cold chain and maintenance system. • Children with no or single dose of measles vaccine are more prone to develop measles. • Unvaccinated children or recipient of single dose vaccine are more prone to develop measles after recent hospital visit. • Girls have higher chances of missed vaccination opportunities. • Children of mothers with low education are developing measles in a greater proportion. • Certain ethnicities in Karachi may be at higher risk of developing measles and suffering with its complications.

9.6

BCG VACCINATION IS ASSOCIATED WITH TUBERCULOUS LYMPHADENITIS IN PAKISTANI ADULTS

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Objective: Pakistan ranks 6th amongst high tuberculosis (TB) burden countries. Mycobacterium bovis bacille-Calmette Guerin (BCG) vaccination is part of the Extended immunization Program (EPI) and is administered within the first month after birth. However, both pulmonary (PTB) and extrapulmonary tuberculosis (ETB) remains common. The efficacy of BCG is found to be variable in adults although it is thought to be protective against

severe disease in children. Our objective was to determine as association between BCG vaccination and the occurrence of PTB and ETB together with its correlation with severity of disease

Method: This was a cross-sectional multi-center hospital based study. Patients with PTB or ETB, with less severe (L-ETB) or severe disseminated (D-ETB) disease were recruited and the presence of a BCG vaccination scar was documented. *Results:* In L-ETB cases, vaccination was greater in lymphadenitis (LNTB) cases than pleural TB ($p=0.004$). Also, LNTB had more vaccinees than PTB ($p=0.001$) and tuberculous meningitis ($p=0.027$) groups.

Conclusion: LNTB represents localised TB therefore our data suggests that BCG protects against more severe forms of TB in adults in Pakistan.

Keywords: TB lymphadenitis, BCG, extrapulmonary TB

9.7

M. TUBERCULOSIS SONICATE INDUCED IFN-GAMMA, CXCL10 AND IL10 CAN DIFFERENTIATE SEVERITY IN TUBERCULOSIS

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Objective: Improved tools are required to study immunopathogenesis of tuberculosis (TB). Mycobacterium tuberculosis antigen-stimulated T cell based assays can detect TB but are less effective when responses are compromised such as in severe disease.

Method: We investigated responses to M. tuberculosis whole sonicate (MTBs), recombinant antigens ESAT6 and CFP10 in whole blood cells of healthy endemic controls (EC, $n=42$) and patients with pulmonary (PTB, $n=36$) or extrapulmonary (ETB, $n=41$) disease. Biomarkers of T cell activation (IFN γ or modulation (IL10) and chemokines, CXCL9, CXCL10 and CCL2 secretion were measured.

Results: MTBs, ESAT6 and CFP10 all induced IFN γ responses in TB. ESAT6-induced IFN γ was elevated in TB as compared with EC. MTBs- stimulated the highest IFN γ levels but did not differentiate between TB and EC. However, MTBs induced -CXCL10 ($p=0.004$) was reduced while; -IL10 ($p<0.001$) was raised in TB as compared with EC. Between sites; MTBs induced -CCL2 ($p=0.001$) and - IL10 secretion was higher in PTB than ETB ($p<0.001$). In comparison of disease severity; MTBs induced IFN γ ($p=0.014$) and CXCL10 ($p=0.022$) levels were raised in moderate as compared with far advanced PTB. In ETB; MTBs induced IL10 levels were greater in less severe (L-ETB) than in severe disseminated (D-ETB) cases, $p=0.035$. Within the L-ETB group, MTBs induced IFN γ was greater in patients with tuberculous lymphadenitis than those with pleural TB ($p=0.002$). *Conclusion:* As immune responses to MTBs were differentially activated in TB of different sites and severity, we propose the utility of MTBs- induced IFN CXCL10 and IL10 as biomarkers in TB.

Keywords: MTB sonicate, cytokines, disease severity

9.8

CRYPTOCOCCAL MENINGITIS WITH SECONDARY CUTANEOUS INVOLVEMENT IN AN IMMUNOCOMPETENT HOST

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Objective: Cryptococcosis is a potentially fatal fungal disease caused by variants of Cryptococcus neoformans species. The respiratory tract is the usual portal of entry, with a peculiar predilection to invade the central nervous system. The skin can be secondarily involved in disseminated infection or be exceptionally involved as primary cutaneous infection by inoculation. The disease is mostly seen in immunodeficiency states. The diagnosis is frequently unsuspected in immunocompetent patients.

Method: We report a case of disseminated cryptococcal meningitis in an immunocompetent young adult. The skin was secondarily involved and exhibited firm molluscum- like papules and nodules on the face and neck. The cutaneous eruption prompted the accurate diagnosis.

Results: The immunocompetent adult female had the characteristic features of disseminated cryptococcal infection with secondary cutaneous involvement. The patient had fever, cough, headache and intractable vomiting for the past 2 months and was being managed as a case of tuberculous meningitis. Two weeks after starting treatment she developed umbilicated papules and nodules on the head and neck region. Necessary laboratory workup identified C neoformans var. gattii on CSF and skin specimens. The titers of cryptococcal antigen were measured in CSF and serum for diagnostic and prognostic purpose. Anti-fungal treatment has resulted in regression of cutaneous lesions and resolution of systemic complaints.

Conclusion: The case validates a need for high degree of suspicion, especially in healthy young adults, in the diagnosis and management of Cryptococcosis. The cutaneous eruptions can be the first manifestation or a diagnostic clue of enormous significance.

Keywords: Cryptococcus neoformans, immunocompetent, skin involvement

9.9

DETECTION OF VIRULENCE GENE (STEC) IN ATYPICAL (EAE+/BFPA-) EPEC STRAIN OF E.COLI BY MULTIPLEX PCR

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Background: Enteropathogenic Escherichia coli (EPEC) and Shiga toxin (Stx)-producing E. coli (STEC) are important human enteropathogens. EPEC is further sub grouped into typical (tEPEC) and atypical (aEPEC) EPEC. tEPEC strains are major causative agents of acute diarrhea in infants in developing countries. The main difference between tEPEC and aEPEC is

the presence of the EPEC adherence factor (EAF) plasmid in tEPEC. This plasmid encodes the bundle-forming pilus (bfpA+) with additional factors that contribute to virulence including intimin encoded by the *eae* gene. Formation of the attaching-and-effacing (AE) lesion is the major virulence mechanism of EPEC and also virulence property of enterohemorrhagic *E. coli* (EHEC) strains. Typically, EHEC strains express with two groups of important virulence factors. This major virulence factors implicated in STEC infection are potent Shiga toxins, which are classified into two groups, Stx1 and Stx2. In STEC the association of *efa1* (EHEC factor for adherence), *sen*, *stx1* and *stx2* was strongly correlated with virulence and disease severity. Objective: To investigate the presence of virulence genes in atypical EPEC by multiplex PCR.

Method: Total 228 *eae+* *bfpA-* EPEC isolates from 76 stool samples were selected from an ongoing Global Enteric Multicentre Study (GEMS). This study is a case control study carried on children <5 years of age. DNA was extracted from pooled colonies of 24 hr fresh growth of *E. coli* by boiling method. Multiplex PCR was carried out using 5 different sets of primers. Results were analyzed by gel electrophoresis. **Results:** Out of 76 samples the frequency of *eae+* gene was (100% 76/76), *sen* (75% 57/76), *Efa-1* (58% 44/76), *Stx-1* (1.31% 1/76) and *stx-2* (2.63% 2/76)

Conclusion: The multiplex PCR for the detection of various virulence factors will help to further investigate and clarify the role of diarrheogenic *E. coli* in diarrheal disease.

Keywords: EPEC, Shiga toxin (STEC), EHEC

9.10 BURDEN OF ROTAVIRUS GASTROENTERITIS IN RURAL DISTRICT OF PAKISTAN

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Objective: Rotavirus is the most common cause of severe gastroenteritis in young children resulting 440,000 deaths annually, the vast majority in developing countries. Limited information on rotavirus epidemiology is available from rural settings, where most of the children die in Pakistan. We aimed to assess burden of disease; and to identify viral strain types causing severe rotavirus gastroenteritis among children aged < 5 years.

Method: The prospective surveillance was established for all cause diarrhea at two public sector secondary hospitals in a rural district of Sindh, Pakistan. Children with acute severe gastroenteritis were eligible; parental consent was obtained. Stool specimens were tested on-site for Rotavirus antigen by ELISA using WHO protocols. All test positive, and 10% test negative specimens were re-tested on automated ELISA for quality control; and PCR was performed to type viral strains. **Results:** This is an interim report of surveillance from November 2009 – August 2011. Of 304 (14%) children with severe diarrhea tested, 84 (28%) were positive for rotavirus in stool. Majority of the rotavirus diarrhea cases (76%) were below 12 months of age. Rotavirus was detected throughout the 12 months period

with minimal seasonal variation. The G9 [P8], G9 [P6], and G2 [P4] were the common viral strains associated with rotavirus gastroenteritis.

Conclusion: Children in rural areas of Pakistan suffer high rates of rotavirus diarrhea and account for approximately one-third of hospitalized diarrhea. This underscores the need for appropriate vaccinations, and strengthens advocacy argument to introduce rotavirus vaccine for all children under national EPI in Pakistan

Keywords: Rotavirus gastroenteritis

9.11 SEVERITY OF PLASMODIUM VIVAX IN KARACHI: A CROSS SECTIONAL STUDY

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Objective: Plasmodium vivax malaria affects billion people annually. Due to frequent observation of complicated *P. vivax* patients presenting to our Emergency Department (ED) we conducted this study to note the presentations, complications and identify the determinants of in-patient hospital care of *P. vivax* malaria patients presenting to a tertiary care hospital in Karachi, Pakistan. Severity of the shock was also assessed using shock index.

Method: This study was a descriptive cross sectional study conducted at the Emergency Department of Aga Khan University Hospital, Karachi. All adult patients with a positive *P. vivax* peripheral film and / or Immunochromatography admitted through ED were studied during 2009. Data was entered and analyzed using SPSS version 16. Keeping the length of stay at a cut off of 48 hours after admission, Independent Student-t test was applied. Level of significance was taken at 0.05. **Results:** A total of 97 patients were included in the study. Fever was the most common presentation. A significant number of patients had nonspecific complaints, but tachycardia, altered mental status, and ARDS were important findings. Mean shock index was 1 (SD 0.26). Common reasons for admission were thrombocytopenia and dehydration. Some had to be admitted for more than 48 hours. Complications included pneumonia, ARDS and bleeding requiring platelet transfusion. **Conclusion:** This study highlights the fact that debilitating impact of *P. vivax* malaria, remains high. Although the effects of severe vivax malaria can be contained through aggressive resuscitation and specific therapy, sensitivity and awareness of this complicated course needs to be highlighted among caregivers.

Keywords: Vivax malaria, severity, shock index

9.12 PREVALENCE AND RISK FACTORS OF HEPATITIS C IN PAKISTAN

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Objective: Hepatitis C is a major health issue in many developing countries, including Pakistan. Pakistan has the second highest rates of hepatitis C among other developing countries. However, the estimates of the prevalence and risk factors associated with hepatitis C at national level are currently unknown.
Method: A comprehensive literature search was carried out manually as well as by using electronic databases including PubMed and Science Direct. We reviewed 52 publications to estimate the prevalence and risk factors of hepatitis C in Pakistan.
Results: The methodological differences among studies made it unsuitable to conduct a formal meta-analysis to estimate prevalence and risk factors of hepatitis C in Pakistan. An average prevalence of hepatitis C in Pakistan ranges from 2.45% to 25.7%. The major risk factors associated with prevalence of hepatitis C in Pakistan include injection drug users, unsafe and excessive use of needles in healthcare settings, recipients of blood and blood products, shaving by barbers, and occupational risks.

Conclusion: Available review of literature suggested that there is a moderately higher prevalence of hepatitis C in Pakistan. Action needs to be taken in order to address the risk factors that contribute towards increased incidences of hepatitis C infection.

Keywords: Hepatitis C, Pakistan, Risk factors

9.13 THE SPREAD OF HIV IN PAKISTAN: BRIDGING OF THE EPIDEMIC BETWEEN POPULATIONS

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Objective: In the last two decades, 'concentrated epidemics' of human immunodeficiency virus (HIV) have established in several high-risk groups in Pakistan, including Injecting Drug Users (IDUs) and among men who have sex with men (MSM). Communities of IDUs and MSM are known to interact through overlapping risk behaviors (needlesharing, sexual contact, etc.), which may facilitate spillover of HIV infection from IDUs into MSM, or vice versa. We hypothesized that MSM may act as 'bridge' for introducing the HIV infection into the general population from the IDU community.

Method: To explore the transmission patterns of HIV infection in these major high-risk groups of Pakistan, 76 HIV samples were analyzed from MSM, their female spouses and children, along with 26 samples from a previously studied cohort of IDUs.
Results: Phylogenetic analysis of HIV gag gene sequences obtained from these samples indicated a substantial degree of

intermixing between the IDU and MSM populations, suggesting a bridging of HIV infection from IDUs, via MSM, to the MSM spouses and children. Our analysis implicates M-IDU (MSM practicing intravenous drug use) to be involved in bridging the HIV transmission between IDUs and MSM, most likely through needle-sharing.

Conclusion: HIV epidemic in Pakistan is now spreading to the female spouses and offspring of bisexual MSM. HIV control and awareness programs must be refocused to include IDUs, MSM, as well as bisexual MSM, and their spouses and children.

Keywords: HIV, MSM, Bridging

9.14 PLASMODIUM VIVAX MALARIA: A RETROSPECTIVE SURVEY

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Objective: Malaria remains a major public health problem causing mortality and morbidity in tropical and subtropical countries including Pakistan. Of the non-falciparum species, *P. vivax* has the greatest geographic range and burden of disease. It causes significant morbidity and inflicts a huge socio-economic burden on endemic countries. This study aims to assess the disease burden and severity of *P. vivax* malaria amongst adult population.

Method: A retrospective review of the records of inpatients admitted at AKUH with a diagnosis of *P. vivax* malaria in the last four years was done. The inclusion criteria included age of more than 14 years and a peripheral blood smear or an ICT positive for *P. vivax* malaria. Patients with mixed *P. falciparum* and *vivax* infections were excluded.

Results: Out of 260 patients, majority (98.8% n=257) reported fever as a presenting complaint of which almost half also reported at least one episode of accompanying vomiting usually without abdominal pain. August and September showed increased rates of patient admissions (41 and 74 patients respectively). Young adults (21-30 years) were more commonly affected with a mean age being 40.2 years. 182 (70%) patients qualified as "Severe Malaria", fulfilling at least one of the criteria set by WHO. Of these, 25 (13.7%) required admission to the Special Care Unit. There was a total of three mortalities. However, only one could be attributable to *P. vivax* associated ARDS (mortality rate of 0.5%).

Conclusion: Our results show that *P. vivax* malaria rates peak in August and September. While the mortality rate (0.5%) may be considered low, there is a high reported relapse rate of 20%, leading to increased disease burden in this endemic region

Keywords: severe vivax malaria, relapse rate, risk factors

9.15 PATTERNS OF HIV INFECTION AMONG NATIVE AND REFUGEE AFGHANS

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Objective: Transmigration of infected populations can result in transmission of new HIV-1 variants into the host population. Due to nearly 30 years of conflict in Afghanistan, many Afghans have been forced into migration, mostly to Pakistan and Iran. This transmigration has not only been responsible for high prevalence of HIV, but has also led to the emergence of novel CRFs in the Afghan population. The current study was conducted to explore the nature of the HIV epidemics among the Afghan refugees in Pakistan and the native Afghans in Afghanistan.

Method: A total of 29 HIV-positive samples from the Afghan refugees in Pakistan, and 11 HIV-positive from native Afghans in Kabul, Afghanistan, were included in this study. Furthermore, in order to investigate the transmission patterns of HIV among Afghans and other high-risk groups, HIV gag sequences from 73 HIV-positive patients (male having sex with male [MSM] and intravenous drug users [IDU]) from Pakistan were also included. The sequences were aligned using Clustal X and phylogenetic tree was constructed using MEGA software. In order to analyze the recombinant strains, National Center for Biotechnology Information (NCBI) genotyping tool was utilized.

Results: Phylogenetic analysis of HIV gag gene from 40 samples showed diverse HIV variants, originating from a number of countries. Additionally, several overlapping clusters of MSM and Afghan refugees were observed, indicating a transmission link between these two cohorts. A few of the native Afghan samples also showed close phylogenetic association between the HIV sequences from Afghan refugees and MSM.

Conclusion: Our findings have revealed associations between our study populations of native and refugees Afghans and the high-risk groups in Pakistan and Iran. Frequent travel, past displacement and current repatriation of millions of Afghans has now put the Afghan population at risk of infection with novel, possibly drug-resistant HIV viral strains. Divergence of such diverse subtypes and CRFs may prove challenging for the development of effective vaccine and antiretroviral therapy against HIV in the Afghan populations.

Keywords: HIV-1, Afghan, CRFs

9.16 PRESENCE OF RD149 DELETIONS IN MYCOBACTERIUM TUBERCULOSIS CENTRAL ASIAN STRAIN 1 (CAS1) ISOLATES AFFECT GROWTH AND TNFA INDUCTION IN THP-1 MONOCYTES.

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Objective: Background CAS1 is the prevalent M. tuberculosis genogroup in South Asia. CAS1 strains carry RD149 and RD152

deletions. Significance of these deletions is as yet unknown. **Objective** To compare CAS1 strains with RD149 and concurrent RD149-RD152 deletions with CAS1 strains without deletions and M. tuberculosis H37Rv for growth and for induction of TNF α , IL6, CCL2 and IL10.

Method: The THP-1 human monocytic cell line was differentiated with Phorbol Ester Myristate and recombinant human interferon gamma for 24 hrs. Cell supernatants were collected at days 1 and 3 for cytokine measurements. Cell lysates were plated for CFUs at 1, 3, 5 and 7 days post-infection.

Results: Growth of CAS1 strains with deletions was slower in broth (RD149; p=0.024 and RD149-RD152; p=0.025) than that of strains without deletions. CAS1 strains with RD149 deletion strains further showed reduced intracellular growth (p=0.013) in THP-1 cells as compared with strains without deletions and also as compared with H37Rv (p=0.007) and with CAS1 RD149-RD152 deletion strains (p=0.029). In THP-1 cells, all CAS1 strains induced higher levels of TNF α and IL10 secretion than H37Rv. CAS1 strains with RD149 deletions induced more TNF α secretion than those without deletions (p=0.013). RD149 deletion strains from extrapulmonary sources showed more rapid growth and induced lower levels of TNF α and IL6 secretion than isolates from pulmonary sources.

Conclusion: This data suggests that RD149 deletion in CAS1 strains reduces growth and increases the induction of TNF α in host cells. Differences observed for extrapulmonary strains may indicate potential for dissemination and tropism outside the lung

Keywords: Mycobacterium tuberculosis, Central Asian Strain 1, RD149 deletion

9.17 MALARIA PREVENTION THROUGH INTEGRATED INSECTICIDE TREATED BED NETS DISTRIBUTION

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Objective: History of Malaria dates back to over 4000 years and still this disease is responsible for a million lives and morbidity in 250 million per year. Various measures have been taken in this regard, including indoor residual spraying, promoting use of Insecticide treated bednets (ITN) and educating or creating awareness among masses. ITN being one such intervention has the potential for hugely affecting the spread of this disease, its use reduced mortality in children less than 5 years old by around 20%. The wide-scale implementation of ITNs is now one of the main strategies to reduce morbidity and mortality from malaria (WHO 2003). Some of the large scale programs have Integrated ITN distribution with existing programs.

Method: In this review, fifteen such integrated national and district level programs were evaluated to assess the effectiveness of integrating these distribution strategies. Six non-integrated programs were also evaluated for comparison. All the studies were pre-post designs except one that is quasi-experimental design. These selected programs integrated their distribution strategy of ITNs with Measles, Immunization, Child health, Mass drug administration or ANC programs. All studies were from Sub Saharan Africa and these studies were evaluated on three outcome measures that are coverage, usage and equity.

Results: These programs were relatively not well integrated in

terms of materials and finances. Effect size estimates show significant improvements for all three outcomes (coverage, usage and equity) for integrated ITN delivery strategy. Pooled estimates showed that the integrated programs were significantly better in achieving improvements in coverage and usage as compared to the non-integrated programs ($p=0.02$ and $p=0.003$ respectively). Significant improvement was achieved in coverage (RR= 6.56, 95% CI= 3.47-12.40) and usage (RR= 3.38, 95% CI= 2.56-4.47) for the integrated programs as compared to the national statistics. The primary program coverage for Vitamin A and Immunization improved significantly ($p<0.00001$) while for Measles and MDA improvements were insignificant.

Conclusion: Integrated ITN distribution strategy has shown to be effective and an efficient means to achieve RBM goals without hampering the primary program.

Keywords: Integration, ITN

9.18

MORTALITY IN SEPSIS AND ITS RELATIONSHIP WITH GENDER

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Objective: Sepsis remains one of the leading causes of death across the world despite major advances in therapeutics, with a reported mortality rate of 20–50%. Influence of gender on survival of sepsis patients has not been established clearly. According to data from U.S., women are less likely to suffer from sepsis compared to men from all infectious sources except the genitourinary tract, and have a lower risk of mortality from sepsis. These differences have been attributed to immune system, sex hormones and gender-related gene polymorphisms. Data from our region on this subject is lacking. **objective:** To determine the relationship between gender and mortality in sepsis. To compare cytokine profiles of male and female patients **Method:** We conducted a prospective case-control study at Aga Khan University Hospital, Karachi, between 2005 and 2006. A total of 100 patients admitted with sepsis as defined by SCCM were included. Clinical and microbiological data was gathered, blood samples were collected for cytokine (IL-10, IL-6 and TNF α) levels and gene polymorphism analysis, and patients were followed up for clinical outcome. Data was analyzed on SPSS. Chi square or Fisher exact test was used for group comparisons of categorical variables and Mann Whitney test for continuous variables. P-value < 0.05 was considered significant.

Results: Out of 100 patients with sepsis, 97 were included for analysis, exclusions being due to incomplete information. 54% were male and 46% female, with mean age 54 ± 16 and 50 ± 16 years respectively. Diabetes and hypertension were the leading co-morbid, without significant gender difference. Respiratory tract infection was the most common source of sepsis, and was significantly more common ($p=0.034$) in females (60%) compared to males (39%). Urinary tract infection was the next common source but no gender difference was observed. Gram negative organisms accounted for about 60% of the infections in both genders. As for outcome, males had a significantly greater (p value=0.040) mortality (46%) as compared to females (27%).

Mean plasma level of IL-6 in males was more than twice that in females ($p=0.040$). Notably, mean IL-6 plasma level was significantly ($p<0.01$) higher in patients who died vs. who recovered. Distribution of cytokine gene polymorphism was similar across the genders.

Conclusion: We have found that males with sepsis have a 70% greater mortality rate as compared to females. This higher mortality appears to be related to differences in respiratory tract infection rate and IL-6 plasma levels, between the genders.

Keywords: sepsis, gene polymorphism, cytokines

9.19

LOCALISED FUNGAL INFECTION IN A PROSTHETIC MESH TREATED CONSERVATIVELY

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Objective: Infection remains one of the most challenging complications of mesh hernioplasty. The authors report a case of a 28-year-old male with no known comorbidities who underwent reversal of ileostomy and prolene mesh hernioplasty. His wound was left open for delayed primary closure, although daily dressing started from second postoperative day. He developed fungal infection of prolene mesh on fifth postoperative day which was successfully treated with irrigation and daily wound dressing with amphotericin B avoiding the complications associated with mesh excision.

Method: Case report

Results: He made an uneventful recovery and on last follow-up his wound was granulating well with no signs of infection.

Conclusion: Conservative management of mesh infection is a safe alternative to complete excision of mesh in selected group of patients. For fungal mesh infection local wound care along with antifungal irrigation may be used as first-line therapy, provided patient has no systemic signs of infection. Patient should be kept on short interval follow-up until the wound heals completely.

Keywords:

9.20

FIRST REPORT FROM SOUTHERN PAKISTAN ON ALLELIC VARIANTS OF PLASMODIUM VIVAX CIRCUMSPOROZOITE PROTEIN AND MEROZOITE SURFACE PROTEIN 1

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Objective: Plasmodium vivax is the prevalent malarial species accounting for 70% of malaria cases in Pakistan. However, basic data on P.vivax genotypes is lacking from Pakistan. Studies have shown that for P.vivax, polymorphic genes coding for circumsporozoite protein (pvcsp) and merozoite surface protein 1 (pvmsp1), can be used as reliable genetic markers for conducting molecular epidemiological studies. Pvmsp1 gene is a mosaic organization of several variable blocks and its genotyping is based on detection of allelic variants in its three polymorphic

fragments (F1 to F3), pvcsp genotyping is based on detection of either of the two types of nonapeptide repeat units in its central domain; GDRA (A/D) GPQA, namely VK 210 type and ANGA (G/D) (N/D) QPG, namely VK 247 types. Objectives: To determine the prevalent allelic variants of pvcsp and pvmsp 1, circulating within Southern Pakistan.

Method: A descriptive study was done during 2008-2009, on two-hundred and thirty blood samples collected from patients infected with *P.vivax*. Pvcsp and pvmsp1 genes were amplified by nested PCR using primers specific for csp and msp1. For genotyping of pvcsp, RFLP was performed while different allelic forms of Pvmsp1 were detected by analysis of fragment size and sequencing.

Results: For pvmsp1, it was found that in F1 fragment, 12 allelic variants were observed (bp size variation 350-550), in F2 fragment 17 allelic variants were observed (950-1270 bp) and in F3 fragment 8 allelic variants were observed (250-390 bp). Thus, a total of 17 genotypes corresponding to pvmsp1 gene were found circulating in Southern Pakistan. Pvcsp genotyping in Pakistani isolates showed that VK210 variants were predominant (79%, 182/230) while percent positivity of VK 247 was 13% (29/230). Respective bp size variation were 600-870bp for VK 210 and 650-820bp for VK 247.

Conclusion: We conclude that this is, to our knowledge, the first study from Southern Pakistan on genetic diversity of *Plasmodium vivax*. Data from this study indicates that both pvcsp and pvmsp1 can be used as reliable markers for conducting *P.vivax* genotyping. Thus, this study will serve as a baseline data for future research on *P.vivax* genetic diversity from Pakistan.

Keywords: genetic diversity, plasmodium vivax, southern Pakistan

9.21

EMERGING TREND OF DRUG RESISTANCE ASSOCIATED MUTATIONS AGAINST SULPHADOXINE-PYRIMETHAMINE (SP) IN PLASMODIUM VIVAX CLINICAL ISOLATES FROM SOUTHERN PAKISTAN

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Background: *Plasmodium vivax* is the second most prevalent malaria specie accounting for estimated 130–435 million annual infections worldwide. In Pakistan, 70% of microscopically confirmed malaria cases are that of *P.vivax* while rest of the cases is either mixed or of *P.falciparum*. Since, no vaccines are available; control strategy against malaria includes the use of anti-malarial drugs, especially anti-folates such as Sulphadoxine-Pyrimethamine (SP). However, SP drug resistance in *P.vivax* is consistently being reported worldwide. Yet, no such data is available from Southern Pakistan, indicating the need to detect and map the emergence of SP resistance in *P.vivax* clinical isolates from Southern Pakistan.

Objectives: Determination of prevalence of mutations associated with SP drug resistance in *P.vivax* clinical isolates from Southern Pakistan

Methods: Blood samples (n=60) were collected during 2009-2010, from microscopically confirmed vivax infection patients. DNA was extracted and nested PCR was performed with primers specific for pvdhps and pvdhfr gene (genes conferring point mutations against SP drug resistance). Sequencing of

representative samples (n=15) was done using ABI automated sequencer (Macrogen, Korea). Clustal X (1.83) programme was used for alignment and determination of mutations in pvdhfr and pvdhps genes of study isolates against reference wild type strains, ARI/Pakistan X98123 and AY186730 respectively.

Result: It was observed that in pvdhps gene, novel mutations of L519F (6.6%) and A647K (33.3%) were detected while in pvdhfr gene, double mutation was observed in most of the samples, with the most prevalent double mutation being S58R and S117N (33.5%) respectively. These results show a rising trend of drug resistance against Sulphadoxine–Pyrimethamine (SP) in *P.vivax* clinical isolates from Southern Pakistan.

Conclusion: SP drug resistance analysis of *P.vivax* clinical isolates indicates that there is a need to monitor the prevalence of drug resistance against SP from Southern Pakistan so that a rational drug policy against *P.vivax* could be deployed.

9.22

CHARACTERISING M. TUBERCULOSIS ISOLATES FROM KARACHI, PAKISTAN: DRUG RESISTANCE AND GENOTYPES

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Objective: To study prevalence, risk factors and genotypes of drug-resistant *Mycobacterium tuberculosis* in Karachi

Method: Pulmonary tuberculosis (TB) patients were recruited in a cross-sectional study (2006-2009). Drug susceptibility was performed in culture-positive cases (n=1004). Factors associated with drug-resistance were evaluated using logistic-regression analysis. Strains were typed using Spoligotyping and Mycobacterial-interspersed-repetitive-units (MIRU)-Variable-number-tandem-repeat unit (VNTR). Genotype and drug resistance association was explored using x2-test.

Results: Resistance rates (new and previously treated) were as follows: multidrug-resistant (MDR)-TB; 2.4% & 14%, rifampicin (RMP)-monoresistance; 0.1% & 0.6%, any isoniazid (INH)- resistance; 8.9% & 28.5% and INH-monoresistance; 3% & 6.3%. Prior TB treatment was a risk factor for MDR-TB (AOR:6.7,95%CI:3.5-13.1) and INH-monoresistance (AOR:2.4,95%CI:1.1-5.2). Additional risk factors included low socio-economic status for INH-monoresistance (AOR:3.2,95%CI:1.6-6.5), and belonging to Balouchi (AOR:9.1,95%CI:2.5-33.4), Sindhi (AOR:4.1,95%CI:1.2-13.5) or Pakhtun (AOR:3.4,95%CI:1-11.1) ethnicity for MDR-TB. Although Central Asian Strain (55.6%) was the most prevalent genotype, MDR-TB was significantly associated with Haarlem (H)-genogroup (P<0.001).

Conclusion: MDR-TB rate of 2.4% is reported in new patients. Low RMP-monoresistance supports using RMP as a marker for MDR-TB in this population. Need for strengthening TB care in identified at risk groups and in patients with H-genogroup is emphasized. Based on INH-resistance rates, a review of national treatment/prevention regimens relying on INH is suggested.

Keywords: Drug resistant tuberculosis, Spoligotyping, MIRU VNTR

9.23 REAL-TIME PCR FOR DETECTION OF ACTIVE CYTOMEGALOVIRUS (CMV) INFECTION IN IMMUNOCOMPROMISED RECIPIENTS

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Objective: Background: Cytomegalovirus (CMV) belongs to the family of herpes viruses. CMV is one of the most important infections in transplant recipients. The seroprevalence of CMV in Pakistan is 82.7%. However, CMV may remain latent with reactivation if the host become immune compromised. CMV can be transmitted by donors through blood or organ donation. Concurrent administration of immunosuppressive drugs to prevent transplant rejection further increases the risk of disease. It is important to recognize active CMV infection due to the increased risk presented to the patient. **Objective:** We tested for CMV DNA using a rapid real time PCR method and determined its association with clinical disease.

Method: A retrospective analysis was performed on samples received from June 2009-September 2011 and tested in the Clinical Laboratories, AKUH. DNA was extracted from blood and PCR was performed for CMV immediate early genes (IE) using the RoboGene Cytomegalovirus (CMV) detection Kit (Roboscreen, Germany) on a Rotorgene (Real-time PCR system)

Results: Of the in-patient samples tested 103 were males (Median age=33.9) while 49 were female (Median age=28.3). Of these 20 were positive for CMV DNA by PCR. Patients with active CMV infections were; under treatment for leukemia (n=8), on renal dialysis (n=3), were organ transplant recipients (n=6), were HIV positive (n=1), while 2 patients were aged greater than 60 years and had diabetes mellitus (n=2).

Conclusion: PCR based detection of CMV is a rapid method for detection of active virus replication and identification of increased risk of disease in immune compromised individuals.

Keywords:

9.24 EVALUATION OF HUMAN CYTOMEGALOVIRUS SEROPREVALENCE IN SUBGROUPS OF THE POPULATION IN SINDH, PAKISTAN

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Background: Human Cytomegalovirus (HCMV) is a ubiquitous pathogen. Prevalence in adults varies widely (40-100%) and is dependent on the geography and the socioeconomic status of the population. An earlier reported study from Pakistan had limitations in terms of sample size and inadequate selection criteria.

Objective: To determine seroprevalence of HCMV infection in subgroups of a population living in the Sindh province of Pakistan.

Materials & Methods: We are aiming for 1000 serum samples and to date we have collected 259 samples of which 223 samples were stratified into rural (n=188) and urban (n=35) groups. Our study participants represent employees of Aga Khan University, Karachi and residents of Jam Goth, Malir and Radho Jokhio Goth, Gadap. A questionnaire was used to collect socio-demographic data. A commercial ELISA kit was used to detect HCMV IgG and IgM antibodies.

Results: The overall prevalence of HCMV infection was 93.43% in individuals = 18 years old. A marginally significant association between age and chronic HCMV infection was observed (p=0.065). HCMV prevalence increased gradually with age, from 82.6% in 18 to 20 years old to 100% in > 60 years of age. HCMV prevalence differed significantly between rural (95.7%) and urban (74.3%) groups (p=0.000). Males and females were found to be almost equally infected. The overall HCMV-IgM seropositivity was 2.31% suggesting acute infection.

Conclusion: This preliminary data of HCMV-IgG seroprevalence indicate that HCMV infection is very high in the local population. In the future, we intend to perform the immunological assays to study the impact of HCMV infection on general health of the local population.

9.25 SCREENING OF VIRAL NUCLEIC ACID IN BLOOD DONATION USING COBAS S201 TAQ SCREEN MPX SYSTEM VALIDATION, IMPLEMENTATION AND INITIAL EXPERIENCE.

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Objective: Cobas s201/TaqScreen MPX assay is a fully automated multiplex nucleic acid test for blood screening for HBV, HCV, HIV-1 and HIV-2. Recently, this test was implemented at the AKUH blood transfusion services for donors' screening. **Objective** To examine overall performance and suitability of the system for screening blood donations aiming to improve transfusion safety.

Method: Cobas s201 platform consists of automated pooling of blood donations, sample preparation, amplification and detection using cobas TaqMan analyzer. Samples were tested in pool of six and resolution of positive pool was performed by single donation testing.

Results: For validation, 1000 serology negative blood samples were collected from healthy donors. A set of samples were spiked with known amount of HBV, HCV or HIV, whereas remaining samples were included as negative controls. Samples were analyzed in duplicate. The LOD for HBV, HCV and HIV were comparable to published studies using the same platform. So far more than 11824 donations have been screened; out of those 383 were rejected on the basis of positive serology. NAT assay detected viral nucleic acid in 12 samples giving a yield of 1 out of 953 samples.

Conclusion: TaqScreen MPX is a sensitive and cost effective assay that proves to be suitable for high throughput screening. Initial results indicate a net safety benefit for blood donors.

Keywords: cobas s201, NAT, donor screening

9.26

ENTAMEBA SPECIES ASSOCIATED WITH CHRONIC DIARRHEA IN PAKISTAN

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Objective: The genus Entamoeba species including *E. histolytica*, *Entamoeba dispar*, *Entamoeba moshkovskii*, *Entamoeba poleki*, *Entamoeba coli* and *Entamoeba hartmanni* may colonize the human intestinal lumen. *E. histolytica* is known to cause intestinal and extraintestinal disease while other species are regarded as commensal organisms that cause no intestinal disease. Fecal carriage of *E. dispar* is more common than *E. histolytica*. Mixed infection with Entamoeba species has been reported. The demonstration of cysts or trophozoites in the stool suggests an intestinal amoebic infection, but microscopy cannot differentiate between *E. histolytica* and *E. dispar* or *E. moshkovskii*. We determined the prevalence of Entameba histolytica (*E. histolytica*), *E. dispar* and *E. moshkovskii* in patients with chronic diarrhea associated with abdominal pain or discomfort mimicking irritable bowel syndrome (IBS).

Method: • **Methods:** Stool samples were collected from 161 patients having chronic diarrhea and compared with 157 healthy controls. Stool microscopy with modified trichrome stain, culture and polymerase chain reaction (PCR) for Entamoeba species differentiation was done.

Results: Stool microscopy demonstrated Entamoeba cyst in 44% (57/129) with diarrhea compared to 29% (44/151) in control ($p=0.009$). In patients with diarrhea, PCR for *E. histolytica* was positive in 9% (11/129) ($p=0.008$), *E. dispar* in 19% (24/129) ($p=0.117$) and *E. moshkovskii* in 19% (24/129) ($p<0.001$). **Conclusion:** *E. histolytica* and *E. moshkovskii* were significantly associated with diarrhea while *E. dispar* was equally demonstrated in both groups.

Keywords: Diarrhea, Entameba histolytica,, Entameba moshkovskii

9.27

A MULTI-CENTER STUDY ON LATENT TUBERCULOSIS FROM KARACHI PAKISTAN

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Objective: The true frequency of Latent Tuberculosis is unknown of the healthy young adults of Karachi. Similarly, factors predisposing or protecting these healthy adults have also not

been studied previously. To estimate the frequency and identify associated factors for latent tuberculosis infection among young adults studying in medical and non-medical colleges of Karachi, Pakistan.

Method: This multi-center, cross-sectional study was conducted in Karachi from June to October 2010. The study subjects after consent were interviewed regarding demographic, household information, vaccination status, acute and chronic health problems including previous Mantoux testing and chest radiography, detailed history, general physical and chest examinations were performed and disease status was tested using Tuberculin Skin Test.

Results: Five hundred and thirty four medical and non-medical students were tested. About 529(99%) were vaccinated. 6(1%) had been treated with anti-tuberculosis medication in the past. Majority 214(40%) had size of the indurations between 5-9 mm. Twelve (2%) cases had a positive skin test. The only statistically significant association was found between previous Bacille Calmette-Guérin vaccination status and Latent Tuberculosis. ($p=0.004$, Fisher's Exact Test; Contingency Coefficient: 0.24; $p=0.0001$)

Conclusion: Frequency of Latent Tuberculosis among the healthy young adults of Karachi was found to be low at 2%. Previous vaccination with Bacille Calmette-Guérin was the only associated factor identified. Latent Tuberculosis is more among medical students compared to non-medical students.

Keywords: Latent Tuberculosis, Young Adult, Karachi

9.28

SCREENING FOR VIRAL NUCLEIC ACID IN BLOOD DONATIONS USING ROCHE COBAS S201 TAQSCREEN MPX SYSTEM: VALIDATION, IMPLEMENTATION AND INITIAL EXPERIENCE

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Objective: Cobas s201/TaqScreen MPX assay is a fully automated multiplex nucleic acid test for blood screening for HBV, HCV, HIV-1 and HIV-2. Recently, this test was implemented at the AKUH blood transfusion services for donors' screening. Objective To examine overall performance and suitability of the system for screening blood donations aiming to improve transfusion safety.

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12 samples giving a yield of 1 out of 953 samples.
Conclusion: TaqScreen MPX is a sensitive and cost effective assay that proves to be suitable for high throughput screening. Initial results indicate a net safety benefit for blood donors.

Keywords: NAT, taqscreen MPX, donor screening

9.30

EVALUATION OF MODIFIED HODGE TEST FOR THE DETECTION OF NDM-1 CARBAPENEMASES IN CARBAPENEM RESISTANT ENTEROBACTERIACEAE

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Objective: Carbapenem resistance in enterobacteriaceae is an emerging problem in developing South Asian countries like Pakistan. NDM-1 carbapenemase is the leading mechanism of resistance in these carbapenem resistant gram negative bacteria.
Method: . In this study, we have analyzed the sensitivity and specificity of Modified Hodge test (MHT) as a phenotypic test for detection of NDM-1 carbapenemase using gene detection by PCR as gold standard
Results: . On the basis of meropenem minimum inhibiting concentration (MIC) 38% isolates were found to be susceptible, 27% intermediately susceptible and 35% resistant to this antibiotic. Modified Hodge test was positive in 77/100 isolates and sensitivity and specificity of MHT was found to be 69.8% 42.8% respectively. When molecular methods were applied, NDM-1 gene was detected in 93/100 of the isolates with variable meropenem MIC ranges (0.06 - 32 µg/ml). Other metallo beta-lactamase (IMP, VIM) and KPC were not detected in any of our study isolates. The MIC of meropenem was also compared to MHT and it was found that irrespective of isolate type, MHT positivity rate increases with high MIC as 31/ 35 isolates with MIC = 16 were MHT positive as compare to 21/38 meropenem susceptible isolates

Conclusion: Conclusion: In view of the clinical and public health impact concerned in the detection of a strain carrying carbapenemase, screening and verification in clinical microbiology laboratories should include competent and cost-effective methods that cover the different needs of the local and regional epidemiology. MHT fulfils the majority of these criteria, however, this confirmatory test, as known to date, should be used with care because of the presence of false-positive and negative results, especially in those scenarios with high proportions of strains expressing NDM-1. Therefore future studies should evaluate phenotypic methods like EDTA- synergy test for the detection of NDM-1 so that easy and cost-effective method of detection of these highly resistant bacteria can be implemented to limit the spread and infection control.

Keywords: Hodge, test

9.31

INCREASED LEVELS OF CXCL-9 ARE ASSOCIATED WITH SEVERE P.FALCIPARUM MALARIA.

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Objective: In P.falciparum infections, the balance between pro and anti-inflammatory cytokines plays a major role in disease severity. Clinical studies and murine model supports the role of biomarkers in pathogenesis of severe malaria. We aimed to determine the baseline levels of cytokines and chemokines in malaria patients and healthy controls.

Method: All patients included in the study attended AKUH with complaints of fever. Study subjects were stratified in three categories: uncomplicated malaria (UM=12), severe malaria (SM=10) and healthy controls (HC= 8) with no recent history of malaria. The plasma concentration of cytokines (TNF- α , IL-6 & IFN- γ) and chemokines (CXCL-9 & CXCL-10) were evaluated in malaria patients and healthy controls using enzyme linked immunosorbent assay.

Results: Twenty two malaria patient with microscopy confirmed P.falciparum infection and eight healthy endemic controls were selected for analysis. Significantly lower levels of TNF- α in HC (28 pg/ml,) compared to UM (389 pg/ml, p = 0.020) and SM (771 pg/ml, p = 0.004) group were observed. CXCL-9 levels were significantly raised in SM compared to UM group (p = 0.012). Similarly, CXCL-10 levels were significantly lower in HC group compared to UM (550 pg/ml, p = 0.001) and SM (1480 pg/ml, p = 0.01).

Conclusion: This is the first preliminary report on markers of pathogenesis in P.falciparum from our region. Our study demonstrated a specific pattern of cytokine chemokines levels across the malaria severity spectrum. Increased levels of CXCL-9 and CXCL-10 may suggest their role in severe malaria pathogenesis.

Keywords: malaria, pathogenesis, chemokines

9.33

DETECTION OF NOROVIRUS (NV) IN CHILDREN FROM HOSPITALS ACROSS PAKISTAN

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Objective: Diarrhea is second most common cause of hospitalization in developed countries and third most common cause of death in developing countries claiming 2,000,000 lives annually. Among various etiological agents of diarrhea, Norovirus (NV) has emerged as a major cause of outbreaks and sporadic cases of non-bacterial, acute viral gastroenteritis. In children <5 years NV is estimated for ~1.1 million hospitalizations and 218,000 deaths/year Objectives: To investigate the proportion of hospitalization due to NV, identify the prevalent strains of NV and determine the genetic diversity of circulating NV strains in Pakistani children under age five.

Method: Study Setting: Five different hospitals across Pakistan. Subjects: Children <5 years hospitalized with acute severe watery diarrhea requiring IV hydration. Methodology: Total 255 random samples were picked from five different sites, 50 samples from each site were undergone through RNA extraction. Detection and simultaneous Genogrouping of NV in genogroup GI and GII was done by using monoplex Real-time RTPCR. All real-time RTPCR positive specimens were amplified using specific primers for region C and sent for sequencing (MacroGen). Phylogenetic analysis will be carried out to identify genetic clusters prevalent in our region.

Results: NV (GI and GII) prevalence was found to be 16.9% among hospitalized children in all the study hospitals sites. NV GII and GI proportions was 12.6% and 4.3% respectively. **Conclusion:** NV is found among hospitalized children with severe diarrhea across Pakistan. Further work on the prevalent NV genetic cluster and strains in Pakistani children are under investigation.

Keywords: Norovirus (NV), diarrhea, viral gastroenteritis

9.34

DETECTION OF HOUSE ENTERIC PATHOGEN FROM MUSCA DOMESTICA (HOUSE FLIES) BY PERFORMING BACTERIOLOGICAL CULTURE AND E.COLI MULTIPLEX PCR

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Objective: Background: Houseflies frequently land on dung heaps and other fecal sources. They also visit decaying matter including dead animals. Contaminated material is often transferred to the food when they land on food that is prepared for human consumption. Houseflies like to associate with humans when they prepare and eat food. When houseflies with fecal contaminated legs and proboscis walk upon food or on utensils, plates and cups, they contaminate the food or the eating utensils. There is a wide range of diseases that can be transmitted by flies i.e. Typhoid fever, tuberculosis, dysentery, polio, anthrax, diarrhea, yaws, cholera, conjunctivitis, trachoma, tapeworm, hookworm, and pinworm. House flies have been implicated in the spread of over 30 bacterial and protozoan diseases. It is suggested that bacteriological studies of flies may provide essential epidemiological information. **Objective:** To investigate the presence of Enteric Pathogen on flies, by performing microbiological culture and E.coli multiplex PCR.

Method: The House enteric Pathogen project was conducted on the five different sentinel site of GEMS on coastal belt of Karachi. 1530 Fly culture was performed for a period of a year during Oct 2008-Dec 2009. 1471 fly cultures were processed twice as non homogenized and homogenized flies.

Results: A total of 102(6.6%)Aeromonas, 26(1.69%)Salmonella, 59(3.85%)Vibrio and 4(0.26%)Campylobacter were isolated from Fly Culture. The isolation of 15(0.98%) ETEC, 17(1.1%)

EPEC, 37(2.4%)EAEC were obtained as diarrheagenic E.coli by PCR.

Conclusion: Our finding supports the fact that flies are one of the most important carrier of enteric infections.

Keywords: EPEC, , ETEC , EAEC

9.36

CONTACT LENS-RELATED VISUAL LOSS IN KARACHI

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Objective: To examine the frequency of contact lens related corneal ulcers and its visual consequences at a tertiary care hospital in Karachi, Pakistan

Method: All cases of corneal ulcers, presenting to the cornea specialist at the Aga Khan University Hospital, Karachi between January 2006 and December 2010 were reviewed. Information regarding the cause of ulcer, prior treatment, visual acuity and socio-demographics was obtained from patients' records. Contact-lens specific information such as the type of lens and purpose of wear (cosmetic or refractive) and the duration of wear was obtained from the participants by phone interviews.

Results: A total of 67 eyes (of 59 individuals) presented with corneal ulcers during the review period. 59 persons had a unilateral ulcer while 4 had bilateral disease. The mean (\pm SD) of the individuals was 27.79 (\pm 14.51) while the median age was 24 years (range: 6-76). Of these, 87 % had a visual acuity < 3/60 at presentation. Even after rigorous treatment, the visual acuity remained poor. 68.4 % of the 60 eyes, for which follow up data were available, had visual acuity of < 3/60 at their last follow up visit. Contact lens accounted for the majority of ulcerative eyes among women while trauma was found to be the leading cause among men.

Conclusion: Contact-lens related corneal infection is resulting in serious visual disability. Targeted education is necessary to address this avoidable cause of visual loss.

Keywords: Contact lens, corneal ulcer, visual loss

9.37

CLINICAL FEATURES AND OUTCOME OF NOCARDIOSIS IN PATIENTS ADMITTED TO A TERTIARY CARE CENTER IN KARACHI, PAKISTAN

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Background: Nocardiosis has emerged as an important cause of mortality and morbidity in both immunocompetent and (more commonly) immunocompromised hosts globally. Data reporting nocardiosis from Pakistan is limited. In this study, 10-year

retrospective review of nocardiosis in patients admitted in Aga Khan University was performed, and risk factors, clinical features and outcomes were reported.

Method: Materials and Methods: Clinical records of all cases diagnosed with nocardiosis during 2001-2010 were reviewed. During the study period identification of *Nocardia* species was based on positive Gram stain and positive modified acid-fast stain results, colonial morphology, and conventional biochemical reactions. Data was entered and analyzed using SPSS version 17. This research project was approved by the Aga Khan ethical review committee.

Results: Fifty Five cases were identified during the study period. Fever, cough and dyspnea were the most common presentations. Most of the patients had chronic steroid administration and an underlying malignancy. Cure was possible in thirty six cases, while nineteen patients died. Co-trimoxazole was the most commonly used antibiotic. Most common complications observed were respiratory failure and septicemia.

Conclusion: We report underlying malignancy and chronic corticosteroid therapy as a risk factor for development of nocardiosis in our patients. High mortality rate in this cohort were observed. Clinicians should keep a high index of suspicion for early diagnosis and management of nocardiosis in high risk patients to decrease mortality.

Keywords: : Nocardia, , Nocardiosis, Steroid administration

9.38

EPIDEMIOLOGY, DETERMINANTS AND DYNAMICS OF CHOLERA IN PAKISTAN: GAPS AND PROSPECTS FOR FUTURE RESEARCH

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Objective: Cholera is a preventable disease yet it is responsible for several outbreaks in Pakistan and remains a major cause of morbidity and mortality particularly after natural disasters. Despite infection is endemic in Pakistan, reporting of cholera cases is incomplete and not a single case of cholera reported to WHO during 1993-2005. Objectives of this review are to find out the epidemiology and determinants of cholera infection in Pakistan and to identify the gaps and prospects.

Method: The literature search was carried out by using the database of Medscape, Medline, PakMedinet and PubMed, without any language restriction. Two selection criteria were used (1) those discussing the epidemiology and determinants of cholera infection in Pakistan during 1995-2010; and (2) those discussing the morbidity and mortality due to cholera infection during 1995-2010. Out of twenty-seven articles published between 1995-2010, eighteen articles were included in the review.

Results: Out of eighteen articles reviewed, nine articles were published in index and nine in non indexed peer reviewed journals. Most of the researches are of poor quality hospital based record of patients admitted in certain period of time focusing on characteristics of *Vibrio Cholera* in terms of its biotype and serotype lacking contribution of behavioral, social and environmental determinants

Conclusion: There is scarcity of quality researches on cholera

in Pakistan. Further researches particularly to explore environmental, behavioral and social determinants of cholera are needed that could help in designing potential interventions to reduce burden of cholera in Pakistan and other developing countries.

Keywords: cholera, review, pakistan

9.39

THE ROLE OF SRC KINASE IN THE BIOLOGICAL PROPERTIES OF ACANTHAMOEBA CASTELLANII

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Objective: *Acanthamoeba* are the causative agents of fatal granulomatous encephalitis. Haematogenous spread is thought to be a primary step followed by blood-brain barrier penetration in the transmission of *Acanthamoeba* into the central nervous system but the associated molecular mechanisms remain incompletely understood. Here, we evaluated the role of Src, a non-receptor protein tyrosine kinase in the biology and pathogenesis of *Acanthamoeba*.

Method: Src kinase specific inhibitor, PP2 (4-amino-5-(4-chlorophenyl)-7-(*t*-butyl) pyrazolo [3,4-*d*] pyrimidine) and its inactive analog, PP3 (4-amino-7-phenylpyrazolo[3,4-*d*] pyrimidine) were used to determine the effect of Src kinase inhibition on *Acanthamoeba* growth and its biological properties like phagocytosis of non-invasive bacteria *E. coli* K12 and invasion of amoeba by pathogenic *E. coli* K1. Zymography assay was performed to evaluate the effect of Src kinase inhibition on protease secretion by *Acanthamoeba*. Moreover, we also studied the role of Src kinase in the adhesion and cytotoxic effects of *Acanthamoeba* onto primary human microvasculature endothelial cells (HMECs).

Results: Inhibition of Src kinase by PP2 but not PP3 had detrimental effects on the growth of *A. castellanii*. Interestingly, Src kinase inhibition hampered the phagocytic ability of *A. castellanii*, as measured by decreased uptake of non-invasive bacteria. On the contrary, invasion of *Acanthamoeba* by the pathogenic bacteria was enhanced. Zymographic assays revealed reduced extracellular protease activities of *A. castellanii* upon inhibition of Src kinases. However, Src kinase inhibition had no significant effect on *A. castellanii* adhesion and cytotoxicity on HBMEC cells.

Conclusion: For the first time, our findings demonstrated that Src kinase is involved in *A. castellanii* proliferation, protease secretions and phagocytic properties. Conversely, invasion of *Acanthamoeba* by pathogenic bacteria was stimulated by Src kinase inhibition.

Keywords: Src kinase, *Acanthamoeba*, HBMEC

9.40 RARE FUNGAL SINUSITIS

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Objective: Basidiobolus sinusitis mimicking Wegener's granulomatosis. 25 years old girl presented to otolaryngeal clinic with facial cellulitis and sinusitis. Previous biopsies from sinuses suggested the diagnosis of Wegener's granulomatosis. She underwent debridement and ethmoidectomy. Repeat biopsy, showed granulomatous inflammation but fungal cultures grew basidiobolus ranarum.

Method: Case Report:

Results: Patient was started on oral Itraconazole 200mg TID for 3 days the 200mg BID and also put on oral potassium iodide solution, but later due to difficulty in acquiring potassium iodide soln was continued only on itraconazole. Patient is still on oral itraconazole, its been more than six months of therapy and patient is doing remarkably well with only surgical scarring left behind.

Conclusion: Many infectious and non infectious etiologies have similar clinical and histopathological findings, and in such cases appropriate cultures rescue the situation.

Keywords: Basidiobolus

9.41 ACANTHAMOEBA: A RESERVOIR FOR ENTEROBACTER AEROGENES AND AEROMONAS HYDROPHILA BACTERIA WITH CLINICAL IMPLICATIONS

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Objective: Acanthamoeba can interact with a wide range of microorganisms such as viruses, bacteria, algae, yeast and other protists and may act as a vector in the transmission of bacterial pathogens to the susceptible hosts. Here, we used Acanthamoeba and studied its interactions with two bacterial pathogens including, Enterobacter aerogenes and Aeromonas hydrophila. E. aerogenes demonstrated higher association with A. castellanii as compared to A. hydrophila strain. Next, the bacterial invasion and/or uptake by Acanthamoeba were determined using gentamicin-protection assays. A significantly higher number of intracellular A. hydrophila was recovered as compared to E. aerogenes suggesting that A. hydrophila exhibited increased intracellular viability. Longer incubations of up to 24 h showed that both A. hydrophila and E. aerogenes remained viable and propagated within Acanthamoeba. The results of intracellular cyst assays showed that both E. aerogenes and A. hydrophila exhibited the ability to survive intracellularly of Acanthamoeba. Because cysts can be airborne, these findings suggest that Acanthamoeba is a potential vector in the transmission of bacterial pathogens to the susceptible hosts

Keywords: Acanthamoeba, Interactions, Encystment

9.42 STATUS OF FREE LIVING AMOEBAE'S AND BACTERIAL CONTAMINATION IN DRINKING WATER SUPPLY IN KARACHI, PAKISTAN

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Objective: The importance of Acanthamoeba in aquatic environment has great impact on hygienic, medical and ecological relationship to man. Also microorganisms can enter the distribution system via cross-connections between drinking water and sewage lines, this serves as major sources of microbial contamination and pollution. However, there are no previous studies on the presence and distribution of Acanthamoeba, Naeglaria fowleri, Balamuthia mandilaris and microbial contamination in drinking water supply in Karachi, Pakistan. The aim of this study was to determine the presence of these organisms, using both morphological and molecular tools such as PCR, in water sources associated with human activities in Karachi, Pakistan. In this study, a total of fifty two domestic tap water samples were being collected from different areas of Karachi, Pakistan between May to June 2011. Acanthamoeba spp. 15(30%), Naeglaria fowleri 4(8%), were identified. Microbial contamination was also being observed in these water samples. There was a high prevalence of Bacillus species 33(86.84%) followed by Corneibacterium 4(10.52%) and Acinetobacter species 1(2.63%), Pseudomonas species 4(57.14%), Citrobacter species 1(14.28%) Serratia species and 1(14.28%) Enterobacter species. The current findings disclose that Acanthamoeba species and microbial contamination are a potential health hazard associated with human activities in domestic water supplies in Karachi, Pakistan.

Keywords: Free living amoeba, domestic tap water, Acanthamoeba

9.43 COMPARISON OF EFFECT OF HONEY AND COMMONLY USED COUGH SYRUPS ON COUGH ASSOCIATED WITH UPPER RESPIRATORY TRACT INFECTION IN ADULTS: A RANDOMIZED CONTROL TRIAL

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Objective: Background Cough is a common but annoying symptom of upper respiratory tract infection (URI). Despite its common occurrence there is no standard therapy. Commonly used options are cough syrups as well as several home remedies which are thought to be equally effective in relieving cough associated with URI. Honey has been used for symptomatic relief of cough associated with URI. So far, most studies have been done in pediatric population emphasizing on its beneficial role but its role still needs to be brought in line with the available scientific evidence in adults. This study intends to compare the effects of honey and cough syrups for the improvement of cough

associated with URI in adult population. Objective To compare the effects of honey with cough syrups containing dextromethorphan on cough associated with URI in adults at community health center clinics (CHC) of Aga Khan University Hospital (AKUH) Karachi.

Method: A single center randomized trial was conducted at CHC in AKUH. Adult 18-65 years of age with cough associated with URI were recruited after taking informed consent. Patients with signs and symptoms of pneumonia, asthma or COPD exacerbation, already using cough syrups, honey or antibiotics, ACE inhibitors, history of diabetes mellitus or current use of cigarettes and pregnancy were excluded. Computer generated random numbers were used for allocation of intervention. One group received honey (30 ml in three divided doses) and the other cough syrup containing dextromethorphan and pseudoephedrine (30 ml in 3 divided doses). Outcome variables were cough frequency, severity, bothersome nature of cough, night sleep disturbance and combine score by adding scores of these variables, which were assessed on a 7 point likert scale (0 = none, 6 = extreme). Patients ranked their cough symptoms on the Likert scale at enrolment in the study (day 0) and day 3 of treatment. Difference of the score was calculated between day 1 and day 3 to assess the improvement in cough symptoms. Median was calculated to assess the improvement between the two groups Mann Whitney U test.

Results: Total of 86 patients were enrolled in the study 43 were randomized in to honey and cough syrup group. Patients with cough associated with viral URI receiving honey showed significant improvement in cough frequency (p-value 0.014) and severity (p-value 0.025) than those receiving cough syrups. For bothersome nature (p-value 0.431) and night sleep quality (p-value 0.713) no significant difference was found in both groups. For combined score there was marginal significance for improvement in honey group than cough syrups (p-value 0.076)

Conclusion: In a comparison of honey and cough syrups containing dextromethorphan and pseudoephedrine for the treatment of cough associated with URI in adults honey was found to be more beneficial than cough syrups in reliving cough frequency and severity.

Keywords: Honey, Cough, Upper respiratory tract infection

9.44 SPINAL HYDATID DISEASE: A RARE CAUSE OF PARAPARESIS

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Objective: Objective: To report a case of spinal hydatid disease mimicking tuberculosis

Method: Case report: A 34 year old male presented in the ER with a prolonged history of progressive paraparesis followed by bladder dysfunction. He had earlier been treated for spinal tuberculosis without any benefit. MRI revealed erosion of the D3 vertebra along with an epidural collection extending into the paraspinal muscles. Intra operatively he was found to have multiple small cysts. Hydatid disease was confirmed on

histopathology. His symptoms improved and he was discharged home on Albendazole.

Results: Discussion: Hydatid disease is caused by the tapeworm Echinococcus. Spinal involvement is rare and recurrence after therapy is common. Most patients present with acute cord compression and diagnosis is confirmed intra operatively which increases the chances of complications.

Conclusion: Hydatid disease should be considered as a differential diagnosis in patients presenting with paraparesis, especially patients being treated for TB who do not improve on therapy.

Keywords: Hydatid disease, spine, tuberculosis

9.45 HIGH MIRU LOCI STABILITY AMONG MYCOBACTERIUM TUBERCULOSIS CENTRAL ASIAN STRAINS1 (CAS1) IN PAKISTAN

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Objective: Mycobacterium tuberculosis (MTB) Central Asian Strain1 (CAS1) is the predominant strain type circulating in the country. This study was aimed to evaluate the discriminatory power of MIRU-VNTR 15 loci typing for analysis of MDR-TB and XDR-TB CAS1 MTB strains.

Method: Two hundred MTB isolates including 37.5% CAS1, 5% Beijing and 57.5% other non-CAS1 strains were subjected to standard PCR based MIRU-VNTR typing targeting 15 loci. Ninety-nine isolates were susceptible to all first and second line antituberculous drugs, 41 were Multi Drug Resistant (MDR) and 60 were Extensively Drug Resistant (XDR). *Results:* MIRU-VNTR typing differentiated isolates into eleven clusters of two strains each and 178 unique profiles. Eight clusters consisted of drug susceptible strains; two clusters had MDR strains while one cluster had one each of susceptible and XDR strains. There was no significant difference between MIRU-VNTR profile of drug susceptible, MDR and XDR isolates. Overall, allelic diversity of individual locus showed that eight out of 15 loci (MIRU 10, 16, 26, 31, Mtub 04, ETRA, 4156, and Qub 26) were highly discriminatory with Discriminatory Index (DI) > 0.6. Separate analysis of MIRU typing for CAS1, Non-CAS1 and Beijing strains was also performed. Overall DIs for CAS1, non-CAS1 and Beijing isolates was 0.469, 0.677 and 0.687 respectively.

Conclusion: Lower DI of CAS1 in comparison to non-CAS1 and Beijing strains in Pakistan suggests CAS1 is less diverse. This indicates that CAS1 MIRU-VNTRs may be more stable over time and that they could be used to estimate phylogenetic relatedness.

Keywords: M. tuberculosis, CAS1, MIRU-VNTR

9.46 RESPIRATORY VIRUSES ARE FREQUENTLY ASSOCIATED WITH SEVERE PNEUMONIA IN CHILDREN IN KARACHI, PAKISTAN

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Objective: Pneumonia remains the leading cause of child mortality in Pakistan. Most severe pneumonia cases are presumed to be of bacterial etiology, while the role of respiratory viruses in causing severe pneumonia in Pakistan remains largely unknown. Our study aims to determine the prevalence of respiratory viruses (Respiratory Syncytial Virus (RSV), Influenza A virus and Human Metapneumovirus (HMPV)) in children aged 2 – 23 months who were hospitalized with severe pneumonia at a public sector hospital in Karachi, Pakistan.

Method: Prospective surveillance was established during November 2010 – September 2011 at Abbassi Shaheed Hospital (ASH), a public tertiary care hospital in the metropolitan city of Karachi. Children admitted with tachypnea and chest indrawing (WHO definition of severe pneumonia) were recruited and throat swabs were obtained to detect respiratory viruses using real time RT-PCR. In addition, chest x-rays of all subjects were obtained and independently interpreted by two radiologists to diagnose radiologic pneumonia.

Results: There were 204 children with severe pneumonia, and throat swabs were collected from 171 (84%) children. RSV was found in 31 (18%) subjects, HMPV in 24 (14%) subjects, and Influenza A in 9 (5.2%). Co-infection was found in two children with Influenza A and RSV. Out of the 32 radiological proven pneumonia cases, 2 (6.3%) had influenza A, 2 (6.3%) had HMPV, and 1 (3.1%) had RSV.

Conclusion: RSV, HMPV, Influenza A are common causes of pneumonia in hospitalized children in Karachi during the winter season. Knowledge of the viral etiology of pediatric pneumonia can help in recommending appropriate preventive strategies like influenza vaccination.

Keywords: Respiratory viruses , Severe pneumonia

9.47 DETECTION OF VIRULENCE GENE (STEC) IN ATYPICAL (EAE+/BFP A-) EPEC STRAIN OF E.COLI BY MULTIPLEX PCR

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Background: Enteropathogenic Escherichia coli (EPEC) and Shiga toxin (Stx)-producing E. coli (STEC) are important human enteropathogens. EPEC is further sub grouped into typical (tEPEC) and atypical (aEPEC) EPEC. tEPEC strains are major causative agents of acute diarrhea in infants in developing countries .The main difference between tEPEC and aEPEC is the presence of the EPEC adherence factor (EAF) plasmid in tEPEC .This plasmid encodes the bundle-forming pilus (bfpA+) with additional factors that contribute to virulence including

intimin encoded by the eae gene. Formation of the attaching-and-effacing (AE) lesion is the major virulence mechanism of EPEC and also virulence property of enterohemorrhagic E. coli (EHEC) strains. Typically, EHEC strains express with two groups of important virulence factors. This major virulence factors implicated in STEC infection are potent Shiga toxins, which are classified into two groups, Stx1 and Stx2. In STEC the association of efa1 (EHEC factor for adherence), sen, stx1 and stx2 was strongly correlated with virulence and disease severity. **Objective:** To investigate the presence of virulence genes in atypical EPEC by multiplex PCR.

Method: Total 228 eae+ bfpA- EPEC isolates from 76 stool samples were selected from an ongoing Global Enteric Multicentre Study (GEMS). This study is a case control study carried on children <5 years of age. DNA was extracted from pooled colonies of 24 hr fresh growth of E.coli by boiling method. Multiplex PCR was carried out using 5 different sets of primers. Results were analyzed by gel electrophoresis. **Results:** Out of 76 samples the frequency of eae + gene was (100% 76/76), sen (75% 57/76), Efa-1 (58% 44/76), Stx-1 (1.31% 1/76) and stx-2 (2.63% 2/76)

Conclusion: The multiplex PCR for the detection of various virulence factors will help to further investigate and clarify the role of diarrheogenic E.coli in diarrheal disease.

Keywords: EPEC, Shiga toxin (STEC) , EHEC

9.48 SCLEROSING MESENTERITIS AS A CAUSE OF ABDOMINAL MASS AND DISCOMFORT IN AN ELDERLY PATIENT: A CASE REPORT AND LITERATURE REVIEW.

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Objective: Sclerosing mesenteritis is a rare benign process that involves inflammation, fat necrosis, and fibrosis of the mesentery. The disease poses great diagnostic challenge due to its nonspecific clinical and diagnostic findings.

Method: We report the case of a 75-year-old man who presented with vague abdominal discomfort associated with an intra-abdominal mass. Secondary to a strong suspicion of a bowel carcinoid tumor on abdominal CT scan, he underwent a diagnostic laparoscopy and minilaparotomy. A diagnosis of sclerosing mesenteritis was made on histopathology and the patient was started on an immunosuppressive regimen.

Results: With suspicion of a bowel carcinoid tumor on computed tomography scans, the patient underwent diagnostic laparoscopy. A diagnosis of sclerosing mesenteritis was made on histological examination. The patient's symptoms responded to a combination of immunosuppressive drugs, with no interval change in the size of the mass on radiological examination after fifteen months.

Conclusion: Our case illustrates that the diagnosis of sclerosing mesenteritis can be difficult preoperatively. Tissue diagnosis is absolutely essential to avoid misdiagnosing a malignancy as sclerosing mesenteritis on radiological appearance. Judicious use of immunosuppressive therapy can limit progression of the condition, delaying the need for surgery.

Keywords: Sclerosing Mesenteritis

9.49 TRANSMISSION OF TUBERCULOSIS AMONG HOUSEHOLD CASES FROM KARACHI, PAKISTAN

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Objective: Tuberculosis remains a serious threat to public health worldwide specifically in the South Asian region including Pakistan. Molecular typing methods are powerful tools for the detection of the transmission pattern of *M. tuberculosis* strains. This study aimed to characterize *M. tuberculosis* isolates from household contact tuberculosis patients using mycobacterial interspersed repetitive unit (MIRU) - variable number of tandem repeat (VNTR) typing.

Method: 107 TB cases were recruited from patients presenting to field clinics by Marie Adelaide Leprosy centre (MALC) in Karachi during 2006-2009. These included individuals from 47 different households were identified as index cases. *M. tuberculosis* strains isolated from all patients were genotyped using 15-loci based MIRU-VNTR methods. Clustering was determined using the Bionumerics software program.
Results: Of 107 *M. tuberculosis* cases, 26 (24%) isolates grouped into 12 clusters of two (n= 10) and three isolates (n=2). Eleven isolates (10%) from 5 households had identical MIRU-VNTR patterns for index and contact cases. 10 isolates from 3 households exhibited similarity (7%) as well as dissimilarity (3%) among the index and contact cases. A further 30 isolates (28%) showed dissimilarity at 1-3 MIRU-VNTR loci (80-93% homology) indicating probable transmission in 14 households.
Conclusion: While effective antituberculous therapy remains a cornerstone of disease control. Our data suggesting transmission of TB among the house hold contacts in 45% of cases supports the need to introduce effective educational measures to limit disease spread in families.

Keywords: Tuberculosis, MIRU-VNTR , households

9.50 NOSOCOMIAL INFECTIONS IN THE ICU: PENS AND SPECTACLES AS FOMITES.

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Objective: Nosocomial infections remain a serious problem in Intensive Care Units resulting in high morbidity, mortality and healthcare cost. Significant research has been done on various modes of transmission of these infections, however contamination of pens and spectacles has not yet been investigated satisfactorily. We investigated the significance of these objects as potential carriers of pathogens.

Method: Our research included plastic pens and spectacles from medical personnel assigned to the ICU in AKU. We approached these medical personnel and took a culture swab sample from the surface of their writing pen and/ or daily use spectacles. We

made 7 rounds to the ICU over a period of 3 weeks and each time we took an average of 9 samples, giving us a total sample size of 60 pens/ spectacles. We did not take more than one sample from the same paramedic. These swabs were sent to AKU's Microbiology lab for culture analysis.
Results: Out of a total of 60 culture swabs, 55 were from pens and 5 were from spectacles. Our cultures grew organisms on 3 pen samples (5.5%) and 1 spectacle sample (20%). 2 positive pen cultures grew *Acinetobacter*, 1 grew *Candida* along with *Acinetobacter*, while the spectacle culture grew vancomycin resistant *Enterococcus Faecium* (VRE).

Conclusion: Fomites such as pens and spectacles are important vectors for transmission and spread of nosocomial infections. These results highlight the need to investigate the significance of such fomites in greater detail and at a greater scale. Practices such as frequent hand washing and disinfection of such objects need to be encouraged to a greater extent.

Keywords: Infections, ICU, Fomites

9.51 KNOWLEDGE AND ATTITUDE REGARDING INFLUENZA VACCINATION AMONG HEALTH CARE PROVIDERS IN A TEACHING HOSPITAL OF KARACHI"

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Objective: Influenza a contagious disease is a major public health concern Influenza vaccination is main stay of efforts to reduce substantial health burden of seasonal influenza. Knowledge and attitudes of health care workers plays vital role in acceptance of influenza vaccination by public. To determine knowledge and attitude regarding influenza vaccination among health care providers in a teaching hospital of Karachi.

Method: Study was conducted in Aga Khan university hospital on health care providers which included attending physicians ,postgraduate trainee,interns,medical officers and nurses of family medicine and medicine.sample size was 167.Study conducted between 2010 to 2011.

Results: Out of 167 participants 57.5% had adequate knowledge and 42.5% had inadequate knowledge while looking at the attitude 86.8% had positive while 13.2% had negative attitude towards influenza vaccine. Variable showed significant results with Gender (p=0.04) ,Job category (p=0.03) and Area of practice (p=0.05).

Conclusion: Our study shows adequate knowledge and positive attitude towards influenza vaccination in majority of health care providers in our setting. Further studies are needed in other set up to assess knowledge and attitude and to compare results. Health policy should include annual influenza vaccination of health care providers. More over educational material should be developed for reinforcement in patients regarding influenza and its vaccine so that health care provider can use it as a teaching material for patients.

Keywords: Influenza vaccine , health care provider , knowledge and attitude

9.52**EVALUATION OF HUMAN CYTOMEGALOVIRUS SEROPREVALENCE IN SUBGROUPS OF THE POPULATION IN SINDH, PAKISTAN**

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Objective: Human Cytomegalovirus (HCMV) is a ubiquitous pathogen. Prevalence in adults varies widely (40-100%) and is dependent on the geography and the socioeconomic status of the population. An earlier reported study from Pakistan had limitations in terms of sample size and inadequate selection criteria. The objective of this study was to determine seroprevalence of HCMV infection in subgroups of a population living in the Sindh province of Pakistan.

Method: We are aiming for 1000 serum samples and to date we have collected 259 samples of which 223 samples were stratified into rural (n=188) and urban (n=35) groups. Our study participants represent employees of Aga Khan University, Karachi and residents of Jam Goth, Malir and Radho Jokhio Goth, Gadap. A questionnaire was used to collect socio-demographic data. A commercial ELISA kit was used to detect HCMV IgG and IgM antibodies.

Results: The overall prevalence of HCMV infection was 93.43% in individuals = 18 years old. A marginally significant association between age and chronic HCMV infection was observed (p=0.065). HCMV prevalence increased gradually with age, from 82.6% in 18 to 20 years old to 100% in > 60 years of age. HCMV prevalence differed significantly between rural (95.7%) and urban (74.3%) groups (p=0.000). Males and females were found to be almost equally infected. The overall HCMV-IgM seropositivity was 2.31% suggesting acute infection. **Conclusion:** This preliminary data of HCMV-IgG seroprevalence indicate that HCMV infection is very high in the local population. In the future, we intend to perform the immunological assays to study the impact of HCMV infection on general health of the local population.

Keywords: Human Cytomegalovirus, Seroprevalence, Pakistan

9.53**HIV-1 SUBTYPE DIVERSITY AND ASSOCIATION OF HIV INFECTION WITH HLA CW*04**

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Objective: HIV-1, group M subtypes A, B and C are found to be predominant in global HIV epidemics. HIV-1 infection is mainly controlled by cytotoxic T cells that recognize HIV-1 epitopes (protein fragment) in association with MHC-I or HLA-I proteins. The HLA class I is comprised of three main types called A, B and C. HLA-C, and its variant HLA Cw*04, has shown to play an important role in HIV infection. In this study, we have adopted a bioinformatics approach to investigate diversity among different HIV-1 subtypes and have attempted to explore the association of HLA Cw*04, and its variations,

with HIV-1 infection.

Method: HIV-1 gag nucleotide and protein sequences were retrieved from NCBI. Sequence alignment and phylogenetic tree construction was done using Clustal, on EMBL- EBI-website. Ensemble was used to explore variations in HLA Cw*04 gene and their possible association with HIV-1 infection. **Results:** Our results revealed that HIV-1 subtype A was closely related to C (85% similarity) and G (86% similarity), while subtype B was closely related to subtype D (91 % similarity). Further, subtypes have evolved differently from each other (distance in the range of 0.01- 0.03). Moreover, certain SNPs such as T/C, G/A, T/C/G, at p21.3 locus on chromosome 6 in HLA Cw*04 showed to have role in HIV infection either in causing progression or in control.

Conclusion: It is concluded that evolution might have favored certain subtypes in HIV-1 global epidemics. Further, HLA Cw*04 and its variants play vital role in HIV infection. This information will be helpful in exploring further insights into the important role of HLA-Cw*04 to manage HIV infection.

Keywords: HIV-1, HLA Cw*04, SNP

9.54**ASSESSMENT OF HEPATITIS C VIRUS AND HUMAN CYTOMEGALOVIRUS CO-INFECTION IN A RURAL POPULATION OF KARACHI, PAKISTAN**

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Objective: Human Cytomegalovirus (HCMV) is an immunodominant pathogen. Its presence can have detrimental effects on the host immunity. Hepatitis C virus (HCV) infection is a major health problem in Pakistan with an average adult prevalence of 6%. Co-infection of HCMV and HCV may deteriorate the prognosis of HCV infected patients. The objective of the present study was to determine the prevalence of HCV and HCMV co-infection in a rural population of Karachi, Pakistan. **Method:** Blood samples (5ml each) from study participants (n=182) between the age group 18-70 years were collected from villages of Gadap town, near Karachi, Pakistan. Total RNA was extracted by Trizol method. HCV RNA was detected by nested reverse transcription and real time PCR. HCMV IgG and IgM antibodies were detected by ELISA according to the manufacturer instructions.

Results: An overall prevalence of HCV (18.7%) was detected. A progressive increase with age was noted (p = 0.022). More females (23.5%) than males (14.9%) were found to be infected with HCV. The HCMV IgG and IgM seroprevalence was 96.2% and 2.7% respectively. All HCV infected women were found to be HCMV-IgG seropositive compared to 86.7% co-infections in males. Among HCV negative individuals, IgG seroprevalence appears to be significantly high with increasing age (p = 0.024). No striking trends for HCMV-IgM were observed in the studied population.

Conclusion: The prevalence of HCV and HCMV infections is high in the rural population studied. The presence of dual

infection may affect the disease outcome in HCV positive individuals and it may also give rise to immunosenescence in HCV negative individuals.

Keywords: Human Cytomegalovirus, Hepatitis C virus, Co-infection

9.55

LINE PROBE ASSAY FOR DETECTION OF RIFAMPICIN AND ISONIAZID RESISTANT TUBERCULOSIS IN PAKISTAN

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Objective: Early detection of drug-resistant tuberculosis is important for reducing transmission. Advanced rapid diagnostic tests are promising, but due to regional variation in Mycobacterium tuberculosis strains that may affect performance these tests need reassessment in endemic areas.
Method: Resistance to rifampicin (RIF) and isoniazid (INH) in 108 smear positive pulmonary tuberculosis samples was detected using a line-probe assay [GenoType® MTBDRplus (Hain Lifescience, GmbH, Nehren, Germany)]. Results were compared with susceptibilities performed using agar proportion.
Results: In comparison to the agar proportion method, the detection rate (and specificity) of resistance using MTBDR plus was 92.5% (98.2%) for RIF, and 76.3% (100%) for INH. Mutations in codons 531 and 533 of rpoB gene (62% S531L) were responsible for 67.9% of RIF resistance. S315T mutation of katG gene was detected in 55.9% and inhA promoter mutation at positions -15 (C15T) in 11.9% of INH resistant isolates. Four phenotypically RIF-resistant and 14 INH-resistant strains were not detected by MTBDRplus. Sequencing these strains revealed mutations in 4 strains; 2 in rpoB gene S531W, del518 and 2 in katG genes W300L, S315N. Hence two phenotypic RIF-resistant and 13 phenotypic INH-resistant strains were not detected by the commercial line probe assay.

Conclusion: This study shows that MTBDRplus has a high detection rate for RIF resistance; however, additional probes need to be included in the assay to improve detection of INH-resistant MTB strains from Pakistan.

Keywords: tuberculosis, MTBDRplus, Pakistan

9.57

SERUM CXCL10 LEVELS ARE CORRELATE WITH DISEASE SEVERITY AND RESPONSES TO TREATMENT IN TUBERCULOSIS

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Objective: Treatment of tuberculosis remains a challenge due to the intransigence of Mycobacterium tuberculosis to antibiotic

treatment and the prolonged anti-tuberculous regimen required. Response to treatment is monitored by clinically but these may be difficult to identify in some patients and additional biomarkers of host recovery from infection are required. CXCL10 is a small chemotactic chemokine produced by T cells and macrophages. It is induced by IFN-gamma and is found to be a marker of host inflammatory responses.

Method: Untreated patients with smear positive pulmonary TB (PTB, n= 237) were recruited through the OJHA Institute for Chest Diseases. Patients had minimal (min-PTB, n=69), moderate (mod-PTB, n=85) or far advanced (adv-PTB, n=83) disease, by radiological assessment. Serum was collected from whole blood of patients upon recruited and also at 12 weeks post-treatment. CXCL10 levels were measured in serum patients at 0 and 12 weeks.

Results: Prior to treatment, serum levels of CXCL10 were significantly raised in adv-PTB as compared with the min-PTB (p=0.023) and mod-PTB (p=0.014) groups. Following 12 weeks of treatment, serum CXCL10 levels decreased in patients belonging to the placebo (p<0.001) and the vitamin D treatment (p<0.001) arms. After treatment, serum CXCL10 levels were comparable between min-PTB, mod-PTB and adv PTB groups.
Conclusion: Our data suggests CXCL10 as a marker of infection which can be used to monitor response to treatment in TB patients.

Keywords: tuberculosis, CXCL10, therapy

9.58

SERUM CXCL10 LEVELS ARE RAISED IN PATIENTS WITH DENGUE VIRUS INFECTION

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Objective: Dengue virus (DV) is a RNA Flavivirus, transmitted to humans via mosquito bite. DV are prevalent in tropical and subtropical regions and infect 50-100 million people per year. In Pakistan, DV infections in 2011 are increasing particularly in Punjab, causing morbidity and mortality. Pathogenesis of DV is associated with increasing proinflammatory cytokines such as TNF, IL6 and chemokine CXCL10. CXCL10 has been shown to be predictive of infectious viral diseases. Here we investigated whether CXCL10 was correlated with DV infection as determined by IgM positivity to the virus. To investigate serum CXCL10 levels in patients positive for DV IgM.

Method: Serum samples were tested for DV using the PANBio IgM ELISA assay, PANBio, USA. Randomly selected samples received in AKUH during September 2011 were studied. Serum CXCL10 was tested by ELISA using recombinant standards and antibodies, Pharmingen, USA. CXCL10 was tested in Dengue Virus IgM positive (n= 171); DV IgM borderline (BL, n=25); clinical samples DV IgM negative (n=20) and healthy endemic controls (EC, n=33).

Results: Serum CXCL10 levels in DV IgM positive (p<0.001) and IgM BL (p=0.001) samples was significantly raised as compared with DV IgM negative controls. Similarly, CXCL10 was raised IgM positive and BL groups as compared with EC

($p < 0.001$, $p < 0.001$). CXCL10 levels were positively correlated with IgM concentrations in positive samples ($\rho = 0.212$, $p = 0.005$) but not correlated in BL samples ($\rho = 0.091$, $p = 0.672$).
Conclusion: Our data indicates increasing CXCL10 levels with DV infection and suggest this as a biomarker of viral pathogenesis.

Keywords: Dengue, CXCL10, infection

9.59

GAMETOCYTE CARRIAGE IN MALARIA PATIENTS

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Objective: Gametocytes are sexual stages of Plasmodia and involved in transmission of disease to the vector and continue the life cycle of the parasite. Malaria treatment aims primarily to eliminate the asexual blood stages that cause illness and reducing carriage of gametocytes is critical for limiting malaria transmission and the spread of resistance. We aim to look at the gametocyte carriage in malaria patients.

Method: Data was collected from Aga Khan University Hospital clinical laboratory and its collection points during 2010-2011 from patient presenting with symptoms of malaria. Microscopic examination of Leishmann stained blood films for malaria parasite was done by an expert microscopist

Results: We observed a total of 310 Malaria patients from August 2010 to July 2011 and 70% (281) were infected with P.vivax and 30% (32/310) were P.falciparum positive. Gametocytemia was 62% in P.falciparum infections compared to P.vivax 22%. Hemoglobin was low in patients with sexual stages of parasite.

Conclusion: Gametocytes play an important role in transmission of disease and may spread resistant strains of Plasmodia.

Keywords: malaria, gemetocytes, transmission

9.60

THE ROLE OF SRC KINASE IN THE BIOLOGICAL PROPERTIES OF ACANTHAMOEBA CASTELLANII

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Objective: Acanthamoeba are the causative agents of fatal granulomatous encephalitis. Haematogenous spread is thought to be a primary step followed by blood-brain barrier penetration in the transmission of Acanthamoeba into the central nervous system but the associated molecular mechanisms remain incompletely understood. Here, we evaluated the role of Src, a non-receptor protein tyrosine kinase in the biology and pathogenesis of Acanthamoeba.

Method: Src kinase specific inhibitor, PP2 (4-amino-5-(4-chlorophenyl)-7-(t-butyl) pyrazolo [3,4-d] pyrimidine) and its

inactive analog, PP3 (4-amino-7-phenylpyrazolo[3,4-d] pyrimidine) were used to determine the effect of Src kinase inhibition on Acanthamoeba growth and its biological properties like phagocytosis of non-invasive bacteria E. coli K12 and invasion of amoeba by pathogenic E. coli K1. Zymography assay was performed to evaluate the effect of Src kinase inhibition on protease secretion by Acanthamoeba. Moreover, we also studied the role of Src kinase in the adhesion and cytotoxic effects of Acanthamoeba onto primary human microvasculature endothelial cells (HMECs).

Results: Inhibition of Src kinase by PP2 but not PP3 had detrimental effects on the growth of A. castellanii. Interestingly, Src kinase inhibition hampered the phagocytic ability of A. castellanii, as measured by decreased uptake of non-invasive bacteria. On the contrary, invasion of Acanthamoeba by the pathogenic bacteria was enhanced. Zymographic assays revealed reduced extracellular protease activities of A. castellanii upon inhibition of Src kinases. However, Src kinase inhibition had no significant effect on A. castellanii adhesion and cytotoxicity on HBMEC cells.

Conclusion: For the first time, our findings demonstrated that Src kinase is involved in A. castellanii proliferation, protease secretions and phagocytic properties. Conversely, invasion of Acanthamoeba by pathogenic bacteria was stimulated by Src kinase inhibition.

Keywords: Acanthamoeba, Src, PP2

9.62

IMPLEMENTING THE CARBAPENEM INTERCHANGE GUIDELINES IN A TERTIARY CARE TEACHING HOSPITAL OF PAKISTAN

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Objective: Antibiotic interchange is a well known concept. It is intended to decrease the prevalence of resistance, provision of cost effective therapy and reduce the occurrence of adverse drug reactions. Carbapenem is a group of antibiotics with broad antibacterial coverage including multidrug resistant strains. Two antibiotics of this class, meropenem is usually given in dosing of 1 g Q8H and imipenem/cilastatin in dosing of 500 mg Q6H. The cost of therapy with each of these is substantially different. Therapy with meropenem and imipenem/ cilastatin costs around US \$ 70 and US \$ 50/day respectively. Due to huge cost difference between the two, a cost effective therapeutic interchange is possible. Aga Khan University Hospital (AKUH) is a tertiary care teaching hospital. The medication management system is overseen by its Pharmacy & Therapeutics Committee (P & TC). Antibiotic subcommittee of the P & TC regulate the use of antibiotics in the hospital and made certain guidelines for rational use of broad spectrum antibiotics.

Method: Hospital P & TC and Antibiotic Subcommittee mandated the pharmacy department to implement the automatic meropenem to imipenem interchange except for a set of exclusion criteria. For the implementation of interchange program, following steps were taken • Staff education and training via flyers and newsletters • Computer software upgrades • Efficacy and adverse events

monitoring • Follow-up discussions with physicians • Changes in hospital antibiogram (for antimicrobials)

Results: Over the period of 15 months, a total of 205 interventions were made in order to switch the orders of meropenem to imipenem/cilastatin. This resulted in the patient cost savings of US \$12000. No any CNS related ADR was reported with imipenem after the interchange. The overall compliance rate was 95%.

Conclusion: Carbapenem interchange was successfully implemented in the hospital, resulting in great patient cost savings.

Keywords: Antibiotic Interchange and Cost Effectiveness, Implementation of Carbapenem Interchange Program

9.63

THE TYPE III SECRETION SYSTEM IS INVOLVED IN ESCHERICHIA COLI K1 INTERACTIONS WITH ACANTHAMOEBA

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Objective: The type III secretion system among Gram-negative bacteria is known to deliver effectors into host cell to interfere with host cellular processes. The type III secretion system in *Yersinia*, *Pseudomonas* and Enterohemorrhagic *Escherichia coli* have been well documented to be involved in the bacterial pathogenicity. The existence of type III secretion system has been demonstrated in neuropathogenic *E. coli* K1 strains. Here, it is observed that the deletion mutant of type III secretion system in *E. coli* strain EC10 exhibited defects in the invasion and intracellular survival in *Acanthamoeba castellanii* (a keratitis isolate) compared to its parent strain. Next, it was determined whether type III secretion system plays a role in *E. coli* K1 survival inside *Acanthamoeba* during the encystment process. Using encystment assays, our findings revealed that the type III secretion system-deletion mutant exhibited significantly reduced survival inside *Acanthamoeba* cysts compared with its parent strain, EC10 ($P < 0.01$). This is the first demonstration that the type III secretion system plays an important role in *E. coli* interactions with *Acanthamoeba*. A complete understanding of how amoebae harbor bacterial pathogens will help design strategies against *E. coli* transmission to the susceptible hosts.

Keywords: *Acanthamoeba*, *E. coli*, Type three secretion system

9.64

DENGUE VIRUS INFECTION AS A RECURRING SEASONAL EPIDEMIC IN PAKISTAN

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Objective: The Dengue virus (DV) is member of family flaviviridae and is transmitted to the people through the bite of

mosquitoes, *Aedes aegypti* and *Aedes albopictus*. Infection with DV can result in wide disease spectrum from a mild fever to life threatening dengue hemorrhagic fever and dengue shock syndrome. Symptoms of classic dengue fever following 5-8 days incubation period include, rash, severe headache massive vomiting, chills and malasia. Incidence of DV infection has increased since 2006 in Pakistan. It has been occurring seasonally and this report describes its occurrence in 2011. **Method:** Serum samples were tested in Molecular Pathology from January to December 2011. Dengue IgM was tested using Pan Bio Capture ELISA kit.

Results: Positivity of DV samples was found to increase from 10% (Jan –July 2011) to 20% in August 2011, when sample size doubled to 396. In September 2011, 2166 samples were tested of which 511 (23%) were DV positive, of those 269 (12%) were from Punjab; 201 (9%) from Sindh; 37(2%) from KPK and 5 (0.2%) from Baluchistan. From Punjab 6 (22%) positive cases were from Northern Punjab, 77 (46%) from Southern Punjab and 186 (55%) from Central Punjab during September 2011. This trend of positivity is continuing during October and will be described up to December 2011 in this study.

Conclusion: This study describes a rapid increase in DV infection mostly in Punjab post-monsoon flooding during August – September 2011. Public health measures should be taken in advance to avoid such seasonal epidemics.

Keywords: DV

9.65

ISOLATION AND IDENTIFICATION OF ACANTHAMOEBA AND BACTERIA IN VARIOUS SAMPLES COLLECTED FROM AKUH.

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Objective: *Acanthamoeba* is a free-living protozoan with a worldwide distribution in a variety of natural and artificial habitats. *Acanthamoeba* spp. can cause infections such as granulomatous amoebic encephalitis and amoebic keratitis. **Objective:** To evaluate the presence of bacteria and *Acanthamoeba* spp. in the biofilms and dust in hospital environment. **Method:** 30 samples were collected from different environments in AKUH hospital at Karachi. The samples collected were inoculated into 1.5% nutrient agar, to isolate bacteria; and into 1.5% non-nutrient agar with an overlaid *Escherichia coli*, to isolate free-living amoeba. Of the 30 samples analyzed, (100%) showed bacterial growth and thirteen (43%) isolates were identified as morphologically belonging to the *Acanthamoeba* genus. The amoeba were identified according to the morphological criteria of Page (A new key to fresh water and soil gymnamoebae, Freshwater Biology Association, Ambleside, UK, 1988) and confirmed by PCR using Chelex: Biorad method. Bacterial identification was done by biochemical methods i.e., catalase, MSA, oxidase, starch hydrolysis and coagulase tests. **Results:** All bacteria were identified as gram positive, in which 63% were *Bacillus* and 53% were *Corynebacterium*. IC bacteria were isolate and identified from two confirmed samples of *Acanthamoeba*. (Khan. NA)

Conclusion: Acanthamoeba found in extra hygiene environment of hospital and it also harbor some of gram positive bacteria.

Keywords: Acanthamoeba, environmental dust, hospital

9.66

MOLECULAR DIAGNOSTIC ASSAYS FOR THE DETECTION OF CRIMEAN-CONGO HEMORRHAGIC FEVER VIRUS

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Objective: Crimean-Congo Hemorrhagic Fever (CCHF) virus belongs to the genus Nairovirus of the Bunyaviridae family; it is a RNA virus endemic to Middle-East and Pakistan. CCHF is a zoonotic disease maintained in nature by cycles between reservoirs of ticks and mammals. Severe disease occurs in humans, who usually acquire the virus through a tick bite or contact with infectious material. The viral incubation period is about 2-9 days with a general case fatality rate (CFR) of ~50%. However, increased CFR are reported, particularly in nosocomial circumstances where early diagnosis has been difficult. CCHF requires rapid diagnosis for case identification and isolation and containment. To compare nested PCR and real-time PCR assays for diagnosis of CCHF virus.

Method: Samples received in the laboratory, AKUH (2006-2010) were tested. Viral RNA was extracted using Nucleospin viral RNA kit. For nested PCR, a reverse transcriptase polymerase chain reaction (RT-PCR) was performed employing primers to the S segment of CCHF. Real-time PCR assay was performed directly on viral RNA using sequence specific primers and a fluorescent probe on Light Cycler II system, Roche, USA. **Results:** We determined the use of the real-time PCR probe based assay in 20 clinical specimens previously tested using the nested PCR. Of these samples, 6 were positive and 14 were negative using both methods for CCHF virus detection. **Conclusion:** The real-time PCR assay allowed detection of CCHF virus within 3 hours as compared with 10-12 hours for the nested PCR method. Therefore, this is a suitable rapid assay for detection of CCHF virus in suspected clinical specimens.

Keywords: CCHF, PCR, RNA

9.67

T.TRICHIURA INFECTION; AN UNUSUAL DIAGNOSIS VIA COLONOSCOPY OF A PATIENT WITH INTERMITTENT DIARRHEA AND MULTIPLE COMORBIDITIES: A CASE REPORT

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Objective: Introduction: Trichuriasis is a worldwide parasitic infection most prevalent in tropical and subtropical areas caused

by the whipworm *Trichuris trichiura*. The global burden of disease is 6.4 million DALY's (disability adjusted life years) lost for *T.trichiura* alone.

Method: Case: In 1999 a diabetic and asthmatic middle aged woman was first brought to Aga Khan University Hospital presenting with anorexia, continuous fever, and shortness of breath. She was diagnosed to have a Neuro-endocrine tumour of the pancreas involving the body and tail; resection performed. In 2005 recurrence of the Neuro-endocrine tumour occurred in the head of the pancreas which was then resected. In 2010 on examination she presented with fever, diarrhea and productive cough. TB was diagnosed, and ATT (anti tuberculosis therapy) treatment was initiated. In June 2011 due to deteriorating health she was admitted with intermittent diarrhea. Initial tests showed metabolic acidosis, no eggs of any parasite in stool, large no of pus cells in stool and no melen. 7 stool exams done during the year were negative for parasite eggs and ova. Physical examination revealed drowsiness, and left hypochondrial pain. Treatment was initiated for severe gastroenteritis. However on colonoscopy helminth worm attached to the mucosa of the caecum was seen and removed for diagnosis. Parasitological examination revealed a female worm of *T.trichiura*. **Results:** This case highlights the use of colonoscopic examination in diagnosing helminth infections. Literature search puts light on the fact that only 12 such cases have been previously reported. In patients who are immunocompromised or have unremitting diarrhea of unknown etiology, colonoscopy is advised.

Keywords: *Trichuris Trichiura*, immunocompromised, multiple comorbidities

9.68

ESTABLISHMENT AND ANALYSIS OF HEPATITIS C VIRUS GENOTYPE 3A REPLICON SYSTEM

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Objective: Hepatitis C Virus is a major public health concern affecting 170 million people across the globe. In Pakistan, the HCV prevalence in adults is 6%, with Genotype 3 (GT3) reported to be the most prevalent (75-90%), among which subtype 3a is being the most common. Chronic infection occurs in 50-80% of GT3 cases, eventually leading to cirrhosis and hepatocellular carcinoma. In the absence of a productive viral culture system, the underlying mechanism of hepatocellular injury, viral replication and therapeutic targets are only partly understood. This obstacle has been partially overcome by the development of replicon systems; which are the only available tools allowing the study of HCV replication and development of anti-HCV therapies. Even though efficient RNA replication systems have been developed for genotype 1a, 1b and 2a, a replicon system for subtype GT3a is much needed. **Objective:** To develop HCV GT3a sub-genomic replicon system (spanning ~ 9.6Kb in size) from serum samples of HCV GT3a patients.

Method: Total RNA was extracted using the Trizol reagent from serum samples of 3 patients. cDNA synthesis was carried out using specific primers for conserved 5'UTR region followed by

Nested PCR amplification. PCR products were visualized by ethidium bromide 2% agarose gel electrophoresis. **Results:** The Nested PCR amplification resulted in 297bp fragment for 5'UTR.

Conclusion: Future Perspective: PCR amplifications for HCV non-structural (NS) genes (NS3, NS4 and NS5-3'UTR) is underway which will be followed by cloning into expression vector. GT3a subgenomic replicon will be transfected into Human Hepatoma cell line (Huh-7). Neomycin-resistant clones will be isolated, expanded and analyzed for expression of viral RNA, and proteins (NS3, NS4a/b and NS5a/b).

Keywords: Hepatitis C, Genotype 3a, subgenomic Replicon

9.69

DIFFERENTIAL IFN- RESPONSES TO ESAT6 AND M. TUBERCULOSIS ANTIGENS DUE TO THEIR REGULATION OF SOCS1 GENE EXPRESSION

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Objective: SOCS1 molecules downregulate protective host IFN-responses. ESAT6-induced IFN-responses are thought to be predictive of latent and or active TB but ESAT6-induced IFN- is less effective for diagnosis in endemic regions. Live M. tuberculosis activates SOCS1 but little is known about the direct effect of its antigens. We compared ESAT6, M. tuberculosis sonicate antigen (MTBs) and live M. tuberculosis-induced IFN- and SOCS1 gene expression in TB patients and healthy controls. **Method:** PBMCs were stimulated with ESAT6, MTBs and live M. tuberculosis. IFN-, CXCL9 and CXCL10 mRNA expression were determined in patients with pulmonary (PTB, n=33), extrapulmonary (ETB, n=66) tuberculosis and EC (n=30) via RT-PCR.

Results: ESAT6-induced IFN- expression was greater in TB than ECs ($p=0.034$). In TB, live M. tuberculosis - induced IFN-mRNA titers were lower than in response to MTBs ($p<0.001$) and ESAT6 ($p<0.001$). SOCS1 mRNA titres in live M. tuberculosis stimulated PBMCs were higher in TB than in EC ($p=0.049$). In ECs, ESAT6-induced SOCS1 expression was lower than by live M. tuberculosis ($p<0.001$) and in TB, ESAT6-induced SOCS1 mRNA levels were reduced compared with MTBs stimulation ($p=0.042$). SOCS1 responses were compared between patients classified with PTB, less severe ETB (L=ETB) and severe ETB (D-ETB). ESAT6- and MTBs- induced SOCS1 mRNA titers did not differ between these TB groups. However, live M. tuberculosis-induced SOCS1 expression was higher in PTB ($p=0.0074$) and D-ETB ($p=0.032$) as compared with L-ETB.

Conclusion: This data indicates that increased ESAT6-induced IFN- is concomitant with decreased SOCS1 expression in TB. Variable IFN- responses may reflect differential SOCS1 modulation and determine the inflammatory cytokine profiles observed across the TB disease spectrum.

Keywords: SOCS1, M. tuberculosis, ESAT6

9.70

INCIDENCE AND ANTIBIOTIC SUSCEPTIBILITY PATTERN OF KLEBSIELLA PNEUMONIAE NEONATAL SEPSIS IN A NEONATAL ICU OF KARACHI, PAKISTAN.

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Objective: Klebsiella pneumoniae (Kp) is an important nosocomial pathogen with increasing drug resistance associated with high morbidity and mortality in neonatal intensive care setting (NICU). We report the incidence and antibiotic susceptibility pattern of Kp in our NICU over the last five years (2006-2010).

Method: Medical records of all neonates with discharge diagnosis of sepsis due to Kp from Jan 2006 till – Dec 2010 were retrieved and reviewed by using hospital information management system. Demographic features, gestational age, date and year of admission and antibiotic susceptibility of isolates were recorded. Kp incidence per 1000 NICU admissions and incidence of early or late onset Kp sepsis were calculated. The study was approved by the hospital ethics review committee of the Aga Khan University

Results: Ninety-nine neonates out of 2355 developed Kp sepsis during the five year period. The overall incidence of Kp sepsis was 4.2% (42/1000 NICU admissions); highest was 63/1000 in the year 2010. Majority were males (64%) and premature neonates (61%). Twenty-one developed early onset neonatal Kp sepsis. High level of antimicrobial resistance for ampicillin, gentamicin, aztreonam and cephalosporins were noticed. Almost all isolates were extended spectrum beta lactamases (ESBL) producing. Increasing trend of resistance was seen for amikacin, fluoroquinolones, piperacillin / tazobactam and carbapenem. In 2010, 31% of the isolates were carbapenem resistant. No significant difference in antibiotic susceptibility was observed for early vs. late onset neonatal Kp sepsis.

Conclusion: This study documents the rise in Kp incidence and carbapenemase resistant Kp at our NICU in the last five years. There is a need for continuous surveillance to have timely information on the antibiotic susceptibility of these organisms.

Keywords: Klebsiella pneumoniae, Carbapenem resistance, incidence in NICU

9.71

SEASONAL TRENDS OF COMMON PEDIATRIC INFECTIOUS CAUSES LEADING TO HOSPITALIZATION IN KARACHI, PAKISTAN.

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Objective: Infectious diseases are the commonest cause of pediatric illness all around globe. Industrialization, global warming, greenhouse effect and ozone depletion impact on environment. These environmental changes and increasing multidrug resistant strain of microorganism mutually affect humans. This study aims to observe the changes in seasonal

variation of common pediatric infectious etiologies leading to hospitalization in Karachi, Pakistan from 2006-2010.

Method: It is retrospective analysis of all children (15 year or less) who were discharged with the diagnosis of gastrointestinal syndromes e.g., “acute gastroenteritis” “dysentery” “cholera” “typhoid and paratyphoid” “acute viral hepatitis A and E” ; respiratory syndromes e.g., “bronchiolitis” “pneumonia” “measles” “tuberculosis”; other infectious etiologies including “malaria” “dengue” “meningitis”; and non-infectious etiologies “asthma” and “Kawasaki disease” during 2006-2010 from the Aga Khan University hospital, Karachi Pakistan.

Results: For the gastrointestinal infectious syndromes; 4597 children were discharged with diagnosis of acute gastroenteritis; two seasonal peaks May-August and Nov and Jan; highest number of hospitalization was in August. Dysentery was the discharge diagnosis of 265 patients; with maximum number of patients in June-Sept and peak in September. Typhoid fever was the discharge diagnosis of 1659 patients; with maximum number during July-Nov and peak in September. Paratyphoid fever was the discharge diagnosis of 75 patients; with maximum number during Dec-April and peak in July. Hepatitis A and E was the discharge diagnosis of 509; with maximum number in June-Nov and peak in September. For the respiratory infectious syndrome; Bronchiolitis was the discharge diagnosis of 1252; with maximum number in Aug-March and peak in September. Pneumonia was the discharge diagnosis of 1974; two seasonal peaks Dec-March and Aug-Oct; highest number of hospitalization was in February. Tuberculosis was the discharge diagnosis of 268 patients; with maximum number during Feb-June and peak in March and April. For other infectious etiologies; Meningitis was the discharge diagnosis of 636 patients; with maximum number during May-Sept and peak in June. Dengue fever was the discharge diagnosis of 509 patients; with maximum number during Sept-Nov and peak in October. Malaria was the discharge diagnosis of 266 patients; with maximum number during Sept-Nov and peak in September. There was no seasonal variation observed for Kawasaki disease however asthma peaks during Aug-Dec; maximum in October.

Conclusion: August and September are the peak months for gastrointestinal diseases; October and November for the mosquito borne diseases and for pneumonia peak month is February. There is marked variation in seasonal pattern for bronchiolitis and acute gastroenteritis.

Keywords: Seasonal trend, Pediatric infections, Respiratory and gastrointestinal diseases

9.72

MATERNAL 25-HYDROXY VITAMIN D DEFICIENCY AND THE RISK OF CLINICAL SEPSIS AMONG NEWBORNS AND YOUNG INFANTS IN LOW INCOME URBAN AND PERI URBAN SETTLEMENTS OF KARACHI, PAKISTAN.

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Objective: Neonatal sepsis is a major killer. Poor neonatal innate and adaptive immunity is implicated as a predisposing factor. The role of vitamin D as an immune modulator agent has been suggested in the pathogenesis of various infectious diseases; deficiency has been linked to poor neonatal outcome in general. Its specific role in the outcome of neonatal sepsis has never been studied. We sought to assess the role of maternal 25-hydroxy vitamin D deficiency on the risk of clinical sepsis among young

infants in low income settlements of Karachi, Pakistan in a cohort study.

Method: From January to April 2011, 1028 pregnant women were enrolled and blood was obtained for measuring 25-hydroxy vitamin D in the last trimester of pregnancy. Newborns of enrolled mothers were followed from zero to fifty nine days of life for development of clinical sepsis. Sepsis was diagnosed using a modified checklist that has been validated by the WHO. Data were analyzed using appropriate descriptive analysis and Cox regression.

Results: Overall, there was high prevalence of Vitamin D deficiency (82%). Deficient mothers had a higher proportion that was literate (37% versus 28%) and a higher prevalence of foul smelling vaginal discharge (20% versus 14%). Cox regression showed gestational age (HR 6.2; 95% CI: 2.8, 14) and bacterial vaginosis (HR2.2; 95% CI: 1.3, 3.6) to increase the risk of sepsis. Infant birth weight was found to be protective (HR 0.6; 95% CI: 0.4, 0.9). However we were unable to see an association between maternal Vitamin D and newborn sepsis (HR0.7; 95% CI: 0.4, 1.1).

Conclusion: Vitamin D deficiency does not appear to play a role in development of newborn sepsis.

Keywords: Vitamin D, sepsis, maternal

9.73

EVALUATION OF POSITIVE PREDICTIVE VALUE OF ENZYME-LINKED IMMUNOSORBENT ASSAY AND STOOL CULTURE USED FOR THE DETECTION OF CAMPYLOBACTER SPP FROM STOOL SAMPLE

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Objective: Background Campylobacter is a gram negative, microaerophilic bacterium and is one of the most common bacterial causes of diarrheal illness in the world. Campylobacter organisms can be found everywhere and are commonly found in the intestinal tracts of cats, dogs, poultry, cattle, swine, rodents, monkeys, wild birds, and humans. Enzyme-linked Immunosorbent Assay (ELISA) and stool culture techniques used to detect Campylobacter Spp. Positive predictive value (PPV) is the proportion of subjects with positive test results who are correctly diagnosed. It is a critical measure of the performance of a diagnostic method, as it reflects the probability that a positive test reflects the underlying condition being tested for. Its value does however depend on the prevalence of the outcome of interest, which may be unknown for a particular target population. **Objective** To evaluate the positive predictive value of Enzyme-linked Immunosorbent Assay (ELISA) and stool culture used for the detection of Campylobacter Spp. from stool culture. **Method:** Methodology 50 stool samples were tested both for ELISA and stool culture out of which 13 were positive by both ELISA and Stool Culture 08 were positive by ELISA not by Culture. PPV were applied to evaluate the techniques. **Results:** Results The PPV is found to be 62%, whereas sensitivity & specificity is found to be 93% and 78% respectively. **Conclusion:** Conclusions Results shown Stool Culture correctly identifies 62% of cases which were true positive for Campylobacter Spp., while the Sensitivity of culture technique found to be 93%.

Keywords: PPV, ELISA

10.3

VON – HIPPLE LINDAU DISEASE DEPICTING LESIONS IN THE POSTERIOR FOSSA AND DORSAL SPINE AND A STRONG FAMILIAL LINK: A CASE REPORT.

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Objective: Von Hippel-Lindau (VHL) disease is a rare genetic disorder characterized by visceral cysts and benign tumors. The development of retinal and CNS hemangioblastomas, pheochromocytomas, multiple cysts in the pancreas and kidneys and an increased risk for malignant transformation of renal cysts into carcinoma are clinical hallmarks of this disease. Hemangioblastomas are usually found at multiple locations in the body. However, our case takes its uniqueness in the fact that the presence of two resembling lesions one in posterior cranial fossa and the other dorsal spinal cord at the same time without involvement of any other organ system has not been reported previously.

Results: Case Presentation: We report a case of a 32-year old female who presented with severe headache and lower extremity pain and weakness. She had a family history of her mother and two siblings expiring after a severe headache, though not confirmed by histopathology but they were suspected of having VHL. Her neurological exam showed decreased bulk and weakness in lower limbs. CT head revealed a space occupying lesion in the cerebellum, while MRI confirmed it as a right-sided lesion with enhancing nodule and non-enhancing cystic ball. Spine MRI revealed a contrast enhancing tumor behind the vertebral body of D7 to D9. Patient was diagnosed with Grade I Hemangioblastomas, falling in the spectrum of VHL and the tumors were removed in subsequent procedures. Histopathology confirmed the diagnosis.

Conclusion: This case report not only depicts a strong familial link but it also shows the possibility of two simultaneous CNS lesions involving posterior fossa and spinal cord. Since the prognosis may be improved by an earlier diagnosis, affected individuals with VHL complexes should have a cranial and spinal MRI with an abdominal CT. Affected individuals in VHL families directly benefit from screening by early diagnosis and by genetic counseling in the childbearing years. In the future, genetic screening will play a major role in identifying patients with the VHL gene. It is advised that screening of the children of patient and others in the family should be performed every year from the time they reach 13 years of age.

Keywords: VHL, posterior fossa, dorsal spine

10.4

CRANIO-CEREBRAL INJURIES IN WAR AGAINST TERRORISM – A CONTEMPORARY SERIES FROM PAKISTAN

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Objective: Terrorism-related bomb attacks on civilian populations have increased dramatically over the last decade. However, cranio-cerebral injuries secondary to improvised explosive devices or IEDs have not been widely reported in literature in the context of unarmored civilians. This series reports the spectrum of head injuries secondary to suicide and implanted bombs as encountered at the Aga Khan University Hospital, Pakistan (AKUH).

Method: The hospital database and clinical coding encompassing a 5 year period were examined for head injuries secondary to terrorism-associated blasts.

Results: A total of 16 patients were included in the case series: 9 patients were victims of suicide blasts while 7 were exposed to implanted devices. In addition to patient demographics, data analysis for our series included initial GCS, presenting neurological complaints, associated non-neurological injuries, management, discharge neurological status and the data related to complications. The management (conservative or operative) with associated complications was also noted. A follow-up record was available for 12 of the 16 patients (mean follow-up: 7.8 months), with most patients having no active complaints and otherwise improving.

Conclusion: The results of this series show that victims of suicidal and improvised bombings present with a wide range of neurological symptoms and often require individualized care.

Keywords: Traumatic brain injury, improvised explosive devices, cranio-cerebral injuries

10.5

CSF RHINORRHEA: AN INSTITUTIONAL PERSPECTIVE FROM PAKISTAN

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Objective: The management of CSF rhinorrhea has evolved over the last two decades. We present here a review of our 11 year data on CSF rhinorrhea and its management at a tertiary care hospital in a developing country, with particular reference to the diagnosis, surgical management and outcome of the disease.

Method: The medical charts of all patients with a diagnosis of CSF rhinorrhea over an 11 year period were reviewed. The etiology of CSF rhinorrhea was classified into 3 categories: spontaneous, iatrogenic and traumatic. All the patients were divided into 3 categories based on the type of management: conservative, intracranial and transnasal endoscopic groups.

Results: A total of 43 patients fulfilled our inclusion criteria and

were included in the final analysis. 11 of the 43 patients were managed conservatively while 22 underwent intracranial repairs; 10 patients had transnasal endoscopic repairs. The primary success rate for the transnasal approach was 70 % compared to 86 % for the intracranial repair. Blood loss, special Care unit (SCU) stay and total cost were found to be significantly less in the transnasal endoscopic group. CT cisternography was found to have the highest sensitivity and specificity. Further, no complications were found in the transnasal endoscopic group, while 5 patients from the intracranial group developed various complications.

Conclusion: We conclude that the transnasal endoscopic approach has comparable success rates with the intracranial approach and significantly lower morbidity.

Keywords: Cerebrospinal fluid rhinorrhea, endoscopy, Craniotomy

10.6

PREVALENCE OF BENZODIAZEPINE USE IN MEDICAL INPATIENTS IN PAKISTAN

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Objective: There is growing evidence that once started BDZs are taken for far longer than originally intended and that there use is associated with certain medical risks. The aim of our study was to find out the prevalence of BDZ use in patients admitted under care of an internal medicine service in Pakistan and to explore any associated socio-demographic variables. *Method:* All subjects admitted to the internal medical service of a tertiary care hospital in Karachi, Pakistan, over a period of three months were interviewed with respect to their BDZ use and socio-demographic, medical, and psychiatric history. *Results:* Of the 284 patients who participated in the study 36 (12.7 %) were taking a BDZ at the time of admission. In 87 % of the cases the drug had been initially prescribed by a doctor, in 75 % of cases for the treatment of insomnia. About 78 % of the patients had been taking the drug for 4 weeks or longer, and 68 % of these reported that it was their own decision to continue the drug this long. The median Diazepam Equivalent Dose was 5 mg per day.

Conclusion: The present highlights the fact that quite a significant proportion of patients admitted to medical wards are taking a BDZ for quite long durations, at the time of admission, which needs to be managed or replaced appropriately to prevent serious withdrawal symptoms. The fact that it was patients who decided to continue the drug beyond the duration advised by the prescriber emphasizes the need for educating both doctors and patients about the dependence potential of BDZs.

Keywords: Benzodiazepine use, Benzodiazepine in medicine, Out Patient use of sedatives

10.7

CONVERSION DISORDER IN CHILD, ADOLESCENTS AND YOUNG ADULTS: A 20 YEARS RETROSPECTIVE REVIEW

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Objective: Conversion disorder has been classified differently in diagnostic and statistical manual of mental diseases IV (DSM-IV) and International classification of diseases (ICD-10). Children and young adults are the main age groups presenting with it. Its presentation is peculiar with gender and geographical area. In children and young adults pseudo seizures and gait abnormalities are the main presenting symptoms. Two studies from the same institute (Aga Khan University Hospital) have reported 257 patients admitted with conversion disorder in all ages from 1989 to 2005 in total. There is a dearth of research on conversion disorder from Pakistan in children and young adults. Our aim was to give a descriptive account on conversion disorder in children and young adults by studying records of admitted patient in last 20 years at a tertiary care hospital of Karachi. *Method:* This is a retrospective study conducted at the Aga Khan University Hospital (AKUH), Karachi Pakistan. Using a computerized medical record system we retrieved total 437 records of patients with diagnosis of conversion disorder who visited from January 1990 to December 2009 i.e. 20 years. Out of 437 records only 121 were available for review

Results: There were 87 females and 34 males. Motor symptoms were seen in 34.7%, followed by pseudo seizures in 24.8% and unresponsiveness in 14% of the patients. Interestingly 40% did not report any stressor during hospital stay, whereas relationship problems were reported by 17% and family related problems in 14%. Before admission to hospital 20% had received Anti depressant, 09% Benzodiazepine, 7% Anti epileptic and 6% Antipsychotics, whereas 48 % were on no treatment. On discharge 28% (35) patients were prescribed Antidepressants, 8% (10) Benzodiazepines, 6% (07) Antipsychotics and 04 Anti epileptics. In rest 54% (65) no Pharmacotherapy was prescribed.

Conclusion: Recent studies report significant prevalence in developing countries. Child, adolescents and young adults are essential cohort to study as presentation in this age group is common and different. Establishing diagnosis gives a challenge to physicians as prospectively around 30% of patients being finally diagnosed as organic. The differences in presentation, stressors and duration of illness in this study enunciated a call to explore these phenomena in prospective study design.

Keywords: conversion disorder, child and adolescents, dissociative disorder

10.8

VIDEO-EEG: ITS ROLE IN THE MANAGEMENT OF INTRACTABLE SEIZURES AND NON-EPILEPTIC SPELLS – A REVIEW

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Objective: VEEG is cornerstone in the management and treatment of intractable seizures and pseudoseizures. 'Epilepsy Monitoring Units' helps to characterize seizure type, identify and localize seizure foci. This helps in evaluation for the Epilepsy Surgery and distinguishes 'epileptic' from 'non-epileptic' seizures. Aga Khan University Hospital is providing the VEEG monitoring facility for the last 18 months. **Objective:** The purpose of this study is to identify the role of Video-EEG (VEEG) monitoring in the diagnosis and management of intractable 'epileptic' or 'non-epileptic' events.

Method: This is a prospective cross sectional study of 60 consecutive patients referred to clinical Neurophysiology lab during the year 2009-20010. The indications were recognition of pseudoseizures, localization of seizure focus for surgery and identifying the seizure type. The VEEGs were reviewed by trained neurologist with experience in VEEG monitoring. **Results:** Fifty nine percent patients were females. Mean age of patients was 18.5 (range 1-60) years. Mean duration between the diagnosis and VEEG was 9 (ranges 1-38) years. Two common indications of VEEG were to 'rule out' pseudoseizures (46%) and to localize epileptic focus for epilepsy surgery (36%). Clinically, 32% patient had generalized and 68% had partial seizures. 65% had daily seizures. 56% patients were taken multiple antiepileptics with poor seizure control. The mean duration of VEEG recording time was 24 (range 10 - 48) hours. During VEEG recording, 1-6 clinical epileptic events were noted in 82% cases, among those, 41% cases revealed abnormal epileptic EEG activity during those events, while 59% patients showed normal EEG recording. In 7 (41%) patients who were referred with indication of pseudo seizures, 4 were epileptic as well as psychiatric, and the final diagnosis of pseudoseizure was confirmed in all of these cases, in next 41% (n = 7) who were referred for seizure focus for surgery, 5 (71%) of them were diagnosed with focal onset seizure with temporal focality while 2 of them were finally diagnosed as primary generalized seizure. The remaining 3 patients were referred for the diagnosis of type of seizure, 1 patient was diagnosed as generalized seizure while remaining 2 was reported as normal.

Conclusion: Video-EEG not only helps in the diagnosis of epileptic seizures but also facilitates to rule out non-epileptic spells. Our study, like previous western data, suggests that higher number of these patients had 'partial seizures'. These can potentially become Epilepsy Surgery candidates, to manage and treat their intractable seizures. As this is a new technology in Pakistan, further larger trails will be necessary to evaluate the importance and cost effectiveness of VEEG in this population.

Keywords: EEG, Video EEG, Seizure

10.9

LANDAU- KLEFFNER SYNDROME (LKS): A RARE DISORDER BUT WORTH TO BE RECOGNIZED EARLY – AN UPDATED STUDY

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Objective: Objective: To see incidence of Landau Kleffner syndrome in patients presented at tertiary care hospital who were misdiagnosed as focal epilepsy

Method: Methodology: All patients who referred to CNP lab between the age 3-9 years for BAEP as a part of evaluation of aphasia were interviewed and those who had history of seizures in addition to the primary symptom underwent a complementary EEG in addition to BAEP. Similarly all the patients who were referred to CNP lab for EEG as a part of evaluation of seizures were interviewed and those who had history of aphasia in addition to the seizures underwent complementary BAEP in addition to EEG. The patient who had normal BAEP and abnormal EEG from both the groups were then followed up. They were seen by pediatric neurologists and had MRI brain to exclude structural lesions.

Results: Results: A total 80 (62 male, 18 female) patients were selected. 58 (44 male, 14 female) out of 80 were initially came for BAEP and 22(18 male, 4 female) were initially came for EEG test. 8(all male) patients out of 58 were diagnosed as LKS where as 4 (3 male, 1 female) out of 22 patients were diagnosed as LKS. EEG showed focal temporal epileptiform activity with Normal BERA. MRI of all diagnosed patients was Normal. **Conclusion:** Conclusion: LKS is a rare disorder but it is important to recognize as commonly used antiepileptic medications worsen the seizures associated with this syndrome and its prognosis if also different from other seizure disorders including temporal lobe epilepsy. Vigilant observation towards CNP procedures, history and neurological examination will help physician in diagnosing syndromes like Landau Kleffner, which are there but rarely picked up in Pakistani population.

Keywords: EEG, Syndrome, Seizure

10.10

TRANSCRANIAL DOPPLER(TCD) TECHNIQUES AND NORMATIVE DATA FOR PAKISTANI POPULATION: A REVIEW STUDY.

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Background: Transcranial Doppler (TCD) is a noninvasive ultrasonic technique that measures local blood flow velocity and direction in the proximal portions of large intracranial arteries and show even very small flow volumes (1 x 1 mm). Low frequency (2-2.5 MHz) and very focused transducers are used in transcranial color Doppler. It requires the use of some acoustic windows like some thin portions of the skull bone or some natural skull foramina. TCD is operator dependent and

requires training and experience to perform and interpret results. TCD is performed by technologists, sonographers, and physicians and is interpreted by neurologists and other specialists. *Objective:* To collect the normative data for local population for Transcranial Doppler technique and to describe the normal flow velocities of major arteries at the base of the brain for Pakistani population; A hospital based review study.

Method: The temporal, the orbital and the sub occipital are the main acoustic windows used for transcranial color Doppler studies. Equipment used was DWL – EZ – DOP 202. We use phased-array transducers (2MHz & 4MHz). We select 25 normal subjects of different age groups (18 – 60 years), Mean age was 35 years. All subjects were gone through preliminary medical evaluation for fitness for job at the Aga Khan university Hospital, Karachi. All subjects were screened for HTN, IHD or any other history for stroke etc. Patients were in supine position during testing. Temporal, ophthalmic and sub-occipital windows were used. Data collected for MCA, ACA, ICA, Ophthalmic, Vertebral and Basilar arteries for its peak systolic velocities, mean velocities, PI, and depths.

Results: Normative value At AKU: Segment Mean Velocity Peak. Systolic Velocity End Diastolic Velocity PI Depth MCA 45 - 68 60 - 107 31 - 56 0.69 – 1.11 33 - 60 ACA 28 - 65 60 - 101 25- 52 0.81 – 1.93 63 - 80 ICA 30 - 60 57 - 75 28 - 51 0.60 – 1.20 62 - 75 Vertebral 29 - 57 38 - 70 25 - 45 0.63 – 1.22 50 - 65 Basilar 26 - 68 43 - 70 24 - 54 0.59 – 1.32 70 - 95 OA 16 - 30 57 - 90 15 - 25 1.28 – 3.12 41 - 55

Conclusion: The normative data for Pakistani population is very much comparable with the international normative data. In general, TCD is most useful when the clinical question pertains to certain segments of large intracranial vessels. However, in some settings, TCD can detect indirect effects such as abnormal waveform characteristics suggestive of proximal hemodynamic or distal obstructive lesions. It is portable, non invasive and less expensive but very useful investigation.

Keywords: EEG, TCD, Normative data

10.12

HEALTH PROFESSIONAL'S KNOWLEDGE ABOUT ALZHEIMER'S DISEASE AND THEIR PRACTICES IN COPING WITH THE CHALLENGES OF THE DISEASE.

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Objective: Alzheimer's disease (AD), mainly affecting people in their sixth or later decades of life, has been identified as an incurable, degenerative and terminal disease. It constitutes approximately 70% of all dementia cases and is the seventh leading cause of death. Since advancing age and genetic susceptibility are the most significant risk factors for AD, the problem this disease poses in terms of its financial and human cost cannot be underestimated. Our study is designed to identify the knowledge gaps pertaining to the major aspects of the disease. *Method:* A descriptive cross-sectional survey was undertaken at two public sector hospitals of Karachi - Jinnah and Civil. Three hundred conveniently available clinicians were recruited

ensuring their different specialties and varying levels of expertise. *Results:* The results highlighted that physicians were aware of the risk factors with 250 and 244 recognizing advancing age and inheritance as the major ones. Poor understanding of all the major symptoms was revealed except memory loss with merely 4% of the respondents not opting for it. Conditions like paranoia, perceptual motor problems and recurrent infections are major observable traits of the sufferers but were unfamiliar to most participants with 82%, 78% and 91% of them not realizing these, respectively. Alzheimer's as an incurable disease was rightly recognized by 77% but when asked if in rare cases recovery is possible more than half (58%) responded positively. Although drugs can slow down the progression of the disease as testified by an overwhelming number, neither preventive drugs have been discovered nor mental exercise has scientifically proven to delay the onset but was incorrectly identified by 47% and 59% respectively, to be possible.

Conclusion: Albeit prevention or remedy to this disease has yet not been found, it is possible to ease certain symptoms or to prolong the loss of certain vital functions of brain. For this it is necessary that an early diagnosis is made however delays may occur due to inadequate knowledge of the characteristics of the disease among clinicians. There is a lot of ambiguity in the knowledge and practices regarding this disease which necessitates that protocols are devised at institutional levels and use of medical conferences and journals are incorporated to increase the familiarity among the doctors.

Keywords: Alzheimer's disease, Health professional, Dementia

10.13

VITAMIN D STATUS IN PSYCHIATRIC PATIENTS IN KARACHI, PAKISTAN: A RETROSPECTIVE CHART REVIEW

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Objective: To study the serum levels of vitamin D in a group of Pakistani psychiatric patients. To the best of our knowledge this is first such study and will form a baseline for future research in this area.

Method: It is an observational study, conducted at Department of Psychiatry, Aga Khan University, Karachi, from January 2009 to December 2009. We reviewed medical records of 184 psychiatric patients (both inpatient and outpatients), whose vitamin D levels were carried out. Vitamin D levels were divided in three categories: deficiency (<20ng/ml), insufficiency (21-29ng/ml) and sufficiency (30ng/ml and above). Data collection form included socio-demographic details, psychiatric diagnosis and co-morbid medical diagnosis. Chi square was applied to see the association between categorical variables i.e. vitamin D levels and depression and odds ratio was calculated to determine the strength of association.

Results: : Of the 184 patients, majority (n=163; 88.6%) had low levels of vitamin D (either deficiency or insufficiency). Depression was found to be the most common diagnosis in patients with vitamin D deficiency/insufficiency (n=91, 49.4%; OR

=7.51, 95% CI 1.69 -33.33) as compared to other psychiatric disorders.

Conclusion: There appears to be an association of low vitamin D levels and depression in our study group. The findings of this study are especially relevant as there is adequate sunlight throughout the year in Pakistan. There is need for larger cross sectional and prospective studies in this area in Pakistan.

Keywords: Vitamin D, Depression, Psychiatry

10.14

PROFILE OF PSYCHIATRIC PATIENTS PRESENTING TO A TERTIARY CARE EMERGENCY DEPARTMENT OF KARACHI

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Objective: Mental health diseases are causing a huge burden on the Emergency Department(ED). Globally 10% of emergency services are utilized by agitated patients. In Nepal and India, most common problems in the ED for psychiatric illnesses include behavioural problems, altered consciousness and somatic complaints. Mostly consultations in ED are sought for mood or anxiety disorders along with substance abuse. Many emergency physicians do not have formal training of emergency medicine. Therefore they are not formally trained in dealing with psychiatric patients. We studied the presentation and management of psychiatric patients presenting to a tertiary care facility of Karachi, Pakistan.

Method: In September 2011, we conducted a comparative cross-sectional study at Department of Emergency Medicine. The psychiatry patients admitting through the ED to the psychiatry ward were compared to those admitted elsewhere in the hospital. Categorical variables inquiring patients' demographics, presentation pattern, old illness and management details were inquired. Presentation and management of psychiatric patients is shown in percentages and proportions. Chi-square was used to assess relation between variables.

Results: From the year 2006 to 2010, 5954 patients were admitted for inpatient care. We reviewed 1128 patients. Median age was 40 (SD 31) years. Equal gender distribution was observed. Presentations varied from sleep related problems (18%), aggressiveness (17%) irrelevant talk (15%) and mood swings (12%) among others. Medicine service (40%) was the most involved along with ED as 52% patients had medicine related comorbidities. Sixty percent of 670 patients were known psychiatric cases being admitted in the psychiatric ward. ($p=0.05$). Sixty nine percent of 39 new psychiatric diagnosis were admitted in wards other than psychiatry ($p=0.0001$). Median length of stay in hospital was 3(SD 5) days.

Conclusion: We conclude that most psychiatric patients presenting had signs and symptoms which one generally disregard but these are minor indicators which lead to major events in a patient's

life. Other than the Department of Psychiatry, Departments of Emergency Medicine and Medicine can play a significant role in managing these patients in a tertiary care facility.

Keywords: Psychiatric, Emergency, Profile

10.15

UNEMPLOYMENT AND PSYCHOLOGICAL IMPACT ON MEN

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Objective: Recently, dynamics of economy has changed unexpectedly and recession is been experienced globally. Since recession and unemployment are co-related factors, it is likely that it may exert impact on the general population. Considering the situation in Pakistan, according to CIA World Fact book, the rate of unemployment of Pakistan rose above 13% in 2010. In context of our society, men are believed to be a high risk population suffering from the effects of unemployment than women because in our social system, men are expected to perform their role as a bread earner so as to fulfill the needs of the family. Therefore, an attempt was made to understand the psychological impact of unemployment upon men in order to explore this phenomenon.

Method: A thorough review of literature was done in this regard.

Results: Unemployment affects men psychologically in a number of ways. On becoming unemployed, men experience change in their role and social position. In contrast to employed people, unemployed men have poor mental health. In all communities across Pakistan, unemployed men are liable to suffer from anxiety, depression, reduced self-esteem, lack of confidence, hostility and paranoia, lack of motivation, learned helplessness and poor cognitive performance with time. In addition, losing a job may be interpreted by the individual as a sign of personal inadequacy which may lead to self-blame. These factors eventually lead to increased rate of suicidal attempts and suicide. Moreover, usage of substance abuse also heightens, which in turn, serves as poor coping mechanism, promotes dependency and increases economic burden.

Conclusion: To conclude, unemployment is a factor which alters the mental health of men. Since unemployment seems inevitable at this point in time, certain interventions should be planned to reduce the psychological effects of unemployment in best possible way. It is suggested that studies may be conducted to evaluate the age group of men who are most affected and the impact of unemployment over a sustained period of time.

Keywords: Unemployment, Men, Psychological impact

10.17**CLINICAL OUTCOME AND COST EFFECTIVENESS OF TRACHEOSTOMY IN SEVERE HEAD INJURY PATIENTS**

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Objective: Early tracheostomy (ET) has been shown to be effective in reducing complications associated with prolonged mechanical ventilation. The present study was carried out to evaluate the role of ET; in reducing the duration of mechanical ventilation, duration of intensive care unit (ICU) stay, ICU related morbidities, and its overall effect on outcome, in patients with severe traumatic brain injury.

Method: This seven year review included 100 ICU patients with severe traumatic brain injury (TBI) requiring mechanical ventilation. Early tracheostomy (ET) was defined as tracheostomy within 7 days of TBI, and prolonged endotracheal intubation (EI) as endotracheal intubation exceeding 7 days of TBI. Of 100 patients 49 underwent early tracheostomy and 51 remained on prolonged EI for ventilation. All patients were comparable in terms of age and initial Glasgow Coma Scale (GCS). We evaluated groups regarding clinical outcome in terms of ventilator associated pneumonia (VAP), ICU stay and Glasgow Outcome Score (GOS).

Results: The frequency of VAP was higher in EI group relative to ET group (63% vs. 45%, p-value 0.09). ET group showed significantly less ventilator days (10 days vs. 13 days, p-value 0.031), ICU stay (11 days vs. 13 days, p-value 0.030), complication rate (14% vs. 18%) and mortality (8.2% vs. 17.6%). Clinical outcome assessed on the basis of GOS was also better in the ET group. Total inpatient cost was also considerably less (USD \$8027) in the ET group compared to the EI group (USD \$9961).

Conclusion: In patients with severe TBI, early tracheostomy decreases total days of ventilation and ICU stay, and is associated with a decrease in the frequency of VAP. Early tracheostomy should be considered in severe head injury patients requiring prolonged ventilatory support.

Keywords: severe traumatic brain injury, early tracheostomy, prolonged endotracheal intubation

10.18**COMPARISON OF IRRIGATION VS NO IRRIGATION DURING BUR HOLE EVACUATION OF CHRONIC SUBDURAL HEMATOMA.**

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Objective: To compare the results of irrigation versus no irrigation use during bur hole evacuation of chronic subdural hematoma

Method: This study was a retrospective chart review of those patients who underwent bur hole evacuation of chronic subdural hematoma during a period of five years. Cases were divided into two groups based upon the use of irrigation during surgery.

Results: The total sample size was 56, out of which 34 patients

were in the irrigation group and 22 in no irrigation group. Recurrence rate was 17.64% in the irrigation group and 9.09% in the no irrigation group. Systemic complications were predominantly cardiac in the no irrigation group as compared to respiratory complications in the irrigation group. Irrigation group had a mortality rate of 5.88% compared to 4.54% in no irrigation.

Conclusion: There was no statistically significant difference between the two groups in terms of recurrence or mortality.

Keywords: Chronic subdural hematoma, irrigation, bur hole

10.19**PREVALENCE OF BODY-FOCUSED REPETITIVE BEHAVIORS AMONG MEDICAL STUDENTS OF KARACHI: A CROSS-SECTIONAL STUDY**

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Objective: Body-focused repetitive behaviors (BFRBs) that include skin picking (dermatillomania), hair pulling (trichotillomania) and nail biting (onychophagia), lead to harmful physical and psychological sequelae. The objective was to determine the prevalence and the factors associated with BFRBs among students attending medical colleges of Karachi. It is hypothesized that students engaging in BFRBs experience significantly higher levels of anxiety than those without BFRBs. Thus, it is imperative to come up with frequency along with factors to design strategies to decrease the burden and adverse effects associated with BFRBs among medical students.

Method: A cross-sectional study was conducted among 210 students attending Aga Khan University, Dow and Sindh Medical College, Dow University of Health Sciences, Karachi, in equal proportion. Data was collected using a validated tool, "Habit Questionnaire". Diagnosis were made on the criteria that a student must be involved in an activity = 5 times per day for = 4 weeks. Convenience sampling was done to recruit the participants aged 18 years and above after getting written informed consent.

Results: The overall prevalence of BFRBs was found to be 46 (22%), with females 29 (63%) and males 17 (37%). Among these students, 19 (9.0%) were engaged in dermatillomania, 28 (13.3%) in trichotillomania and 13 (6.2%) in onychophagia. Stress during examinations was one of the major factors found to be associated with BFRBs.

Conclusion: High proportions of BFRBs are reported among medical students of Karachi with stress as a major contributing factor. Key health messages and interventions to reduce stress and anxiety among students may help in curtailing the burden of this disease which has serious adverse consequences.

Keywords: Medical students, behaviors

10.20 ECONOMIC BURDEN OF MENTAL HEALTH IN PAKISTAN DURING 2005-06

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Objective: Mental illnesses in Pakistan are on the rise. Decade long terrorism, suicide bombings, natural catastrophes, political uncertainty rising prices and economic downturn are some of the key factors contributing to increasing burden of mental illnesses in the country. This study emphasizes the importance of economic consequences of mental illness. It provides an estimate on cost on mental health in Pakistan.

Method: Aga Khan University hospital, Psychiatry department data set on inpatients (N=727) and outpatients (N=1458) for the year 2005-06 is classified into ICD-10. Costs are estimated drawing a stratified random sample for both inpatients and outpatients. Direct costs include consultation fee, diagnostics, bed charges, laboratory charges and medication. Indirect costs comprises travel expenses, caregiver time and productivity losses.

Results: Initial findings identify Schizophrenia (N=227) and mood/depressive disorders (N=415) as major contributors to the burden of mental health in inpatient and outpatient care (82% and 75% respectively). Mean cost for all categories in inpatient care is Pak Rupees: 21701 per treatment episode in a year. Anorexia is the most costly (Mean=Rs.71687) while dementia and other organic disorders are relatively less expensive to treat (Mean=Pak Rs.1183). These estimates are significantly higher than the estimated per capita out-of-pocket health expenditure in 2004-05(Pak.Rs.597).

Conclusion: Initial findings show that once the complete costs envelop is extrapolated to the whole population, the economic burden of mental health will be alarmingly high. Majority of the population, especially transitory and chronic poor cannot afford the cost of treatment of their mental illness. As such further research is required to identify cost effective strategies to treat mental illness in either in community setting and or tertiary care hospitals in Pakistan.

Keywords: Mental health, cost of illness, health economics and policy

10.21 HOMELESSNESS LEADING TO ADVERSE BEHAVIOR AND MENTAL ILLNESSES AMONG HOMELESS CHILDREN

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Objective: Introduction: It is mentioned in many places in the literature that "adverse behavioral outcomes were more common in homeless children compared with housed" (Bassul, Weinreb, Dawson, Perloff, & Buckner, 1997). According to the nation newspaper's statistics dated may 5th 2009 states that around 1.2 million children are homeless throughout Pakistan and 30,000 homeless children are in Karachi. Purpose: To Explore the effect

of homelessness on children and correlate it with contemporary literature.

Method: Systemic review of literature from 10 research articles from 1997-2010 was conducted through electronic medium by using Pediatrics, pubmed, and google search engines.

Results: The literature evidently highlights in many places that homelessness brings about greater stress and stress in itself is one of the important risk factor preceding mental illnesses. (Weinreb, Goldberg, Bassuk, & Perloff, 1998) also heighlights that "physical punishment and inconsistent discipline, may contribute to aggressive and antisocial behaviours in children" and low income families are more prone towards greater physical punishments, hence contributing to adverse behaviours. The homeless kids not only have to face the adversity of being poor but also of lacking residential instability

Conclusion: More institutions should work for the betterment of the homeless children and UNO's all applicable child rights' principles should be practiced. Moreover, teaching programs should also be done with the homeless children since Freud very vividly highlighted the importance of the early childhood. More research and field work is required to decrease the pressure of homelessness among kids in order to provide them with a better environment to grow in.

Keywords: Homelessness, children, mental adversities

10.22 ARE OUR CLINICIANS EQUIPPED WITH SUFFICIENT KNOWLEDGE TO DIAGNOSE AND MANAGE VASCULAR, PARKINSON'S AND HUNTINGTON'S DEMENTIA - AN INTERVIEW BASED SURVEY.

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Objective: Vascular dementia (VD) is the second most common cause of cognitive impairment and with dementia due to Parkinson (PD) and Huntington (HD) is responsible for a significant 60-65% of the cases. Recognizing the relevant risk factors and managing them timely is imperative in the prevention of vascular dementia. Early initiation and apposite treatment in the cases of Parkinson's and Huntington's disease can prevent the progression of the disease and the deterioration of the cognitive functions. The objective of this survey was to assess the knowledge of the health professionals concerning these diseases.

Method: With the help of a questionnaire devised by the researchers 300 clinicians were interviewed at the three major tertiary care hospitals in Karachi, Pakistan. Participants at the centers were selected through convenience sampling.

Results: Survey showed that 65% of the respondents correctly identified vascular dementia to be more common in males. While majority recognized that small multiple infarcts can lead to the disease yet 41% thought transient ischemic attacks and 18% thought that single large stroke can cause the disease as well. Thirteen percent incorrectly associated neurofibrillary tangles with vascular dementia. Focal neurological symptoms affecting motor system, continence and gait are more common in VD which was opted by 60%, 27% and 35% of the interviewees. Seventeen percent of the clinicians failed to realize that for VD,

treatment is more preventive than curative and anti-platelet drugs (21%) can help. Dementia can result later in Parkinson or Huntington which was correctly identified by majority of the respondents. Thirty seven percent said that dementia is more common in early onset PD while 13% opted for normal onset and 49% late onset. For both PD and HD majority of the clinicians responded that around 15-30% of the sufferers have cognitive impairment during the course of the disease.

Conclusion: Results depicted lack of knowledge in certain important aspects pertaining to these diseases. With the help of better course structure during medical training and CMEs on mental health, morbidity and mortality associated with these disorders can be lessened.

Keywords: Vascular dementia, parkinson, huntington

10.23

NEUROPROTECTIVE PROPERTIES OF STAR ANISE

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Objective: Rabia Jamy¹, Shaheen Faizi², Ahsana Dar², Shagufta Khan¹ ¹Department of Biological and Biomedical Sciences, Aga Khan University Medical College, Karachi, Pakistan ²HEJ Research Institute of Chemistry, International Center for Chemical and Biological Sciences, Dr Panjwani Center for Molecular Medicine and Drug Research, University of Karachi, Pakistan Reactive oxygen species, in particular free radicals such as hydroxyl have been recognized to be involved in several pathological conditions. Increased neuronal cell death in neurodegenerative disorders such as Alzheimer and Parkinson's diseases has been suggested to result from an increased mitochondrial generation of reactive oxygen species. The chain reaction of damage in the human body including neurons caused by free radicals can be defended and/or interrupted by antioxidants therapy. *Illicium verum* (star anise) belongs to family Illiaceae and has been used in folk medicine for various ailments including nervous disorders.

Method: In this study *Illicium verum* fruit extract was evaluated for its neuroprotective properties using hydroxyl radical scavenging, hydrogen peroxide scavenging, superoxide anion scavenging, lipid peroxidation and DNA degradation assays. Vitamin E and C were used as standard drugs in this study. *Results:* Data obtained from the present study showed that the *Illicium verum* extract possesses significant antioxidant activity in a dose dependent manner. In case of hydroxyl radical scavenging assay it showed dose depended (6-200 µg/ml) effect, reaching to maxim 90% antioxidant activity at 200 µg/ml dose. Data obtained from different assays such as lipid peroxidation (EC₅₀=550 µg/ml) and DNA degradation assay (EC₅₀=1.1 mg/ml) was in support to our findings.

Conclusion: Our experimental evidence suggests that the *Illicium verum* possesses neuroprotective properties in rodents. However, further studies are required to identify its active compound(s) via bioassay guided-fractionation method.

Keywords: Brain, reactive oxygen species, antioxidants

10.24

IMIPRAMINE LIKE EFFECT OF AQUEOUS FRACTION OF NIGELLA SATIVA

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Objective: Mental health has been a subject of men's primary concern since ancient time. Depression is most popular among the mental disorders and is one of the leading causes of disability and morbidity around the world. *Nigella sativa* has been used in folk medicine for various illnesses including nervous disorders. Our previous studies reported antidepressant properties of *Nigella sativa* methanol extract.

Method: In the present study aqueous fraction of *Nigella sativa* extract was evaluated for its antidepressant properties using animal models of depression; forced-swim, tail suspension, yohimbine potentiation tests, in-vitro, in-vivo and monoamine oxidase assays. Phenelzine, imipramine and fluoxetine were used as reference drugs.

Results: Our results showed that aqueous fraction of *Nigella sativa* (10-400 mg/kg) caused dose-dependent reduction in the immobility time of rodents using forced-swim test (EC₅₀ = 86 6.2 mg/kg rats) and tail suspension test (EC₅₀ = 25 3.1 mg/kg mice) indicating antidepressant property of aqueous fraction of *Nigella sativa*. Our data also showed that the pretreatment of animals with extract exhibited marked reduction in the immobility time which does not correlate with the spontaneous activity recorded by locomotor test e.g. at the dose of 30 mg/kg 27% decrease was found in the locomotor counts of mice, thus further confirming the present findings.

Conclusion: In conclusion, the aqueous fraction of *Nigella sativa* extract possesses better antidepressant activity (similar to tricyclic antidepressants) as compared to its methanol extract. However, further studies are required to investigate the active principle responsible for the antidepressant property using bioassay directed fractionation method.

Keywords: Depression, Neurotransmitters, Reuptake inhibition

10.25

INVESTIGATION OF EFFECTIVE ANALGESIC(S) VIA STRUCTURE ACTIVITY RELATIONSHIP

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Objective: Neuropathic pain is associated with a number of pathological conditions such as neuro-inflammation. Nowadays a number of analgesics are available in the market but due to their side effects new analgesics are needed. A diversity of

biological effects is with 1,3,4-oxadiazine and its derivatives and promising therapeutic potential this class of compounds prompted us to synthesize the electron-rich-N-containing heterocycles, the variably 2-substituted 5,6-dihydro-5-oxo- 4H-1,3,4-oxadiazine-4-propanenitriles and their intermediates and to evaluate their analgesic potential.

Method: Present study was undertaken to investigate better centrally acting analgesic(s) through structure activity relationship of various variants of 4H-1,3,4-oxadiazine-5(6H)-ones using animal models of nociception; formalin, acetic acid induced writhing, tail flick and paw edema tests. Aspirin, ibuprofen, morphine and tramadol were used as reference drugs. *Results:* Our results indicated that the intermediate hydrazide compound 11 showed dose dependent (10-400 mg/kg) inhibition of licking time in the 1st phase of formalin induced nociception similar to that caused by morphine. Results obtained from acetic acid induced writhing and tail flick tests were in support to those obtained with formalin test.

Conclusion: Present findings suggest that the compound 11 exhibited most potent centrally acting analgesic activity among all the test compounds. Whereas, compound 4 was found to be more effective peripherally acting analgesic similar to ibuprofen.

Keywords: Central nervous system, Nociception, Analgesics

10.26

FREQUENCY OF ADMISSION HYPERGLYCEMIA IN ACUTE ISCHEMIC STROKE PATIENT PRESENTING TO AGA KHAN UNIVERSITY HOSPITAL, KARACHI

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Objective: Introduction: Admission Hyperglycemia in Acute Ischemic Stroke is common and modifiable risk factor, which is associated with high risk of mortality and of poor functional recovery as compared with normal glucose levels. *Objective:* To determine the Frequency of Admission Hyperglycemia in Acute Ischemic Stroke.

Method: Data was prospectively collected from patients or patients' family members after taking a verbal consent. Data was analyzed using SPSS version 16.

Results: Total number of 129 patients with diagnosed cases of ischemic stroke was enrolled in this study. Out of which 81 (62.8%) and 48 (37.2%) were male and female respectively. The admission hyperglycemia was found in 35 (27.1%) patient in ischemic acute stroke and 33 (53.22%) patients with admission hyperglycemia in known diabetic patients with acute ischemic stroke.

Conclusion: The present study shows that the frequency of admission hyperglycemia in acute ischemic stroke is high in our population especially in diabetic patients as comparable with international data, so aggressive short-term and long-term glycemic control would improve acute ischemic stroke outcome and reduced complications.

Keywords: Hyperglycemia, acute ischemic stroke.

10.27

TEMPORAL TRENDS IN RISK FACTORS AND OUTCOME OF INTRACEREBRAL HEMORRHAGE OVER 18 YEARS AT A TERTIARY CARE HOSPITAL IN KARACHI, PAKISTAN

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Objective: Purpose of this study was to analyze baseline characteristics and outcome of ICH patients at our center over last 18 years.

Method: Patients with Intracerebral hemorrhage (ICH) (first time) were identified from medical records using ICD-9 codes from 1988-2005. Patients were divided into two groups (having a span of nine years each) based on year of admission; old group (admitted during 1988- 1996) and newer group (admitted during 1997-2005).

Results: Out of 920 patients, number of admissions with ICH increased from less than 40 per year (average) during 1988-1996 to more than 60 per year (average) during 1997-2005. The findings indicate that male preponderance decreased from 72% to 55% in the newer group as compared to older group while female ICH admissions increased from 28% to 45%. Mean age of ICH onset for both men and women decreased about 5 years but this difference was not statistically significant. Frequency of diabetes (14% versus 30%), dyslipidemia (3% versus 18%) and use of anti hypertensive medications (29% versus 69%) was higher in newer group while frequency of lobar hemorrhage was found to be reduced (40% versus 20%) in newer group. Lower mortality (22% in the newer group versus 32% in the older group) was noted. A decreased length of hospital stay than the older group was recorded but this difference was not found to be statistically significant.

Conclusion: Mean age of ICH onset for both men and women has decreased about five years in newer group. Men and women were equally affected in recent years as compared to male predominance in older group.

Keywords: Intracerebral hemorrhage , dyslipidemia, diabetes

10.28

PREDICTORS OF CEREBRAL VENOUS THROMBOSIS AND ARTERIAL ISCHEMIC STROKE IN YOUNG ASIAN WOMEN

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Objective: The management and outcome of cerebral venous thrombosis (CVT) may be different from arterial ischemic stroke

(AIS). Clinically differentiating the two diseases on clinical grounds may be difficult. The main objective of this study was to identify predictors differentiating CVT from AIS in a large cohort of young Asian women, based on risk factors and investigations

Method: Twelve centers in eight Asian countries participated. Women aged 15-45 years were included if they had a diagnosis of first ever symptomatic AIS or CVT confirmed by brain CT scan or MRI/MR Venogram. Patients with head trauma, cerebral contusions, intracranial hemorrhage, subarachnoid or subdural hemorrhage were excluded. Data was collected by retrospective and then prospective chart review between January 2001 and July 2008 on demographics, risk factors, neuroimaging, blood and cardiac investigations. Outcome was based on the Modified Rankin Scale (mRS) at admission, discharge and latest follow-up. The study was approved by respective ethics committees. Data analysis was conducted using the Statistical Package for Social Science SPSSv16.0.

Results: There were 958 patients (204 CVT and 754 AIS) that were included in the study. Age less than 36 years, anemia, pregnancy or post-partum state and presence of hemorrhagic infarcts on CT or MRI were significant predictors of CVT on univariate analysis. Age more than 36 years, presence of diabetes, hypertension, dyslipidemia, recent myocardial infarction, EKG abnormalities and blood sugar more than 150 mg/dL were strong predictors of AIS. On multivariate analysis, post-partum state and hemorrhagic infarcts were strongest predictors of CVT ($p < 0.001$). Mortality was comparable between the groups. Prognosis of CVT was significantly better than AIS (mRS 0-2 74% vs 46%, $p < 0.001$). There was no difference in outcome between patients with obstetric and non-obstetric CVT. **Conclusion:** Predictors of CVT among young Asian women are different from those for AIS. These findings could be useful in early identification and diagnosis of patients with CVT.

Keywords: CVT, women, AIS

10.29

VITAMIN B12 SUPPLEMENTATION IN TREATING MAJOR DEPRESSIVE DISORDER: A RANDOMIZED CONTROLLED TRIAL

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Objective: Recent literature has identified links between vitamin B12 deficiency and depression. High B12 levels in serum are associated with good treatment response. This study has aimed to compare the clinical response of SSRI-monotherapy with that of the B12-augmentation in a sample of depressed patients with low normal B12 levels who responded inadequately to the first trial with the SSRIs.

Method: Patients were enrolled at Aga Khan University Hospital, Karachi Pakistan during 2009- 2010. Depression was defined as Patients scoring = 16 on the 17-item Hamilton Rating Scale for Depression-Urdu version (HAM-D). Low normal B12 level was defined as B12 level ranging between 191pg and 300 pg/ml. Patients with depression and low normal B12 levels were

randomized by a computer program into control arm (antidepressant only) and treatment arm (antidepressants and Injectable vitamin B12 supplementation). A decline in HAM-D score of 20% or more from baseline indicating an improvement in Depression was defined as a primary outcome. **Results:** A total of 199 depressed patients were screened for B12 levels. Vitamin B12 deficiency was present in 44(22%) patients. Out of 73 patients with low normal B12 levels 34 (47 %) were randomized in the treatment group while 39 (53 %) were randomized to control arm. Both groups were matched at the baseline except higher depression scores in the treatment group, three months follow up treatment group showed 48% reduction in HAM-D scores as compared to baseline while control group showed 26% reduction in HAM-D scores as compared to the baseline. This difference was statistically significant (< 0.001).

Conclusion: B12 deficiency and low normal B12 levels are common and may be associated with depression and a poor response to the antidepressant treatment in patients with depression. Vitamin B12 supplementation with antidepressants has significantly improved depressive symptoms in our cohort.

Keywords: depression, vitamin B12, antidepressants

10.30

IMPACT OF EARLY MARRIAGE ON WOMEN'S MENTAL HEALTH

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Introduction: All over the world, marriage is considered as an instant of celebration and a landmark. In other words, marriage is a variance and a great effort in life. Getting married earlier than the age of eighteen would be an enormous struggle for the girl. During this type of wedding, girls face tremendous jeopardy including the lack of education, emotional difficulty, and poor social skills. As a result, mental and emotional stress in young brides are high because they are not old enough to cope with maternal, marital or in-laws issues. **Objectives:** 1. To recognize the circumstances which enforce women to get early marriages. 2. To identify the strategies to reduce incidences of early marriages to prevent from mental illness.

Method: Systematic review of the literature from 05 research articles gathered through print and electronic media device published between the years 2002 to 2011.

Result: The emotional and social effects of early marriages are wide-ranging. A girl's social status is extremely low as compared to a male's social rank because girls never looked upon as something great. Girls always had to work harder and received less food than the males, the extended family system, role of in-laws in daily lives of women, represents major issues and stressors for married females.

Conclusion/Recommendations: Several researches strongly emphasize on the role of government and society to advance knowledge or awareness related to early marriages leading mental health problem. Despite the fact that the respective governments and societies are doing much to eliminate early or child marriage through campaigns, laws, policies and individual support of people, it is still a distant-reaching dream for young girls who are still repeatedly forced into such liaisons.

10.31

DEPRESSION AND ITS ASSOCIATED RISK FACTORS IN MEDICAL AND SURGICAL POST GRADUATE TRAINEES AT A TEACHING HOSPITAL: A CROSS SECTIONAL SURVEY FROM A DEVELOPING COUNTRY

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Objective: Depression is widespread globally affecting around 151.2 million of the population. It is among the third most common cause of disability and is anticipated to form the top most cause worldwide by 2030. **Objectives:** To determine the frequency of depression among post graduate medical trainees in a teaching hospital of Pakistan and to explore the associated factors contributing to depression in them.

Method: It's a cross-sectional study at the Aga Khan University Hospital, Karachi. It was done in June 2008 till August 2008. Zung Self-Rating Depression Scale was administered among 172 post graduate trainees. Self administered questionnaires were used to assess the associated demographic and work related risk factors. Adjusted odds ratios (OR) were calculated by logistic regression.

Results: The survey response rate was 172(82.69%). Depression in the overall sample was 103(59.88%), of which 58(33.66%) were moderate to markedly depressed. Multiple logistic regression analysis revealed that working hours less than 76 hours (OR 3.71; CI=1.67, 8.23) and 76-90 hours (OR 3.15; CI= 1.42, 6.97) and none or occasional peer support (OR 2.05; CI=1.01, 4.18) were independent predictors for depression among the post graduate trainees.

Conclusion: More than half of our sample population was depressed. Therefore, they should be encouraged to recognize and seek treatment. This study also indicates that less working hours and lack of peer support cause depression.

Keywords: Depression, Postgraduate trainee, Risk factors

10.32

ROLE OF THE RNA BINDING PROTEINS ELAV IN THE PATHOGENESIS OF NEUROBLASTOMA

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Objective: Neuroblastoma (NB) is a frequently observed childhood tumor derived from neuroectodermal cells and characterized by high grade of cell undifferentiation. The primitive embryonic cellular features of neuroblastoma results from impaired ability of neuroblast cells to respond to transcriptional control signals that function to induce differentiation (Grynfeld et al.,2000). Though transcription being the primary level of regulation, post transcriptional processing has an influential role to shape out the qualitative and quantitative aspects of protein. It has been speculated that post transcriptional modifications are pivotal for inducing changes in the level of proteins involved in cell differentiation as well as in the stabilizing the differentiated phenotype in cells such as neurons (Pascale et al., 2005). Among

other genes, neural differentiation is controlled by a group of RNA binding proteins known as neural ELAV proteins. The mammalian family of ELAV (Hu) proteins are widely expressed in both early post mitotic and mature neurons, with the exception of the ubiquitously expressed HuA (HuR) protein (Akamatsu et al., 2005). ELAV protein function to induce neuronal differentiation by stabilizing labile mRNAs carrying AU rich instability elements present in putative genes such as p21, p27 and N-Myc (Akamatsu et al., 1999). Bioinformatic analysis carried out in the hosting laboratory showed upregulation of the neuronal ELAV (nELAV) proteins such as HuB, HuC and HuD in 18 neuroblastoma cell lines. Despite the expression of ELAV proteins and their vital role in cell differentiation, the cells displayed aberrant neuronal phenotype in neuroblastoma meant that the process of differentiation might be arrested at some downstream level. The expression of genes is equally influenced by post translational modifications that confer functional diversity to protein. Arginine methylation has emerged as an instrumental regulator of protein function, manipulating a multitude of cellular processes such as RNA processing, transcriptional regulation, signal transduction and DNA repair (Bedford, 2005). Arginine methylation is mediated by a group of enzymes known as the human protein arginine methyltransferases (PRMTs). CARM1 (coactivator-associated arginine methyltransferase1) is one of the family member of PRMT. The biological activity of ELAV proteins, such as HuD and HuR is regulated by CARM1. Furjiwara et al. (2006) demonstrated that methylation of HuD induced by CARM1 prevents their binding to mRNA coding for p21. As p21 is responsible for cell cycle arrest, a reduction in its half life drives the cell cycle into autonomous proliferation; preventing cells to undergo differentiation. This could substantiate the hypothesis that ELAV induced differentiation of neuronal cells is restrained by CARM1 mediated methylation of the same proteins. The experiments carried out to verify this hypothesis concluded that nELAV proteins follow closely in their level of expression of CARM1 in all the neuroblastoma cell lines. Neuroblastoma cell lines have been employed as in vitro models for the purpose of differentiation studies using various agents such as cis-retinoic acid (cRA), ATRA (all-trans retinoic acid) and growth factors. Human SH-SY5Y neuroblastoma cell line which is a subclone of SK-N-SH cell line exhibited morphological and biochemical differentiation upon exposure to phorbol esters. Retnoids such as 13-cis retinoic acid (13-CRA) and 4-HPR(hydroxyphenyl) retinamide have the potential to bring about the differentiation in neuroblastoma cell lines at very low doses (Das et al., 2009). The sensitivity of neuroblastoma cell lines to different retinoid can provide a promising rationale to improve the prognosis in patient with neuroblastoma.

Method: a) Establishing antibody specificity against ELAV (western blotting) b) Validation of microarray Data (Western blotting and RT-QPCR) c) Immunoprecipitation of methylated proteins in CHP134 cell line d) Neuroblastoma cell lines differentiation study (western blotting and immunocytochemistry) **Results:** The first group of experiments comprised of establishing antibody specificity against different nELAV. However these experiments failed to establish the specificity of antibodies against ELAV protein. This may be considered due to fact that there exists greater than 80% homology among the family members of ELAV proteins. Therefore Hu PAN Antibody was used for succeeding experiments as it has the potential to recognize all the 3 neuronal ELAV proteins isoforms. The

immunoblot performed on the 18 NB cell lines exhibited POSITIVE signal close to the predicted size of ELAV proteins between 37-42 KDa reflecting the fact that all the tumor lines expressed neuronal specific ELAV proteins. Eventually to verify the expression of CARM1 protein in NB cell lines, immunoblotting with polyclonal antibody to CARM1 (Imgenex) was carried out after stripping of PVDF membrane. It is observed that there exist a correlation between the expression of ELAV proteins and CARM1, as concomitant expression of both the protein were observed all the cell lines. This could justify that the paucity of the cell differentiation despite over expression of ELAV protein might have resulted from CARM1 mediated inactivation of ELAV protein consistent with the findings of Fujiwara and fellows. Western blot was also employed to semiquantify the expression of neuronal differentiation markers in control and cis-RA acid treated CHP134 cells after 96, 120 and 144 hours of exposure and 24h samples of control and 4-HPR (N-(4-hydroxyphenyl) retinamide) treated CHP134 cells. Bands were appreciated in all the lanes consistent with the size of MAP2 which is 280 KDa. The high intensity bands in 120 and 144h cis-RA acid and 24h of 4-HPR (N-(4-hydroxyphenyl) retinamide) treated cells in contrast to their corresponding control samples signified that considerable dendritic differentiation might have taken place during this period. The densitometric analysis showed an upward trend of MAP2 in cis-RA treated CHP134 cells from 96 to 144 hours. A similar pattern was appreciated in 24h, 4-HPR (N-(4-hydroxyphenyl) retinamide) treated cells. This signified that CHP134 cell responded to retinoid treatment by showing remarkable expression of MAP2 which can be considered as a reliable marker of differentiation. The other marker that was used to monitor the level of differentiation in CHP134 cells was Nestin. Nestin is an intermediate filament that expressed in the neuronal progenitor cells during development of nervous system Semiquantitative analysis of nestin signals in 120 and 144 hours lysate of cis-RA treated CHP134 lysate showed low intensity signals as compared to their respective controls. Similarly, the 24h 4-HPR (N-(4-hydroxyphenyl) retinamide) treated CHP134 sample demonstrated a weaker signal in comparison to the untreated sample as shown in the diagram. The immunoblot finding was also reinforced by densitometric analysis, where expression of Nestin for 120 and 144 hours lysate of cis-RA and 24h lysate of 4-HRP (N-(4-hydroxyphenyl) retinamide) treated CHP 134 cells showed a decreasing trend as consistent with the normal pattern of neuronal growth and dendritic differentiation. This emphasized that the differentiation marker for neuronal progenitor cells Nestin began to disappear as neurons underwent maturation.

Conclusion: The aim of this project was to evaluate how neuroblastoma is developmentally related with deregulation of stem cell commitment. Differentiation is the natural fate in stem cell commitment which maintains cells in a viable state. The research emphasized the key role of nELAV proteins as a group of RNA binding protein in neuronal differentiation. Moreover, it also demonstrated the affiliation of nELAV proteins with CARM1 which negatively influences its activity. The concomitant overexpression of nELAV proteins with CARM1 in 18 NB cell lines was analyzed by western blotting. In addition, the differentiation study was conducted to tune up the differentiation

in neuroblastoma cell lines using retinoids. The neurite outgrowth and expression of differentiation markers was evaluated by immunocytochemistry and western blotting. The study helped to establish the dynamic role of a post translational modification affecting the function of nELAV proteins culminating in aberration of cell growth and differentiation.

Keywords: neuroblastoma , RNA binding protein , neural ELAV proteins

10.33

ASSOCIATION OF MODIFIABLE RISK FACTORS WITH ISCHEMIC STROKE AMONG HYPERTENSIVE PATIENTS: CASE CONTROL STUDY AT TERTIARY HOSPITAL IN KARACHI

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Objective: Stroke is the leading cause of adult disability and the second leading cause of death worldwide. In patients with hypertension, the risk of stroke can be reduced by controlling the modifiable risk factors through primary prevention strategies. To determine the association of modifiable risk factors (smoking, obesity, poor diet, physical inactivity, dyslipidemia, diabetes mellitus) with Ischemic stroke among hypertensive patients. **Method:** 144 cases and 144 controls were enrolled through non-probability purposive sampling. After written informed consent, all hypertensive patients' ≥ 35 years with first ever ischemic stroke and without stroke were enrolled and Proforma was filled. Mean and standard deviation was calculated for continuous variables and percentages for categorical variables. Univariate analysis was used to determine the association of modifiable risk factors with ischemic stroke and multivariate model was created for controlling the effects of confounding.

Results: Mean age was 61.2 years \pm 12.9 SD. The odds of physically inactive among ischemic stroke cases were six times (ORadj= 6.867, 95% CI: 3.102-15.204) lower HDL levels were three times as compared to non-stroke controls (ORadj= 3.740, 95% CI: 2.105-6.645). Cases were more likely obese (ORadj= 1.233), smoking cigarette (ORadj= 2.574), diabetic (ORadj=1.477) and dyslipidemic (ORadj=1.808) than controls. **Conclusion:** We found that modifiable risk factors; lack of physical exercise, obesity, smoking, DM and low HDL levels are associated with increased risk of ischemic stroke among hypertensive patients. A similar study should be carried out in different setup to compare the outcomes of our study. Strategies should be planned out to prevent these modifiable risk factors against ischemic stroke.

Keywords: Ischemic stroke, hypertension, risk factors

10.34
POPULATION ATTRIBUTABLE RISK FRACTION (PARF)
IN SUICIDE IN PAKISTAN: IMPLICATIONS FOR
PREVENTION

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Objective: The Population Attributable Risk Fraction (PARF) signifies the proportion of incident cases in the population which would be prevented if a causal exposure were removed, assuming an unconfounded causal association. The PARF gives an index of potential for prevention at the population level, taking into account both the presence of the exposure and associated relative risk.

Method: PARFs were calculated for suicide in Karachi, Pakistan. Using data from a matched pair case-control psychological autopsy study, psychosocial and psychiatric risk factors were identified. Odds ratios from the final adjusted models were used to calculate PARFs for the associations between the hypothesized risk factors and suicide. These, in the absence of bias and confounding, and assuming a causal relationship, represent the proportion of suicide that could be prevented assuming that the risk factor could be removed from the population.

Results: Given the substantial effect sizes and the relatively high prevalence of the exposure among the controls (an estimate of the prevalence of the exposure in the population), all of the risk factors in the parsimonious model (life-events, social network, education, marital status and ethnicity), were linked to very high PARFs ranging from 38% for education to 97% for life events. Based on the adjusted odds ratio estimates and a 3.0% prevalence among the controls, the PARF for depression was 53.9%, and that for schizophrenia, with a 2.0% exposure prevalence in the controls was 1.3%.

Conclusion: These findings have important implications for suicide prevention strategies at population level in Pakistan

Keywords: Suicide, Pakistan, prevention

10.35
THE EFFECT OF CLINICAL CLERKSHIP ON STUDENTS'
ATTITUDE TOWARD PSYCHIATRY IN KARACHI,
PAKISTAN

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Objective: Attitudes of medical students toward a specialty is strongly related to their future choice of specialty. In developing countries like Pakistan, where there is a shortage of psychiatrists, there is a need to assess the effect of exposure to psychiatry on medical students.

Method: The authors conducted a survey of fourth-year medical students at Aga Khan University in Karachi, Pakistan.

Results: Psychiatry clerkship had an overall positive attitude toward psychiatric illness, patients, and psychiatrists, but no effect on students' choice of psychiatry as a career.

Conclusion: Psychiatry teaching needs to be made more relevant

to the rest of the medical curricula. This may improve students' interest and their future choice of psychiatry as an area of specialization

Keywords: Psychiatry, clerkship, Pakistan

10.36
SUICIDE IN PAKISTAN: EPIDEMIOLOGY, RISK FACTORS
AND PREVENTION

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Objective: In recent years suicide has become a major public health problem in Pakistan, a conservative Muslim country. Suicide is strongly condemned in Islam. Despite this, there has been a dramatic increase in incidences of suicides over the last decade, from a few hundreds previously to current estimate of 5000-7000 annually. Although there are no official figures, data gathered from a variety of sources show that suicide cuts across all ethnic, provincial and cultural boundaries in Pakistan. *Method:* A review of more than forty studies covering a period of 25 years on suicide (no of subjects= 6032), deliberate self-harm (DSH) (no of subjects = 3151) and acute intentional poisoning (no of subjects = 2310)

Results: suicidal behavior is reported from almost all majors cities and towns of the country. Crude rates for suicide vary from 0.43/100,000 per year (av. 1991-2000) in Peshawar to 3.11/100,000 in Haripur (in 2005), while rates for some other cities were as follows: Karachi, 2.1/100,000 (1995-2001); Lahore, 1.08/100,000 (1993-95); Faisalabad, 1.12/100,000 (1998-2001) and Larkana, 2.6/100,000 (2003-2004). Highest gender-specific rates were 5.2/100,000 in Rawalpindi and Haripur for men and 16.7/100,000 in Ghizer District, Northern Areas for women. Based on current estimates there may be more than 100,000 DSH acts in the country annually. Most suicides in Pakistan are committed by young people, while the elderly appear to be protected against suicide. The most common methods are hanging, ingestion of insecticides and use of firearms.

Conclusion: The widely held notion that suicide is a negligible problem in Islamic countries is being challenged in countries like Pakistan, where adverse social conditions appear to contribute to high levels of psychological distress and suicidal behavior. There is need to address suicide prevention not only from mental health but also socio-cultural, religious and public health perspectives in Pakistan.

Keywords: Suicide, Pakistan, Islam

10.37
LINK FROM KNOWLEDGE TO COMMUNITIES OF
PRACTICE AND/OR PROTECTIVE FACTORS

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Objective: Complex problems require complex solutions. Suicide is a complex phenomenon and its prevention requires a complex framework that takes macro and micro-level, proximal and

distal, biological, psychological, sociological and environmental factors into account. But despite all the research evidence gathered over the last 50 years or so, global suicide rates have continued to grow with about a million people killing themselves worldwide every year. This figure is projected to increase to 1.53 million by the year 2020. Low and middle income (LAMI) countries contribute almost 85% to the total global suicides.

Method: Review of relevant work in the area and to study the community readiness model

Results: There is still a large gap between the research-based knowledge and the practice of suicide prevention in communities, particularly in LAMI countries.

Conclusion: To foster and accelerate the adoption of scientific knowledge into prevention practice, there is need to work to overcome the gap between research and practice highlighted by both researchers and practitioners. Bridging this gap and transforming the knowledge derived from research into widespread practice is an enormous challenge for the suicide prevention field and one that requires the active involvement of all stakeholders including mental and public health practitioners, policy makers, voluntary and non-governmental organisations, community leaders, the media as well as researchers. It also requires innovative thinking, a problem-solving approach, and attention to the most effective means of dissemination of evidence-based research findings. Only then can the seemingly impossible challenge of suicide prevention be met.

Keywords: Suicide protective factors, suicide prevention, LAMI countries

10.38

SUICIDE IN MUSLIM CULTURES: CHALLENGE OF PREVENTION & LESSONS FOR OTHERS

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Objective: There are about 1.5 billion Muslims in the world, the majority in Asia and Africa but sizeable and growing minorities in Europe and North America. Suicide is forbidden in Islam as an unforgivable sin and this has acted as a strong deterrent against suicidal behavior. The objectives of the study is to review suicide in predominantly Muslim countries

Method: Review of the relevant literature

Results: There appear to be significantly low rates in Islamic countries as well as in Muslims living in non-Islamic countries. The recorded low rates appear to be a naturalistic phenomenon as there are virtually no suicide prevention programs in any of the Muslim countries. At the same time some Islamic countries like Pakistan, Iran, Turkey and Bangladesh are recording an increase in their suicide rates, challenging the traditional view of low rates. From the available evidence it appears that Islam may be losing some of its protective effect in these countries. Various possible hypotheses for this are put forward

Conclusion: While the low rates in Islamic countries provide valuable lessons for non-Islamic countries struggling with suicide prevention, there is also need to address suicide prevention in

those Islamic countries showing rising rates. Prevention should be addressed from mental health as well as socio-cultural and religious perspectives in these countries.

Keywords: Suicide, Islam, Muslim cultures

10.39

SUICIDE & 'SUICIDE' BOMBING IN PAKISTAN: DO THEY HAVE A COMMON PATHWAY?

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Objective: In recent years both suicide and 'suicide' bombing have shown a dramatic increase in Pakistan, a South Asian developing country with a majority Muslim population. Suicide is strongly condemned in Islam and there are many legal and social sanctions against suicidal behavior. Similarly, 'suicide' bombing was virtually unknown in Pakistan up until a few years ago. Since then there have been hundreds of such acts with thousands of fatalities, of both military and civilian populations. The objectives of the study was to understand the commonalities and differences in these two public health problems

Method: Review of relevant literature.

Results: Both suicide and 'suicide' bombing appear to be carried out predominantly by young males from the lower socio-economic strata of the society. While both are distinct phenomena- suicide is a personal act with the intent of self-harm, while the purpose of 'suicide' bombing is to inflict injury and death on others (the perpetrator's death being incidental to the act)-there appear to be many commonalities between the two, particularly as far as some of the underlying factors are concerned. Some of the common distal factors include poverty, deprivation, unemployment, lack of education and poor social support. However, the two differ distinctively in proximal factors, with mental disorders (especially depression) featuring prominently in suicides while most 'suicide' bombers do not suffer from any psychopathology.

Conclusion: Understanding the common pathway in both suicide and 'suicide' bombing in the context of Pakistan is important for their prevention. Prevention programs need to focus on improving social conditions in the country, such as provision of health, education, housing, employment and justice- the absence of which breed frustration and anger in the youth. They contribute to a pool from which future suicides and potential 'suicide' bombers are drawn. Only then can the seemingly impossible challenge of prevention of suicide and 'suicide' bombing be addressed.

Keywords: Pakistan, suicide-bombing, suicide

10.40

RESTLESS SYNDROME IN TYPE II DIABETES MELLITUS

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Objective: RLS is a chronic sensorimotor disorder which is associated with many other illnesses including type 2 Diabetes Mellitus. However, there is paucity of local data in this regard; therefore we sought to determine the frequency of RLS and its associated factors in patients with type 2 diabetes mellitus.

Method: It was a single centered, case control study done with non-probability convenient sampling. The study population comprised of 174 subjects (120 diabetics as cases and 54 non-diabetics as controls). Participants were recruited from the Diabetes clinic of Jinnah Medical and Dental College Hospital. The relevant clinical and laboratory parameters were obtained by clinical history and chart review. Data was analyzed using the Statistical Package for Social Sciences (SPSS) version 19.

Results: Using the international RLS study group criteria, RLS was identified in 67(55.8%) diabetic patients while none of the controls fulfilled the given criteria. Mean age of subjects with RLS was 56 years as compared to 46 years in the non-RLS subjects. Male:female ratio was 3:2. Majority (26/67) of the diabetic/RLS subjects had diabetes for more than 10 years. Periodic limb movements during sleep were reported only in diabetics. Of these, 31.3% had RLS. Sleep disturbances were also more frequent among patients with RLS as compared to non RLS (24% vs 4%). Glycemic indices were significantly deranged in diabetic subjects with RLS. Almost no difference was found in ferritin, creatinine and hemoglobin levels in RLS and non RLS subjects. According to Semmes-Weinstein filament test, 61% of diabetics and 67% of diabetic/RLS subjects had peripheral neuropathy. Interestingly, none of our subjects who were diagnosed as RLS were asked for symptoms or diagnosis of RLS prior to the study.

Conclusion: RLS is a common problem among patients with type 2 diabetes mellitus and is associated with concomitant peripheral neuropathy, sleep disturbances and periodic limb movement during sleep. Its diagnosis is often delayed because of poor recognition by the physicians. Early diagnosis may result in improved quality of life of these patients.

Keywords: Restless syndrome, diabetes mellitus, sleep disturbances

11.1 UNDERSTANDING UNINTENTIONAL CHILDHOOD HOME INJURIES: PILOT SURVEILLANCE DATA FROM KARACHI, PAKISTAN

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Objective: Childhood injuries, an important public health issue, globally affects more than 95% of children living in low-and middle-income countries. The objective of this study is to describe the epidemiology of childhood unintentional injuries in Karachi, Pakistan with a specific focus on those occurring within the home environment.

Method: This was a secondary analysis of a childhood unintentional injury surveillance database setup in the emergency department of the Aga Khan Hospital, Karachi, Pakistan for three months. The data was collected by interviewing caretakers of children under 12 years of age presenting with an unintentional injury to the emergency departments of the four major tertiary care hospitals of Karachi, Pakistan.

Results: The surveillance included 566 injured children of which 409 (72%) injuries had taken place at/around home. Of 409 children, 66% were males and mostly between 5-11 years of age. Injuries commonly occurred during play time (51%). Fall (59%), dog bites (11%) and burns (9%) were the commonest mechanisms of injury. The majority of the children (78%) were directly discharged from the emergency room with predicted short term disability (42%). There were 2 deaths in the emergency department both due to falls.

Conclusion: Childhood injury surveillance system provides valuable in-depth information on child injuries. The majority of these unintentional childhood injuries occur at home; with falls, dog bites and burns being the most common types of unintentional childhood home injuries. Specific surveillance systems for child injuries can provide new and valuable information for countries like Pakistan.

Keywords: Childhood injuries, unintentional injuries, Pakistan

11.2 FREQUENCY OF INFECTIOUS DISEASES AMONG FLOOD AFFECTED PEOPLE AT DISTRICT RAJANPUR, PAKISTAN

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Objective: To identify the frequency of infectious diseases among flood victims during and after disaster at district Rajanpur, Punjab, Pakistan.

Method: A cross sectional study was conducted from 15th to 31st August 2010 at 17 flood affected places of District Rajanpur of Punjab Province, Pakistan. A total of 7814 affected people were interviewed consecutively by using semi-structured questionnaire visiting the relief camps during the study period. Information was obtained after taking informed consent regarding

infectious diseases: Acute Respiratory Tract Infection, Eye Infection, Gastrointestinal Tract Infection, Ear Infection, Skin and Soft tissue Infection, and suspected Malaria. Data was entered and analyzed by using SPSS version 16.0. *Results:* The results showed that the distribution of infectious disease cases presented to relief camps were Gastrointestinal cases (Acute Diarrhea)-30%, Skin and Soft Tissue Infection (33%), Eye (Conjunctivitis)-07%, Ear, Nose and Throat Infection (05%), Respiratory Tract Infection (21%), and Suspected Malaria (4%). Their mean age was 23.15 ± 17.53 years.

Conclusion: Our study concluded that there was a high frequency of infectious diseases. The morbidity and mortality resulting from infectious diseases can be minimized if public health intervention efforts are implemented in a timely and coordinated fashion.

Keywords: infection, flood affected

11.3 KNOWLEDGE, PERCEPTIONS AND PRACTICES CONCERNING CT SCAN AND ITS ASSOCIATED RADIATION EXPOSURE AMONGST PEDIATRICIANS IN KARACHI, PAKISTAN.

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Objective: Dramatic increase in the pediatric CT during the past decade has led to the initiation of Image Gently campaign with the objective to educate physicians and radiologists to minimize radiation exposure in children. The aim of our study was to evaluate knowledge and attitude of pediatricians on the topic before essential steps are taken to implement radiation minimization.

Method: A cross-sectional, interview based survey was carried out using a sample of 400 recruited through convenient sampling. Two tertiary care centers in Karachi were chosen. *Results:* Of all the interviews conducted majority agreed that CT provides new and vital information (76%), it has influenced patient management (78%) and patients' medical outcomes (72%). Most of the respondents underestimated the radiation exposure (67%) and many weren't aware of the amount of radiation received during one CT (58%). Seventy eight percent were of the opinion that CT scan increases the risk of malignancy, most thought that contrast CT leads to greater radiation absorption (57.5%), and that there is a difference in the amount of radiation absorbed during an adult CT as compared with pediatric CT (57%). Seventy four percent of the pediatricians do not inform their patients about the associated risks and most (47%) believe that radiologist/radiographers should do so. Sixty one percent concurred that a lot of unnecessary scans are being ordered in current practice.

Conclusion: The results of the study will guide us in launching a focused approach to improve the knowledge and awareness of the pediatricians in order to minimize the radiation exposure.

Keywords: Image gently, CT, radiation

11.4

SHARP INJURIES AND ITS DETERMINANTS AMONG HEALTH CARE WORKERS AT FIRST LEVEL CARE FACILITIES IN RURAL SWABI, KHYBER PUKHTONKHWA, PAKISTAN

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Objective: A large number of injections are being administered in first level care facilities (FLCF) in Pakistan. Studies have shown strong association between sharp injuries (SI) and transmission of blood borne pathogens (BBP). Data is scarce on SIs and its predictors at FLCFs, while Knowledge, attitude & practices of HCWs regarding SIs at FLCFs may be different from those working in hospitals. The study assessed the incidence and determinants of sharp injuries among health care workers at FLCF in rural area of Swabi, Northern Province of Khyber Pukhtonkhwa, Pakistan.

Method: A survey of HCWs working at FLCF in Tehsil Swabi, Khyber pukhtonkhwa (KPK) Pakistan. A random sample of 370 clinics, stratified on type of clinic; i) Government based Public clinic (PC), Privately owned ii) Licensed Practitioners' clinic (LPC) and iii) Non-licensed practitioners' clinic (NLPC) were selected. A pre-tested questionnaire; based on constructs of health belief model (HBM) was used to collect data by trained data collectors through face to face interviews. Predictors were identified through negative binomial regression.

Results: From 365 clinics, 485 HCWs were interviewed; 7.9% facilities were PC, 15.9% were LPC, and 76.2% were NLPC; and 75% were prescribers and 25% were assistants. Among HCWs, 18% were licensed prescribers, 57% non-licensed prescribers and 16% were qualified Assistants while 9% were un-qualified Assistants. Mean age of HCWs was 38 (SD10.4) years, with median work experience of 10 (range <1-42) years. Knowledge, work experience, job category, barriers to safe practice, and Compliance with universal precautions (UP) are significant predictors of SIs. Incidence of SI decreases with increase in knowledge (RR=0.93, 95% CI: 0.90-0.98) and increase with barriers to compliance with UP (RR=1.06, 95% CI: 1.03-1.09). In Model without constructs of HBM, along with knowledge, compliance with UP significantly decreases the incidence of SI (RR=0.93, 95% CI: 0.87-0.97).

Conclusion: HCWs at FLCFs sustain large number of SIs. Knowledge regarding modes of transmission of BBPs, compliance with UP needs to be improved and barriers to follow standard precautions such as unavailability of personal protective equipments (PPE) should be avoided to reduce sharp injuries and risk of blood borne infections.

Keywords: Sharp Injuries, Blood borne infections, First level care facilities

11.5

DIVERSITY OF HLA-CLASS-I IN AFGHAN AND PAKISTANI POPULATIONS

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Objective: The aim of this study was to analyze the genetic diversity and phylogenetic relationship of the Human Leukocyte Antigen (HLA) class I gene in two Asian populations, Afghanistan and Pakistan.

Method: HLA class I was studied in a total of 50 individuals from both the populations. Two-digit and 4-digit HLA typing was performed, based on DNA sequences of exons 2 and 3 in HLA-A, -B, and -C. In addition, phylogenetic trees were constructed with these sequences to study the clustering patterns of HLA-A, -B and -C sequences in both populations.

Results: In Afghan samples, the two most frequent alleles found to occur for each of the three loci were A*02, A*11, B*15, B*40 and Cw*04 and Cw*07. In case of Pakistani population, most frequent alleles found to occur for each of the HLA-A,-B and -C were A* 24, A*68, B *51, B*52 and Cw*15, Cw*04. When four-digit HLA typing was performed, A*1101, A*0201, B*1501, B*4002, Cw*0401 and Cw*0702 were repeatedly observed in Afghan population. Whereas, A*6801, A*2402, B*5101, B*5201, Cw*1502 and Cw*0401 were observed in Pakistani population. Upon comparison of the HLA allele frequencies, HLA-Cw*04 and its subtype Cw*0401 were found to occur commonly in both populations. In the phylogenetic analysis, HLA-A locus was found to be polymorphic in comparison to HLA-B and -C loci, in both populations.

Conclusion: Pakistan and Afghanistan populations are genetically diverse with respect to HLA alleles.

Keywords: HLA, Afghan, Pakistan

11.6

WAITING TIME IN A CONSULTATION AND FACTORS ASSOCIATED WITH IT IN PATIENTS VISITING PRIMARY CARE CLINICS

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Introduction: Delays are expensive not only in terms of the direct costs they incur, but also in terms of the potential costs of decreased patient satisfaction and adverse clinical outcomes. Therefore, the aim of this study is to assess the actual time patient spends in waiting in a single consultation and the factors related to this delay.

Method: Cross sectional study was conducted on a sample of 100 patients visiting the Community Health Centre (CHC) clinics of the Aga Khan University & Hospital. The survey included self-reported information on waiting time, its reasons and

recommendations to avoid this problem. The data was entered and analyzed using spss version 19.

Results: The total mean waiting time found in this study is 66 (+ 33) minutes in a single consultation. About 48.6% patients reported that doctor's busy with other patients as one of the major reasons for longer waiting time. Moreover, approximately 20% patients responded that one of the reasons for delays is due to the non-presence of doctors in their specific rooms. Another reason for delay about 12% was the files not being bought on time. Seventy percent patients were satisfied with the time spent in usual care and 15% recommended that doctors should limit time on each patient.

Conclusion: The study results suggest that doctors should prioritize and limit their time according to the patient's condition and time management sessions can be arranged for the health care personnel. On the basis of the results further studies should be carried out to evaluate the effectiveness of the strategies implemented to reduce the waiting time in consultations.

Keywords: waiting time, factors, general practice

11.7

PREVALENCE OF SELF MEDICATION PRACTICE IN POPULATION OF KARACHI – A CAUSE FOR CONCERN?

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Objective: Our study aims to assess prevalence of self medication practice and analyze socio-demographic factors that affect it. It also aims at identifying knowledge and attitude towards self medication.

Method: This cross sectional study was conducted between November and December 2010. A convenience sample was obtained from patient attendants at a tertiary care hospital in Karachi using a self reported questionnaire. Logistic regression analysis was used to determine the association of self medication with the following covariates: age, gender, income, level of education, marital status, occupation and the tendency of a person to prescribe medicines to others, without medical consultation. Data analysis was done using SPSS v 17.

Results: Out of 417 participants, 297(71.2%) practiced self medication. The major reasons for self medication were 'prior knowledge of required medicine'(50.5%) and 'lesser severity of illness' (25.7%). NSAIDs (68.5%), antibiotics (24.5%), and anti-allergics (28.5%) were the commonly used drugs. Self medication was mostly practiced for headache, fever and allergies. After adjusting for covariates listed above, female gender (OR: 1.80 CI: 1.05-3.08), middle income range (OR:0.97, CI: 0.18-0.98), undergraduate (OR:4.104, CI:1.10-15.25) and postgraduate education (OR:4.47, CI: 1.01-18.22) and the tendency of a participant to prescribe medicines to others (OR:3.84, CI: 2.26-6.53) independently predicted self medication practice. With increasing age, people were 3% less likely to self medicate. (OR:0.97, CI:0.95-0.99).

Conclusion: This study highlights the need to spread awareness about responsible self medication. We have identified ways by which rising self medication can be curtailed, made recommendations and shown areas of further research and intervention.

Keywords: Self-medication, over the counter drugs, socio-demographics

11.8

THIRTY DAY OUTCOME OF SEVERE INJURIES IN PATIENTS PRESENTING TO THE EMERGENCY DEPARTMENTS OF TWO PUBLIC TERTIARY CARE HOSPITALS IN SINDH, PAKISTAN

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Objective: Post traumatic mortality and morbidity (PTM&M) is different between different designated hospitals so studies should be done to assess the difference in PTM&M between similar designated hospitals. To assess the difference in the rate of death & disability at 30-days among patients aged =>14-80 years with history of severe injuries presenting at ER of two public tertiary care hospitals in Sindh Pakistan To identify risk factors for death and disability due to severe injuries among patients aged =>14-80 year presenting to the ER of two public tertiary care hospitals in Sindh Pakistan.

Method: Study design: longitudinal cohort Sample size: 390 eligible participants Study follow-up: 30 days Study site: civil hospital Karachi and Hyderabad Data collection tools: Baseline Questionnaire and SF 36 for disability Statistical analysis: Rate ratio, rate difference and logistic regression

Results: By taking Hyderabad as reference, there was no significant difference in incidence rate of mortality [rate ratio 1.12 (95% C.I: 0.77, 1.63) [rate difference 14 (-33, 61)], incidence rate of physical disability [rate ratio 1.01 (95% C.I:0.67, 1.51)] [rate difference 0.88 (-44, 46)] and incidence rate of mental disability [rate ratio 0.69 (95% C.I: 0.40, 1.21)] [rate difference -220 (95% C.I: -556, 115)].injury severity, patients attended by paramedics in the ER and delay to receive general management were associated with mortality. Lower extremity injury and higher hospital stay were associated with worse disability

Conclusion: Incidence rates of mortality and disability were not different between two tertiary care settings but overall incidence rate of death and disability was higher in severely injured patients. Hospitals factors were associated with PTM&M so further studies should done to evaluate the hospital care

Keywords: Mortality, disability, Pakistan

11.10 PATIENT BARRIERS TO REVEALING USE OF COMPLEMENTARY AND ALTERNATIVE MEDICATION TO PHYSICIANS AND THEIR AWARENESS OF ITS POSSIBLE DRUG INTERACTIONS WITH ALLOPATHIC MEDICATION.

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Objective: This study was conducted to assess the reasons and barriers to disclosure of CAM use by patients and their attendants presenting to a tertiary care hospital in Pakistan. Their knowledge about the possible interactions between allopathic medicine and complementary and alternative medicine was also assessed. Across the world, there has been an increase in the popularity of complementary and alternative medicine use. It has also been recognized that many patients use CAM in conjunction with or/as alternatives to conventional medicine. However it has been noticed that many patients do not reveal their use of such medications to their physicians. Knowledge about the possible deleterious effects that the concomitant use of conventional and CAM medications can have is also rare. Thus patient-physician communication with regards to this is of utmost priority since it allows the physician to gain a holistic view of the patients they are treating.

Method: A cross sectional study was conducted on the population presenting to the out-patient departments of a tertiary care hospital in Pakistan. A specific number of subjects were selected through convenience sampling. The inclusion criteria for participation being above 18 years of age and a past history of CAM use at least once in the past 10 years. A self reported survey was conducted to collect data and through assurances of confidentiality to the individual responses and opinions, optimum participation was encouraged. To achieve this, a well structured questionnaire was formulated on the basis of thorough literature and peer review. All of the funding that was required was borne by the Department of Community of Health Sciences of the Aga Khan University Hospital.

Results: A total of 512 patients meeting the inclusion criteria attending the Out-patient departments (the Community Health Centre, the Consulting Clinics, the clinics at the Nazar-Ali Walji Building and the Executive Clinics) from 21\01\08 to 1\02\08, who had consented to the survey were sampled. Due to limitations in approaching the subjects while they waited for their own or their relatives' appointments in the out-patient departments, convenience sampling was used to draw the sample. The minimum size for a representative sample was calculated and found to be 423 based on the probability of subjects having disclosed their non-allopathic medication use at 50% with $\alpha=0.05$ and $1-\beta=0.2$. When asked whether they inform their physicians about their CAM use, 68.9% of respondents replied that they informed their doctors about their use of CAM. 53% of respondents used CAM and Allopathic medicines concomitantly. Majority of respondents stated that their doctor's response to their use of CAM was negative. Majority of the respondents believed it was important to disclose this information to their allopathic physician. Most respondents also identified that there

was a need to learn more about the interactions between allopathic and non-allopathic medicines. The majority of respondents said that they had no knowledge of harmful interactions between CAM and allopathic medicines (64.1%) or awareness about the ingredients in their CAM.(76.1%).

Conclusion: Our research clearly revealed that many patients in Pakistan are withholding information regarding their use of CAM from their physicians. The reasons behind this phenomenon and the barriers to communication about CAM use were quantified and also prioritized on whether they could be attributed to the doctor or patient. Although this was achieved specifically in the local setting, we strongly feel that this could have regional and perhaps global significance owing to the ever-increasing use of CAM. Such a perspective will also help guide future research and intervention strategies aiming to facilitate gaps in patient-physician communications in both the developing and developed world. We believe our research will be of use to medical associations and researchers in our country, and indeed any one else regionally or globally, interested in understanding and addressing short-comings in patient-physician communication.

Keywords: Complementary and alternative medication, Doctor-Patient Relationship Barriers

11.11 ESTABLISHING LINK BETWEEN LADY HEALTH WORKERS AND TRADITIONAL BIRTH ATTENDANTS TO IMPROVE NEONATAL SURVIVAL

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Objective: Trial of Improved Practices, a pilot study of main RCT "Naushahro Feroze Neonatal Survival Project" aimed to pretest and records Lady Health Workers and Traditional Birth Attendants (LHWs-TBAs) linkage processes; to ensure LHWs presence at home births for the domiciliary management of Birth Asphyxia, Sepsis and Low birth Weight to improve neonatal survival.

Method: Study was conducted between July and August, 2009 in catchment area of 11 LHWs covering 17007 populations in district Naushahro Feroze, Sindh. All fourteen TBAs were also selected from the same area. LHWs were trained and provided with Ambo-bags and Amoxil-drops, whereas TBAs also trained and were given clean delivery kits for ensuring safe deliveries. A male motivator from each LHW's family was selected to escort her attend night-time deliveries. For demand creation of LHWs presence at home-births; LHWs and male motivators conducted 29 female and 13 male health education sessions respectively. Mix-method approach was used to document the processes and outcomes of the study.

Results: Findings show that 9 (50%) home-deliveries were attended by LHWs with TBAs out of 18 reported home deliveries. Four birth asphyxia cases (two from LHWs attended and 2 from TBA conducted) were reported and all were successfully managed, respectively with Ambo-bags and mouth-to-mouth resuscitation. No death was recorded. Major barriers those

hampered LHWs presence at home-births were; distance to mothers' home, transport availability and night deliveries.
Conclusion: Study concludes that LHWs acceptance by TBAs and families at home births; paved a way forward for such cost effective future intervention to improve neonatal survival.

Keywords: Lady health workers, traditional birth attendants, neonatal survival

11.12

KNOWLEDGE AND ATTITUDE OF TAXI DRIVERS REGARDING TRAFFIC RULES AND REGULATIONS IN KARACHI, PAKISTAN

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Objective: Globally, more than 1.2 million lives are lost due to road traffic accidents (RTAs). In Pakistan, the incidence of RTAs was reported as 15.1 per 1000 in a national survey in 1997. Most common striking vehicle was found to be commercial vehicles. Despite this fact, no study from Pakistan has assessed the knowledge and attitude of taxi-drivers towards traffic rules, which we aimed to determine in our study.

Method: A questionnaire-based, cross-sectional study was performed on 205 taxi drivers recruited from the major taxi stands of Karachi. The questions pertained to demographics, taxi characteristics, drivers' knowledge about traffic rules, their attitude towards those rules, the factors affected by such knowledge and attitude and their recommendations for improving road safety.

Results: One-third (32.5%) of the taxi drivers had no formal education, while, another 30.5% were driving illegally. Better knowledge and attitude scores were positively correlated with regular seatbelt use, while, a negative correlation was seen between attitude score and the number of tickets issued by the police. Multivariate logistic regression model showed that poor attitude was significantly associated with involvement in accidents, while, educational status and year of make of taxi before 1984 were predictors of poor knowledge.
Conclusion: The findings of our study revealed many shortcomings not only in the knowledge and attitude of taxi drivers, but also, in the enforcement of traffic rules and regulations, which pose a serious threat to road safety. In light of the above results, effective measures to improve road safety should be undertaken.

Keywords: Taxi drivers, traffic rules, accidents

11.13

DEMOGRAPHIC DIFFERENCES IN APPROVAL OF PUNITIVE DISCIPLINE BY MOTHERS IN AN URBAN SETTING IN PAKISTAN

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Objective: To assess approval of punitive disciplinary practices by mothers in an urban setting of Pakistan, and the demographic factors associated with the approval of such practices.
Method: A total of 389 mothers of children aged 2-18 years, visiting the a tertiary care hospital in Karachi in June 2010, were interviewed according to a set questionnaire, which included questions on demographic data, form E of the Dimensions of Discipline Inventory (DDI) which appraises 26 discipline behaviors, along with perceptions of the socio-economic and cultural contexts in which they occur. The appraisal scores were used to generate approval scales of discipline behaviors, and a ratio of approval of punitive to non-punitive forms of discipline. Multiple regression analysis was used to evaluate significant association of demographic factors to the approval ratio for punitive disciplinary practices.

Results: The mean approval ratio of punitive to non-punitive forms of discipline for our population was 45.81%. Multiple regression analysis showed education, marital stability, household income and disciplining responsibility taken by fathers were all factors that demonstrated a significant association with higher approval ratios for punitive discipline (all p-values <.05).
Conclusion: Families with factors such as marital discord and a lower level of parental education are associated with higher approval of punitive disciplinary practices, and thus need to be focused on through intervention and education programs which could raise awareness about the detrimental effect of harsh disciplinary practices upon the psyche of children, and educate about the effectiveness of non-punitive disciplinary methods.

Keywords: Child discipline, corporal punishment, developing world

11.14

SERUM NITRIC OXIDE, TNF- α AND INTERLEUKIN-2 LEVELS AMONG WOMEN USING BIOMASS AND NATURAL GAS COOKING FUEL

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Objective: To investigate the relationship between serum levels of nitric oxide, tumor necrosis factor-alpha and interleukin-2 among women using biomass or natural gas and to determine the PM2.5 and CO levels in their respective kitchens.

Method: A total of 93 women between 15-45 years of age were taken; 43 women from Gadap town using biomass as primary fuel (biomass users), 40 women from Gadap town using natural gas as primary fuel at least for last 5 years (current gas users), 10 healthy women from Aga Khan University using natural gas for cooking throughout their lives (healthy controls). PM_{2.5} and CO was measured using an aerosol monitor Sidepak and Monoxor II, respectively. Blood samples were taken to determine serum levels of NO and TNF- α and IL-2. Serum NO was measured through Griess reaction technique and cytokines through ELISA kit. Analysis was done using Kruskal Wallis for comparing the median NO levels among the three groups. Correlation coefficient "r" was calculated between PM_{2.5} and CO and serum NO levels, TNF- α and IL-2.

Results: Significant difference was found between CO and PM 2.5 levels among biomass [CO: 20.22 (\pm 12.2), PM 2.5:4.46 (\pm 3.6)] and natural gas users [CO: 1.22 (\pm 1.22), PM_{2.5}:0.05 (\pm 0.02)] respectively. Serum NO levels ($p < 0.001$) were significantly raised among the biomass users as compared to gas users. Significant positive correlation found between exposure (CO and PM 2.5) and serum NO levels ($p = 0.01$ and 0.007 respectively).

Conclusion: Increased NO levels reflect enhanced inflammatory status due to biomass pollution among women. Further research studies are required to understand the association between biomass and serum NO levels.

Keywords: Biomass, women, inflammatory marker

11.15 UNDERSTANDING THE PERCEPTIONS OF CHILDHOOD HOME INJURY RISK: A COMMUNITY-BASED QUALITATIVE STUDY FROM KARACHI, PAKISTAN

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Objective: Home is the most common location of injuries in children under 5-years. The aim was to understand perception of caretakers of children aged 12 – 59 months about childhood home injury risk in low-income urban setting in Karachi, Pakistan.

Method: The study was done from September – October 2010. Two low-income government housing communities in Karachi, Pakistan were identified. Thirty in-depth interviews (IDIs) and ten focused group discussions (FGDs) were conducted. Each FGD had on average 6–7 participants. The IDIs and FGDs were conducted in houses within the community after taking written informed consent from the participants.

Results: Common themes identified were: 1) Many caretakers were of the opinion that injury incidents occur due to will of God, 2) Almost all caretakers were aware of home injury hazards, 3) Majority of the respondents said that their husbands encourage them to give priority to children over housework, although not

many husbands helped their wives in taking care of children at home, 4) Some commonly identified home injury hazards were presence of stoves, knives/scissors and stairs without gate. Presence of water in buckets/tubs accessible to child, electrical switches near the floor, hot iron placed on floor, pedestal fans were also related as cause of home injury, 5) Some of the barriers in reducing home injury risks were financial constraints, pressure from living in joint-family system, living in rented house. **Conclusion:** Despite awareness of childhood home injury hazards, no practical steps to reduce them are being taken by parents due to various reasons.

Keywords: Childhood home injury, perception

11.16 HOME INJURY RISK ASSESSMENT TOOL: A PILOT STUDY FROM LOW-INCOME URBAN COMMUNITIES IN KARACHI, PAKISTAN

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Objective: Globally, non-fatal childhood unintentional injuries commonly occur at home. Studies from developed countries have identified major home injury risks for children less than five-years of age. The aim was to identify household injury hazards in low-income urban communities in Karachi, Pakistan.

Method: This was prospective community-based study conducted from June – July 2010 in urban low-income setting in Karachi, Pakistan. The inclusion criterion was a household with at least one child between ages of 12-59 months. Consent was taken from caretakers. The Home Hazard Assessment Tool was developed from existing tools and experts' consultation. **Results:** Out of 752 households eligible for the study, 503 consented to participate in the study. The main caretakers were mothers ($n=404$, 80%). Of the 503 children, 93 (18%) had suffered from an injury in last three months. Some major home injury risks identified were water motor in courtyard accessible to child (70.4%), stove within reach of child (55.5%), match/lighters within reach (43.9%) and cleaning supplies within reach (56.1%). Around 47.7% had open buckets of water in bathroom. About 50.3% of the households had stairs within the house of which 50.6% did not have a gate or barrier. Medicines were accessible to a child in 15.3% households.

Conclusion: Considerable home injury risks have been found in low-income urban communities in Karachi, Pakistan. Further work is needed to develop and pilot test tools on home injury prevention for its feasibility and acceptability as a means of disseminating home safety information for use in low income urban dwelling.

Keywords: Childhood home injury, home injury hazard tool, Karachi, Pakistan

11.17**AUDIT OF EMERGENCY DEPARTMENT DEATHS TO DETERMINE THE FACTORS AFFECTING THE DECISION TO RESUSCITATE**

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Objective: Emergency Department (ED) is the gateway of our health system. ED outcomes such as mortality reflect the severity of presenting illness, underlying disorders as well as quality of the care that has been provided. There is limited knowledge of factors influencing the code decision of the patients who die in the ED. The study is conducted to provide an insight about the characteristics of the patients expired in ED and to determine the factors affecting the decision to resuscitate and/or code status.

Method: This was a retrospective study based on audit of Morbidity and Mortality log of the Department of Emergency Medicine, Aga Khan University Hospital from June 09 -June 2011. All patients who died in the ED or brought dead were included. Details about demographics, co-morbidities, primary and associated diagnoses, presence of shock and ED length of stay was recorded. Data was analyzed using SPSS version 16. A multiple logistic regression model was used to determine the strength of association between code status and other variables.

Results: Total ED visits were 95,693 with 1201 deaths during study period. There were 47.1% dead on arrival and 53% were those who expired in ED. Of those who expired, 91% were adults and 60% were males. Mean age for this group was 52.7 years. About 46% patients were full code and presence of shock as well as acute coronary syndrome had a protective effect. Age, comorbidities, severe head injuries were positively associated with a DNR status whereas sex and ED length of stay had no effect on code status.

Conclusion: Age, chronic conditions and severity of the present illness has significant impact in deciding the code status of patients who die in the ED.

Keywords: Emergency Department, mortality, code status

11.18**CADAVERIC ORGAN DONATION: KNOWLEDGE AND ATTITUDES AMONG HEALTH CARE PROFESSIONALS MANAGING CRITICALLY ILL PATIENTS IN KARACHI**

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Objective: Cadaveric organ transplantation (COT) is a common procedure worldwide. Better knowledge and attitude of health care professionals (HCP) towards COT is associated with higher consent rates from potential donors. With recent legislation on cadaver organ transplantation in Pakistan, the baseline level of knowledge and attitude of HCPs in critical care areas towards the issue needs to be assessed.

Method: 243 participants were selected by purposive sampling from HCPs working in critical care areas of two hospitals in Karachi and asked to fill a pre-tested questionnaire assessing their knowledge and attitude towards COT. Associations were tested by Pearson's chi square test, Mann-Whitney test and Spearman's rho.

Results: 58.8% of the HCPs were physicians and 41.2% were nurses. 91.4% correctly identified brain death. 51.5% were supportive of COT. Majority had concerns regarding a religious ruling against cadaveric donation and ability of the government to run the system fairly (56.8% and 67.5% respectively). 56.4% respondents were willing to consent to receive an organ while only 35.3% were willing to donate after their own death. Willingness to approach patients and families for consent for donation was 42.7% and 37% respectively. More than 80% were unwilling to ask for consent on the grounds that the patient could refuse, would get upset and aggressive, and/or would lose trust in the doctor/nurse. 60.5% of the study participants had an overall positive attitude towards COT, while 2.9% had an overall negative attitude. There were no significant differences in the knowledge and attitude scores across gender, hospital, profession and level of experience.

Conclusion: Before implementation of the COT system, HCPs must be subjected to a training program that addresses their concerns. This will increase their motivation in approaching patients/patients' families for consent, increasing cadaveric organ donation rates.

Keywords: Cadaveric organ donation, Brain death, Consent training

11.19**POPULATION ATTRIBUTABLE RISK OF UNINTENTIONAL CHILDHOOD POISONING IN KARACHI PAKISTAN**

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Objective: The percentage of unintentional childhood poisoning cases in a given population attributable to specific risk factors (i.e., the population attributable risk) can be calculated; determination of such risk factors associated with potentially modifiable risk factors, are necessary to focus prevention strategies.

Method: We calculated PARs, using 120 cases with unintentional poisoning and 360 controls in a hospital based matched case control study. The risk factors were accessibility to hazardous chemicals and medicines due to unsafe storage, child behavior reported as hyperactive, storage of kerosene and petroleum in soft drink bottles, low socioeconomic class, less mother education and history of previous poisoning.

Results: The following attributable risks for the indicated risk factors were observed: 12% (95% confidence interval [CI] = 8% - 16%) for both chemicals and medicines stored unsafe, 19% (15% - 23%) for child reported as hyperactive, 40% (38% - 42%) for storage of kerosene and petroleum in soft drink bottles, 48% (42% - 54%) for low socioeconomic status, 38% (32% - 42%) for no formal mothers education and 5.8% (2%

-10%) for history of previous poisoning. 48% of cases of overall study population could be attributed to at least one of the six risk factors. Among girls, this proportion was 23 percent and 43 percent among boys. About half of the unintentional childhood poisoning cases in this Pakistani population could be avoided. *Conclusion:* Exposure to potentially modifiable risk indicators explained about half of the cases of unintentional poisoning among children under five years of age in this Pakistani population, indicating the theoretical scope for prevention of the disease.

Keywords: PARs, poisoning

11.20

ILLUMINATING THE DARK SIDE - VITAMIN D STATUS IN TEN DIFFERENT LOCALITIES OF KARACHI, PAKISTAN.

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Objective: Numerous south Asians residing in their native countries are vitamin D deficient (VDD). Low intake of vitamin D fortified foods and less exposure to sunlight due to poor housing structures or geographical factors like air pollutants obstructing the UVB rays contribute to VDD.

Method: We reviewed medical records of individuals who had 25-hydroxy D (25[OH]D) assessed (n= 4788) at the Aga Khan University Hospital (AKU) between 2007-2008 to obtain addresses of individuals. The addresses were grouped into 10 neighborhoods with distinct housing structure attributes and localities. One way ANOVA assessed differences in mean log serum 25[OH]D values between residents of different neighborhoods, genders and ages.

Results: High prevalence of VDD (74%) is observed in residents of all the ten neighborhoods of Karachi; while overall insufficiency state was observed in 13.3 % of the participants. Only 12.7 % were identified to have sufficient levels. When ANOVA was applied statistically significant difference between mean log serum 25OHD values of participants residing in different neighborhoods of Karachi was observed (p value < 0.01). Post Hoc test results reflected that lowest 25OHD levels were observed in residents of Landhi, Malir and Korangi. Whereas residents of Clifton, Defence and PIB colony showed highest 25OHD levels as compared to other residential localities. *Conclusion:* We document a high frequency of VDD in all the studied localities of an urban city. Our findings warrant dietary vitamin D supplementation.

Keywords: Residents, vitamin D, localities

11.21

DEMOGRAPHIC DIFFERENCES IN APPROVAL OF PUNITIVE DISCIPLINE BY MOTHERS IN AN URBAN SETTING IN PAKISTAN

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Objective: To assess approval of punitive disciplinary practices by mothers in an urban setting of Pakistan, and the demographic factors associated with the approval of such practices. *Method:* A total of 389 mothers of children aged 2-18 years, visiting the a tertiary care hospital in Karachi in June 2010, were interviewed according to a set questionnaire, which included questions on demographic data, form E of the Dimensions of Discipline Inventory (DDI) which appraises 26 discipline behaviors, along with perceptions of the socio-economic and cultural contexts in which they occur. The appraisal scores were used to generate approval scales of discipline behaviors, and a ratio of approval of punitive to non-punitive forms of discipline. Multiple regression analysis was used to evaluate significant association of demographic factors to the approval ratio for punitive disciplinary practices.

Results: The mean approval ratio of punitive to non-punitive forms of discipline for our population was 45.81%. Multiple regression analysis showed education, marital stability, household income and disciplining responsibility taken by fathers were all factors that demonstrated a significant association with higher approval ratios for punitive discipline (all p-values <.05). *Conclusion:* Families with factors such as marital discord and a lower level of parental education are associated with higher approval of punitive disciplinary practices, and thus need to be focused on through intervention and education programs which could raise awareness about the detrimental effect of harsh disciplinary practices upon the psyche of children, and educate about the effectiveness of non-punitive disciplinary methods.

Keywords: Corporal punishment, child discipline, developing world

11.22

ASSOCIATION OF HYPERHOMOCYSTEINEMIA WITH FOLATE, VITAMIN B12 AND VITAMIN B6 DEFICIENCIES IN AN URBAN POPULATION IN KARACHI, PAKISTAN

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Objective: To find out the prevalence of hyperhomocysteinemia, and deficiencies of folate, vitamin B6 and vitamin B12 in an urban population in Karachi, Pakistan.

Method: In a pre and post experimental study, eight hundred and seventy-two apparently healthy adults (aged 18-60 years; 355 males and 517 females) were recruited from a low-income urban locality in East of Karachi from February 2006 to March 2007. Fasting venous blood was obtained. Serum was analyzed for folate and vitamin B12. Plasma was analyzed for pyridoxal phosphate (PLP, coenzymic form of B6) and total homocysteine. A group of vitamin-deficient individuals (n=194) was given 3-week supplementation with folic acid (5mg/day), methycobalamin (0.5mg/day) and pyridoxine hydrochloride (vitamin B6, 50 mg/day). After supplementation, serum/plasma levels of folate, vitamin B12, PLP and homocysteine were again determined. **Results:** Prevalence of hyperhomocysteinemia (>15µmol/l) was 32%. Similarly percent values of folate deficiency (<3.5ng/ml), vitamin B6 deficiency (PLP<20 nmol/l) and vitamin B12 deficiency (<200pg/ml) in the study population were 27.5%, 33.7% and 9.74%, respectively. Hyperhomocysteinemia was associated with male sex, folate deficiency, vitamin B12 deficiency [OR(95%CI), 8.3(5.7-12.1); 2.5(1.76-3.58); 2.6(1.5-4.5), respectively]. A 3-week supplementation with folic acid, methycobalamin and pyridoxine hydrochloride in vitamin-deficient subjects decreased plasma homocysteine levels by 37%.

Conclusion: High prevalence estimates of folate, vitamin B12, and vitamin B6 deficiencies appear to be the major determinants of hyperhomocysteinemia in a low income general population in Karachi.

Keywords: Cardiovascular diseases, hyperhomocysteinemia, Folate, vitamin B12, Vitamin 6, deficiencies

11.23

PROBIOTICS; DOES IT BECOME AN ALTERNATIVE IN ERA OF PATHOGENIC RESISTANT TO ANTIBIOTIC?

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Objective: Global using of vaccines and other agents to prevent from diseases now become advanced. Among all these, at the start of 20th century pharmaceutical probiotics, a live microbial food supplement or component of bacteria, have been also used as alternative treatments or preventative therapies due to inhibition of pathogen and toxin. The gorge of antibiotics lead to emergence of multiple-antibiotic resistant pathogens day by day has refocused clinical attention on the field of probiotics. The main objective of this review based articles research is to find the effective ness of probiotic in different pathogenic field and try to find it as either an alternative treatment in antibiotic resistant era. **Method:** Current enhance efficacy, safety, mechanisms of action and clinical indication of following assorted probiotics are reviewed: *Saccharomyces boulardii*, *Lactobacillus casei* GG, *Lactobacillus acidophilus*, *Lactobacillus bulgaricus*, *Bifidobacterium bifidum*, *Streptococcus thermophilus* and *Enterococcus faecium*. It is a review articles based research done by ScienceFinder, NCBI, ScienceDirect websites. Almost 100 articles were reviewed as shown in given references. **Results:** Current study shows a good evidence for the therapeutic use of probiotics in infectious diarrhea in children, recurrent *Clostridium difficile* induced infections and postoperative

pouchitis, traveler's diarrhea, antibiotic-associated diarrhea, immune function and infection, *helicobacter pylori*, inflammation, inhibiting pathogenic bacterial growth, colitis, Lactose intolerance, Colon cancer, reduction in cholesterol and blood pressure and to some extent to reduced anxiety and depression. Anaerobic infections which seem to respond well to probiotics are infections which involve the disruption of normal microbial flora while prevention of postoperative bacterial translocation, irritable bowel syndrome and inflammatory bowel disease continues to emerge.

Conclusion: As probiotics seem to be a promising agent in era of pathogenic resistance to drug so there is need to give more attention on this gleaming agent.

Keywords: probiotics, pathogenic resistant

11.24

INJURY – A HIDDEN CAUSE OF MORTALITY AMONG PAKISTANI WOMEN OF 12 – 49 YEARS OF AGE: RESULTS OF PAKISTAN DEMOGRAPHIC AND HEALTH SURVEY 2006-07

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Objective: Women health is beyond pregnancy and its complication. Other mortality causes like injury prevention need to be recognize. The objective here is to look at the causes of injury-mortality amongst Pakistani women between ages of 12-49 years.

Method: Pakistan Demographic Health Survey (PDHS) was conducted from September 2006 - February 2007. It was a two-stage, stratified, random sample design. From 95,000 households surveyed, a total of 1,125 female deaths (12-49 years) were identified since January 2003. The cause of death as told by the respondents is reported in this analysis.

Results: Of the 1,125 female deaths, Verbal Autopsy was completed for 1,062 females (response rate 94%). Out of 1,062 deaths, 6.4% were due to injuries thus ranking among top five causes of women deaths. Of these 102 self reported injury deaths, 22 (21.2%) died due to road traffic injuries (RTIs), 19 (18.4%) from falls and 15(14.9%) due to severe burns. These injuries were more common in younger women 12-29 years (67%) than older 30-49 of age (33%). The injury mortality rates for rural and urban areas are 19 per 100,000 and 11 per 100,000, respectively. Most women with injury-mortality were married (63%) and 74% were not working for wages. More than half of the women who had died due to injury were not educated (n=68, 66.1%).

Conclusion: PDHS 2006-07 reported injury among the top five causes of death in Pakistani women and is more common in young women between 12 to 29 years of age.

Keywords: Women injuries, , Pakistan, road traffic injuires

11.26 PROPORTION AND ASSOCIATED FACTORS OF PSYCHOACTIVE DRUG USE AMONG YOUNG ADULTS IN KARACHI

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Objective: An excessive or improper use of drugs through self-administration for non-medical purposes results in its abuse. Worldwide, young people are believed to be most vulnerable to this abuse. This study aimed to assess the proportion of the use of psychoactive drugs and related characteristics and also to identify the factors associated with psychoactive drug use among young adult males.

Method: A multi-centered cross-sectional survey was conducted in six primary care/ family medicine clinics affiliated with a tertiary care teaching hospital in Karachi. We interviewed 489 young male adults who visited the studied clinics for any reason during the study period.

Results: Results: The overall prevalence of psychoactive drug use was 12.3% whereas only 2.5% were diagnosed for any psychiatric illness. Around 46.7% of the psychoactive drug users were taking it for more than 6 months, 100% use it to relax and sleep while 40% does it to hang on. By univariate analysis, the factors associated were nuclear family system (OR=2.97, 95% CI: 1.71-5.17) as compared to joint family system, having chewing habit (OR= 4.31, 95% CI: 2.33-7.98) as compared to without this habit, being smoker (OR=3.61, 95% CI: 2.07-6.29) as compared to non-smokers, having family member(s) using psychoactive drugs (OR=4.00, 95% CI: 2.29-6.99) as compared to not having any family member using psychoactive drugs, education for 0-12 years (OR=2.05, 95% CI: 1.12-3.74) compared to those with an education of >12 years.

Conclusion: Psychoactive drug use is a major problem among young adult males which can be suppressed through interventional policies.

Keywords: Psychoactive drugs, young adults, Karachi

11.27 ASSOCIATION OF GENDER AND PARENTAL FACTORS WITH PREVENTABLE LIFESTYLE RISK FACTORS FOR NON-COMMUNICABLE DISEASES IN THE PAKISTAN ADOLESCENTS SCHOOLS STUDY 1 (PASS-1)

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Objective: The purpose of this study was to identify the proportion and co-existence pattern of preventable lifestyle risk factors for NCDs among adolescents. We also evaluated the association of these preventable factors by gender and parental characteristics.

Method: In a school-based study, pre-tested and structured questionnaires were filled by 414 adolescents (14 to 17 years) studying in six schools of three major cities of Pakistan. Chi-square test and adjusted odds ratio (AOR) with 95% confidence interval (CI) were calculated in multinomial logistic regression analysis.

Results: Over 80% of adolescents had unhealthy diet and 54% were physically inactive. Majority of adolescents were exposed to passive smoking while 14% were also current smokers. Over one-third of study participants were chewing betel nut and one-fourth were using oral tobacco. More girls were physically inactive (OR=4.07; 95%CI=2.69-6.17), whereas greater proportion of boys were current smokers (OR=2.17; 95%CI=1.19-3.91), exposed to passive smoking (OR=2.57; 95%CI=1.72-3.83), and using betel nut (OR=2.03; 95%CI=1.34-3.06). Use of unhealthy diet and smokeless tobacco were equally prevalent among boys and girls. Only 3.1% of the participants were without any preventable lifestyle risk factor for NCDs while over 80% of them had co-existence of = 2 factors. Co-existence of risk factors was independently associated with fathers being blue collar workers (AOR=3.57; 95%CI=1.07-11.92) and whose parents were not treating their child fairly (AOR=5.05; 95%CI=1.29-19.78).

Conclusion: In this study most adolescents had preventable factors for NCDs. These results warrant comprehensive and integrated interventions to prevent lifestyle risk factors, with parents being front-line stake-holders.

Keywords: Non-communicable Disease, Adolescents, Pakistan

11.28 IMPROVING CROSS BORDER HEALTHCARE IN GORNO- BADAKHSHAN AUTONOMOUS OBLAST TAJIKISTAN) AND AFGHAN BADAKHSHAN (ISLAMIC REPUBLIC OF AFGHANISTAN) THROUGH eHEALTH

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Objective: The Aga Khan Development Network (AKDN) eHealth Resource Centre (eHRC) is assisting cross-border Health program to strengthen health systems in central Asia and to address inequities in health care, by creating linkages between the communities in the mountainous areas of the Gorno-Badakhshan Autonomous Oblast (GBO) in Tajikistan and Badakhshan province of Afghanistan using eHealth. **Method:** To evaluate the potential of using eHealth for the overall growth of GBO and Afghan Badakhshan regions, a rapid assessment was conducted from April – June 2011 with the local stake holders of the two Badakhshans to identify priority health issues; defining the support required to implement eHealth; and identify potential resources within and outside the country to support eHealth activities

Results: The assessment identified following issues needing improvement in Tajik and Afghan Badakhshans: • Limited access to referral care • Poor quality of health care due to lack of experienced staff and diagnostic equipment (GBO); and lack of continuing professional development programmes (Afghnaistan) • Problems in compiling Hospital/Management Information Systems(H/MIS) data on a regular basis.

Conclusion: Specific recommendations are made by the stakeholders for developing infrastructure, human, financial and policy support for an eHealth program. The other

recommendations involved: • To establish an eHealth support system in both the Badakshans linking all levels of health facilities. Also cross-border consultations are possible at the level of the district or provincial hospitals. • An eLearning programme could support the training needs of healthcare providers in both the regions. The University of Central Asia (UCA) could be approached to offer English and Information Technology courses using eLearning. • A small scale implementation of H/MIS would help timely management of data. A proposal has been designed to improve access and quality of health services in the cross-border region of GBAO and Afghan Badakshan using eHealth solutions. The aim is to strengthen health systems and address inequities in health.

Keywords: eHealth, need assessment, telehealth

11.29

STRENGTHENING HEALTHCARE AND PROFESSIONAL EDUCATION IN AFGHANISTAN THROUGH EHEALTH

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Background: Afghanistan presents a society that is struggling with long-standing conflict and post-conflict development. Some development is seen in health, education and telecommunication sectors opening doors for innovative solutions, such as eHealth. The Aga Khan University (AKU), Karachi, Pakistan, established a telehealth link with French Medical Institute for Children (FMIC), Kabul in 2007 to support teleradiology activities. The initiative is currently extended to Bamyan and Faizabad Provincial Hospitals, connecting sites for teleconsultation and continuing professional development of the staff. This abstract focuses on establishing eHealth connection in Bamyan.

Objective: The main objective of this study was to establish a model for Telehealth and eLearning activities between Bamyan Provincial Hospital and the French Medical Institute for Children (FMIC), Kabul; and evaluate its feasibility.

Method: This study used a mixed method design involving both qualitative (case study) and quantitative (mainly pre and post intervention) techniques to test the feasibility and evaluate the services. Live consultations were provided through video conferencing from FMIC to Bamyan in the required specialties mutually identified. Store-and-forward consultation was carried out using open source software, called iPath for pathology and shared folder for radiology cases, where FMIC experts respond to cases requested by remote physicians.

Results: To date (September 2010 to 2011), a total of 854 consultations have taken places. Live consultations have been requested in seven specialties i.e. Paediatrics 52(10%); Cardiology 43(8%); OBG 11(2%); ENT 11(2%), Orthopaedics 16(3%); Dermatology 399 (75%) and 1 Pain Management case. 194 radiology cases were requested and 127 pathology cases were uploaded on iPath; 72% were responded within 24 hours while rest were answered within maximum of 48 hours time. The average time saved was 5 days or even more, and cost saved per case was US \$200 including both travel and consultation charges. A total of 20 eLearning sessions were delivered from FMIC to Bamyan for building capacity of 280 health care

providers, serving at different healthcare levels.
Conclusion: The model has shown great success with high rates of satisfaction among healthcare providers and patients.

Keywords: eHealth, Telehealth, eLearning

11.31

BROADENING HORIZONS OF CARE: FEMALE ADULT LITERACY PROJECT CARRIED OUT BY NURSING STUDENTS IN SINDHABAD – A TEMPORARILY SET COMMUNITY FOR INTERNALLY DISPLACED PERSONS (IDPS) IN KARACHI, PAKISTAN

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Objective: The purpose of this project was to identify educational status, knowledge, attitudes and practices of people of Sindhabad about female literacy and to develop and implement nursing care plan for the enhancement of literacy status of adult females of the community.

Method: A convenient sample (n=200) was taken with an inclusion criteria of Sindhi or Urdu speaking females of 15 – 50 years of age. An adult literacy assessment tool containing relevant questions was developed and run among the participants. Extensive literature review was done and data from the tool was analyzed using statistical software (SPSS).

Results: Data analysis showed that 86.5% of the participants were unable to write their names, 89.6 % have received no formal education and 34.2% of them felt guilty of being illiterate. Moreover, 94.3% believed that females have right to educated themselves, 66.5% thought that their families will allow them to study and 93.3% acknowledged the fact that education helps in improving quality of life. In addition to this, 43% verbalized presence of cultural hindrance towards getting education, 66.3% wanted a free of cost access to education and 58.5% wanted it to be an only-females education system.

Conclusion: An adult literacy centre was established as part of the implementation process. This project was an application of nursing students' learning about the advance concepts in community health nursing.

Keywords: IDPs, adult literacy, community health nursing

11.33

SOCIAL PHOBIA; A HIDDEN DISASTER IN THE OUTSKIRTS

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Introduction: In the collectivist nature of suburbs of Pakistan, Social phobia can be an extremely disruptive disorder, which usually causes great distress in the sufferer and sometimes for those close to them. (Neal & Edelmann, 2003). It is the third largest mental health delinquent in the world with its chronic nature and poor quality of life; and therefore should be determined early in childhood and timely treatment should be given.

Objective: This literature review is an endeavor to discover the

policy support for an eHealth program. The other concept of social phobia in sociocultural context.

Method: Systemic review of literature from 16 research articles from 1998-2010 was conducted through electronic medium by using Elsevier and SAGE.

Results: Literature clearly highlights that social phobia is more persistent in the countries which are collectivist. It was found that neurobiological factors, genetics, gender, and socio culture plays an important role and are major determinants of social phobia. In the socio cultural context, collectivist societies are more prone towards getting social phobia and the rural communities in Pakistan tend to have a collectivist orientation; thus the kids there are at high risk and so it should be identified from the beginning, since the age of onset varies widely from 5 years to 9 years of age in children. The treatment therapies vary widely such as exposure therapy, social skills therapy, and applied relaxation.

Conclusion: Much more researches and field work is required in reducing social phobia especially in the young girls of suburbs of Pakistan in order to prepare the future generation for developing a healthy family and thus a healthy country.

Keywords: Social phobia, collectivist countries, therapies

11.34 PREVALENCE AND PREDICTORS SMOKELESS TOBACCO USE IN THE ADULT POPULATION OF KARACHI

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Objective: Smokeless tobacco (SLT) accounts for approximately a third of all tobacco use in South Asian countries and is associated with high mortality and morbidity. However, current literature does not focus on this subset of the population. The objective of this study was to assess the prevalence of smokeless tobacco and to identify socio-demographic factors that may be associated with its use.

Method: A multi-institutional cross-sectional study was conducted from December 2010 and February 2011 in Karachi, Pakistan. All adult patients were included. Through convenience sampling, 461 participants were interviewed with a structured questionnaire. SLT practice was identified as 'daily', 'occasional', and 'former' users. Multivariable logistic regression was used to determine associations of smokeless tobacco use while adjusting for the following covariates: age, gender, income, level of education, marital status, occupation and current cigarette use. *Results:* Out of 461 participants, 149(32.3%) used smokeless tobacco. Of these, 105(70%) used it daily, 34(22.7%) occasionally and 10(6.7%) formally. Paan(40.3%) was the most widely used form of SLT followed by Ghutka(23.5%) and Chalia(21.1%). Male gender (OR: 1.80, CI: 1.16-2.80) and current cigarette smoking (OR: 1.85, CI: 1.03-3.33) were independently associated with SLT use. Undergraduate and postgraduate level of education were associated with decreased odds of SLT use (OR: 0.48, CI: 0.26-0.90).

Conclusion: Approximately one in three people use smokeless tobacco. Male gender and cigarette use significantly predict its

use. Cigarette smoking is a modifiable risk factor and future work should focus on prevention strategies for all types of tobacco use.

Keywords: Smokeless tobacco, Pakistan, prevalence

11.36 POLICY DIMENSIONS ON AVAILABILITY OF ESSENTIAL MEDICINES FOR CHILDREN UNDER-5 AT PHC- A COMMUNITY PERSPECTIVE OF SQUATTER SETTLEMENT OF KARACHI.

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Objective: Child health outcomes in the poor communities are affected by the non-availability of essential medicines. The study was done i) to authenticate the shelf-availability of essential medicines for children under-5 year of age at primary health care facilities and ii) to explore the policy dimension from viewpoints of community and local health care provider on the issue of availability and affordability of essential medicines. *Method:* We examined the shelf-availability of medicines for children under-5 years of age at a primary healthcare center at Rehri Goth by observation, conducted focus group discussions with the mothers and interviewed health care providers of the area to study the phenomenon.

Results: We found that 61% of the essential medicines for selected childhood illnesses were not in the stock at PHC. 'Need assessment for availability based on the disease trends', 'good managerial controls over supplies at government level', 'equitable access of essential medicines' and public-private partnership to improve the access' are the main area which were found to improve the access to essential medicines.

Conclusion: Improving supply systems based on pattern of illnesses in the communities need to be known before improvements can be made and public sector needs to be responsive in this regard. Public-private partnership can be tested in the communities where private sector is actively involved in the service provision. Progress towards MDGs will not occur without a major effort to improve access to medicines for children.

Keywords: Policy, PHC, squatter settlement

11.37 A REMARKABLY FAST HEALING OF CORNEA ASSOCIATED WITH DRAMATIC VISUAL RECOVERY AFTER ELECTRIC BURN IN A YOUNG ADULT

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Objective: Ocular/orbital electrical burns are uncommon events. A 20-year-old man presented to us with a history of electric burn he had received an hour and a half before presentation. *Method:* He reported having intense burning of eye and blurring of vision, watering and pain in both eyes. The left eye was

severely affected. He had a poor visual acuity (CF in LE) and a good one (20/25) in the right. He had difficulty in opening his LE which had a deeply-congested conjunctiva and a diffuse corneal epithelial burn with areas of epithelial loss. The right eye was less affected with marked conjunctival congestion and multiple corneal punctate epithelial staining. There was marked AC reaction in the LE. Superficial epithelial layer of patient's left eye was debrided followed by use of topical antibiotic (polyfax eye ointment and moxifloxacin 0.5% eye drops) and dilating eye drops (mydriacyl 1%). The eye was padded for the next 48 hours. For the right eye, moxifloxacin 0.5% eye drops, mydriacyl 1% eye drops and prednisolone 1 % eye drops were prescribed.

Results: On day 3, the LE pad was removed. A remarkable improvement in VA— from CF to 20/25— was noticed in the left eye. Both the corneas had healed dramatically. Ten days after the injury, the patient had a good visual acuity of 20/20 in the right eye and 20/25 (best-corrected) in the left one. The cornea on both sides was found to be clear.

Conclusion: This case report highlights the importance of early intervention in case of electric burn.

Keywords: Electric burn, cornea, visual loss

11.38 KNOWLEDGE OF PATIENTS' VISUAL EXPERIENCE DURING CATARACT SURGERY: A SURVEY OF OPHTHALMOLOGISTS IN KARACHI

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Objective: We assessed the knowledge of ophthalmologists in Karachi regarding visual experiences of patients during cataract surgery.

Method: This was a cross-sectional survey conducted at the Ophthalmology Society of Pakistan Annual Conference 2011, in Karachi. Ophthalmologists were asked what they thought patients could visually experience during a cataract surgery. A self-administered questionnaire, developed on information derived from previous studies, was used. Data were entered and analyzed using SPSS.

Results: 150 ophthalmologists, residents, medical officers were contacted. Of these, 68 (45.3 %) responded. Survey participants who operated under regional anesthesia and topical were asked what proportion of individuals undergoing cataract surgery retained any form of vision during surgery. Those who operated under regional anesthesia replied that 38.8 % patients are able to see at least something during the surgery. Those who operated under topical anesthesia said 64 % patients are able to see. The majority of participants (39/68 or 57.4 %) did not think that retained vision was a source of fear or anxiety for patients during cataract surgery under regional anesthesia. While most of the surgeons (54/68 or 79.4%) thought that preoperative counseling can reduce patients' anxiety, only a third (22/68 or 32.4%) reported that they regularly counseled their patients for possible

visual phenomenon experienced during the surgery.
Conclusion: Our study reveals that almost half of the ophthalmologists are not aware of the visual phenomenon experienced by patients during cataract surgery.

Keywords: Perceptions, visual experiences, cataract surgery

11.39 ETIOLOGY OF RETINAL DETACHMENT IN PATIENTS PRESENTING AT A TERTIARY HOSPITAL IN KARACHI, PAKISTAN.

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Objective: To find out the etiology of retinal detachment among patients presenting with complex retinal detachment at a tertiary hospital in Karachi, Pakistan.

Method: This was a retrospective file review of 173 consecutive cases that underwent pars plana vitrectomy with silicone oil tamponade for complex retinal detachment and subsequent removal of silicone oil (ROSO) at a tertiary care hospital in Pakistan. Data were extracted from medical records. Clinical information obtained included age, sex, etiology of the detachment, pre and post-op visual acuity. Data were analyzed using the SPSS for Windows statistical package

Results: Retinal detachment in a fifth of eyes resulted from proliferative diabetic retinopathy (PDR) while in the remaining eyes the etiology was proliferative vitreoretinopathy (PVR)---Rhegmatogenous (45.1%), Spontaneous (12.1%), high myopia (10.4%), trauma w/o IOFB (4.6%), trauma with IOFB (0.6%), post-cataract extraction (3.5%) and post-endophthalmitis (2.8%).
Conclusion: A significant proportion of the causes of retinal detachment are preventable and can be addressed through targeted public health interventions.

Keywords: Retinal detachment , etiology, pars plana vitrectomy

11.40 PREVALENCE OF INTERNET ADDICTION DISORDER (IAD) AMONG UNIVERSITY STUDENTS: RESULTS ACROSS VARIOUS DISCIPLINES IN KARACHI, PAKISTAN

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Objective: Despite increasing global concern over the potential adverse effects of excessive or maladaptive internet usage, there is a lack of evidence to establish the prevalence of this proposed mental disorder in Pakistan. To examine the prevalence of internet addiction amongst university students in Karachi, Pakistan; to

compare this prevalence among various disciplines; and to examine the relationship of prevalence with determinants in a representative sample of university students.

Method: A cross-sectional analytical study was conducted in four major universities of Karachi, Pakistan from April to June 2011, comprising of five professional disciplines at the undergraduate level; Medicine, Nursing, Arts, Engineering and Business. A written structured questionnaire was filled out by the subjects, which included a modified version of structured Young's Diagnostic Questionnaire (YDQ) for internet addiction. SPSS was used for data analysis.

Results: A total of 604 participants [males=304 (50.3%); females=300 (49.7%)] were included in our study with a mean age of 21.05 (SD \pm 2.48) years. There were 133 medical students, 125 nursing students, 109 business students, 120 engineering students and 114 students studying arts. Overall prevalence of IAD as per the YDQ was found to be 19.9% (n=120). Internet addiction was strongly dependent on gender with highest prevalence among males (male: female = 1.72:1, 95% CI=1.28-2.92). Multiple logistic regression showed that male gender, duration of time spent actively browsing online and whether or not the individual remained connected to the internet when not actively browsing were factors positively associated with IAD.

Conclusion: The present study suggests that Internet addiction is not a rare entity among Pakistani university students. No association was found between study disciplines in universities and the level of internet addiction. In addition, students with internet addiction possess different psychological features when compared to those who do not use Internet that frequently.

Keywords: Internet addiction disorder, university students, Pakistan

11.41

SMOKING BAN INITIATIVES: PUBLIC AWARENESS & IMPACT IN PAKISTAN.

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Objective: In 2002, the government of Pakistan, in an effort to reduce cigarette smoking, passed new laws entitled "Prohibition of Smoking and Protection of Non-smokers Health Ordinance 2002" which restricted the places one can smoke, the sale of cigarettes to minors and advertisement of cigarettes without a warning. Although the legislation has been passed for almost a decade, its awareness and subsequent success remains questionable and undocumented. It is for this reason that we set out to assess the knowledge, attitude and practices among members of the general populace regarding the existing anti-smoking laws and identification of strategies to curtail cigarette consumption.

Method: Our study was a cross-sectional survey conducted from March 7th to April 14th 2011 including 339 individuals selected as per inclusion criteria (of which 53 were cigarette retailers as

well). The data was collected via face to face interviews. We used a convenience sampling, in which we interviewed cigarette retailers all over Karachi and people within 50 meters of the retailer. EpiData v3.1 was used for data entry and SPSS v17 for analysis.

Results: The prevalence of smoking and passive smoking in our study were found to be 27.4% and 41.9% respectively. Of the 339 people we interviewed, 192 (56.6%) were aware of the fact that smoking is prohibited on public transport. 202 (59.6%) people were aware that smoking is prohibited at public places and 231 (68.1%) people knew that smoking is prohibited at work places. 250 (73.7%) people were aware of the fact that sales of cigarettes to minors (under the age of 18) is prohibited. 139 (41.0%) were aware that the sale of cigarettes within 50 meters of an educational institute is prohibited. 193 (56.9%) people were aware of the fact that cigarette advertisements without warnings are prohibited. Of the 53 cigarette retailers that participated in our study, 32 (60.4%) retailers knew that sales of cigarettes to minors is prohibited, yet 48 (90.6%) of them admitted that they have never asked anyone who they thought was underage for proof of identification before selling them a cigarette. 20 (37.7%) retailers were aware that the sale of cigarettes within 50 meters of an educational institute is prohibited. 18 (34.0%) retailers were located within 50 meters of an educational institution.

Conclusion: Based on the results of our study there is a need to increase awareness regarding the existing anti-smoking laws among the public, and to ensure the proper implementation of these laws. As per public opinion, cracking down on the underage sales of cigarettes, increasing the tariff of cigarettes and involvement of the media in advertising the adverse effects of cigarettes may help reduce the prevalence of smoking in Pakistan.

Keywords: Smoking, laws, awareness

11.43

INTERVENTIONS TO PROMOTE ADHERENCE TO TUBERCULOSIS TREATMENT AMONG PATIENTS ATTENDING BASIC MEDICAL UNIT OF TALUKA GAMBAT, PAKISTAN: A PRE-POST INTERVENTION STUDY.

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Objective: Tuberculosis remains a major public health issue in developing countries. Non-adherence to tuberculosis medicine has been found to be responsible for increase default and decrease in the cure from disease and emergence of multidrug resistance tuberculosis. We endeavor to identify the impact of interventions on the adherence to tuberculosis medicine among patient attending basic medical unit of Taluka Gambat Sindh

Method: A pre-post intervention study was conducted between 2004-07. All the patients diagnosed as having tuberculosis by sputum smear and chest x-ray attending Basic Medical Unit in

Taluka Gambat hospital were enrolled in the study. Interventions such as education, and counseling of patient and family members, default tracer, regular follow-ups were implemented successively over the years along with DOTS. Data was collected on standard proformas and registers (TB01 & TB03). Analysis was done in SPSS v.16 and outcomes (Treatment success rate, cure rate and default rate) were compared using Cox proportional regression model

Results: Total 1280 tuberculosis patient were included in the analysis. Treatment success rate and cure rate showed increase of 34% and 56% respectively from baseline. Similarly the default rate declined from 38% to 0% during 2004-07. Hazard of getting cured from disease increased from 1.78 (CI: 1.24-2.54) to 2.62 (CI: 1.84-3.73) to 3.12 (CI: 2.21-4.41) after successive implementation of interventions along with DOTS over the three years period. There is 88% reduction in the risk of being default in year 2007 in comparison to 44% risk reduction only after education and counseling interventions along with DOTS

Conclusion: Interventions such as education and counseling of patient and family members, patient tracers, regular follow ups, and improving patient satisfaction with the health care providers and system have found to be effective and have an impact on improving treatment outcomes with tuberculosis if implemented with DOTS and can be helpful to reduce the burden of multidrug resistant tuberculosis in rural area of Pakistan

Keywords: Tuberculosis, pre post intervention, treatment adherence

11.44

EYE TRAUMA: IS WEARING GLASSES A GOOD IDEA WHILE BATTING?

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Objective: A significant proportion of eye injuries are related to sports and recreation. Two cases of severe eye trauma are reported, with a view to advocate for preventive measures.

Method: A 15-year-old right-handed boy had his glasses smashed after being hit in the face by a bouncing cricket ball while batting. The impact was on the left side and resulted in left ocular trauma. He was immediately brought to the emergency room by his friends. Initial assessment showed a visual acuity of perception of light (PL) in the left eye. There was a corneal tear on the temporal side accompanied by an iris prolapse and ruptured anterior capsule with cataract formation. A corneal repair and lens aspiration were performed. An intraocular lens was implanted after it was ascertained that the posterior capsule was intact and the fundal glow was positive. Six months later, he has a best-corrected visual acuity of 20/30 with -2.50D Sph/-3.0D Cyl @105°. Within few months of this case, another cricketer, this time a 24-year-old male, who got hit in his glasses by a bouncer, was brought to us. On examination he could detect only hand movement. There was a corneal tear on the nasal side which was associated with an iris prolapse. The cornea was repaired.

He now also has a best-corrected visual acuity of 20/30 with -1.50 D Sph/-2.0D Cyl @ 75°.

Conclusion: Polycarbonate lenses are more impact-resistant than regular plastic or glass lenses. and should be a good choice for people who regularly participate in sporting activities. This should be supplemented by wearing safety helmets in some of the sports, such as cricket. These measures if taken can prevent a significant proportion of eye injuries.

Keywords: sports, eye trauma, eye glasses

11.46

VALIDATION OF SHORT AND LONG INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRES AMONG URBAN, ADULT PAKISTANI POPULATION

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Objective: Given the association between physical activity and non-communicable diseases it is important to measure physical activity in free living population accurately. The objective of this study was to translate, adapt and validate Short and long International Physical Activity Questionnaire (IPAQ) among urban, adult Pakistanis.

Method: This study was conducted at one of the urban sites of Prospective Urban Rural Epidemiology (PURE), the Karachi Port Trust (KPT) staff colony. The participants were administered the questionnaires and given a GT3X accelerometer to wear for next seven days. The accelerometers were collected back on day 8 and IPAQs were administered again. MET minutes per week were calculated for IPAQs and counts / minute for accelerometer. Spearman's rho correlation coefficients were estimated for criterion validity, test retest reliability and concurrent validity.

Results: 301 subjects participated in the study, 150 were males and 151 were females. Mean age was 44.5 years. There was weak to moderate correlation between IPAQ and accelerometer, $\rho=0.23$ for IPAQ short and $\rho=0.32$ for IPAQ long. There was moderate correlation for test retest reliability of IPAQ short and long, $\rho=0.56$ and 0.50 respectively. There was moderate correlation between IPAQ short and long administered together, $\rho=0.55$.

Conclusion: Long and short forms of International Physical Activity Questionnaire have acceptable validity and reliability and can be used to measure group level physical activity in urban adult Pakistani population.

Keywords: Validation, IPAQ, physical activity

11.47

LOW LEVELS OF PHYSICAL ACTIVITY AND HIGH LEVELS OF OBESITY IN URBAN, ADULT PAKISTANI POPULATION

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Objective: Low physical activity is responsible for 6% of global deaths and is estimated to be the cause of 30% of the ischemic heart disease (IHD), 27% of the diabetes and 21 % of the breast and colon cancer burden. We assessed physical activity levels in urban adult Pakistanis (n=301) using International Physical Activity Questionnaire (IPAQ).

Method: Participants were administered validated Urdu translation of short and long IPAQ by trained data collectors. Physical measurements were taken. Participants were classified into obese and non obese using the cutoffs recommended for south Asians. Participants were classified into low (physically inactive), moderate (minimum WHO recommended physical activity) and high physical activity category using the scoring algorithm for IPAQs. Data from the IPAQ long was used to assess the proportion of physical activity in occupational, transport, domestic and leisure domain.

Results: There were 150 males and 150 females. Mean age of the participant was 44.5 years. 209 participants (69.4%) were classified as obese. The prevalence of obesity was 63 % percent in males 76 % in females. 134 participants (44.5%) did not meet the minimum physical activity requirements for healthy life. The prevalence of physical activity was 57.6 % males and 31.3 % in females. 41.5 % of the physical activity took place in the household domain, 26.7 % in the work place domain, 19.1% in the transport domain and only 12.6% in the leisure domain.

Conclusion: Prevalence of two major risk factors for non communicable diseases, obesity and physical inactivity, was very high in urban adult Pakistanis.

Keywords: Physical Activity, obesity, prevalence

11.48

LEVEL OF AWARENESS; AMONGST HEALTH CARE WORKERS AND GENERAL PUBLIC REGARDING THEIR BLOOD GROUP IN CASE OF RESPONDING TO EMERGENCY SITUATION BE IT FOR THEIR FAMILY AND FRIEND OR ANY DISASTER SITUATION IN PAKISTAN

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Objective: To assess the level of Awareness; amongst health care workers and general public regarding their blood group in case of responding to emergency situation be it for their family and friend or any Disaster situation in Pakistan. **BACKGROUND:** Life in today's world is unpredictable, you never know when you, your beloved family member or citizen of your nation could come across any unfortunate life threatening condition, which could be because of Road Traffic Accident, Bomb Blasts or any Natural Calamity, like flood or earth quake. It's vitally important in this time of crisis that help should be provided to victims in shortest possible time. Encourage healthy

donors who have given blood when required by a family or community member to become unpaid donors and to communicate importance of blood donation as when a person donates blood, his/her bone marrow is stimulated to produce new red cells. This will make our blood forming organs to function more effective and active cells.

Method: The authors develop two level "A" & "B". Level "A" is for health care workers and level "B" is for general public. Prospectively both groups are evaluated with a simple questionnaire which includes the information amongst health care workers and general public regarding their blood group and blood donation. Total 50 no. of general public & 50 no. of health care workers are evaluated. In level "A" 26 were males & 24 were females. In level "B" 22 were males & 28 were females, 27 were below 40 years & 23 were above 40 years age. **Results:** for level "A" health care workers: awareness of blood group: 72% of them were aware about their blood group & 28% were not. 24% of staff presented reason "not needed ever to aware", while 4% of them not commented on reason. for level "B" general public: awareness of blood group: 62% of them were aware about their blood group & 38% were not. 28% of staff presented reason "not needed ever to aware", while 10% of them not commented on reason.

Conclusion: Our survey showed that majority of the health care workers have awareness of their blood group as compared to general public, as well as the ratio of blood donation was recorded high in health care workers as compared to general public.

Keywords: Bloodgroup, ER

11.50

COVERAGE ASSESSMENT OF MASS MEASLES VACCINE DRIVE-2011: A CROSS SECTIONAL SURVEY IN THE METROPOLITAN CITY OF PAKISTAN

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Objective: Measles vaccination has remarkably reduced mortality worldwide. Despite the free-of-cost availability of measles vaccine in EPI, we have not been able to slash the burden of measles because of low routine vaccination coverage in Pakistan. Supplementary immunization activities (SIAs) were initiated in 2007 to bridge this coverage gap. However, their quality and reach have been challenged given large number of cases reported from Karachi alone in 2010. Therefore, this study aimed to assess coverage of recent mass measles vaccination held at Karachi in February 2011.

Method: A cross sectional survey was carried out on a socio-demographically representative population of all 18 towns of Karachi 4 months after the February 2011 campaign. Parents of children <5 years were administered a structured questionnaire about knowledge and participation in recent mass measles vaccine drive.

Results: Of 1,020 eligible households, only 275 (27%) parents knew about measles SIA mainly from public announcements (42%) and visit of vaccinator at their house (38%). Of these, 186 (67%) children received measles vaccine whereas 87 (32%) parents refused measles vaccine. Overall, only 18% children received measles vaccine during the recent SIA. None of the selected clusters had >50% coverage, whereas, marked coverage

inequalities were observed between clusters ranging 10-27%.
Conclusion: Measles vaccine coverage in Karachi remains low and sporadic outbreaks of measles every two to three years are expected unless population coverage can be rapidly increased.

Keywords: Measles SIA, Measles survey, Mass Measles Vaccine Coverage

11.51 ROLE OF SCHOOL HEALTH NURSE IN PROMOTING IMMUNIZATION

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Objective: The review was to seek evidence of significant role of school health nurses in promotion of immunization of "vaccine-preventable diseases" in Pakistan. The results of the review were limited from Pakistani literature but world wide the role has been supported strongly.

Method: This paper describes findings from a systematic review of the literature on the significant role of school health nurses; for promotion of immunization in school children. The review was done of 12 articles from year 2000 to 2008. Databases examined for the review included MEDLINE, CINAHL, and Blackwell Synergy.

Results: Role of school health nurse is supported internationally especially promotion of immunization at school level, but there is limited literature available and nothing much done regarding strengthening the role of school health nurses in Pakistan
Conclusion: There is a significant role of school health nurse in promoting immunization and preventing disease at school, thus contribute in prevention of morbidity and mortality country wide. Recommendation: In Pakistan, through development of a focused health promotion and disease prevention plan, steps can be taken to promote role of school health nurses. The implications of this paper's findings should be considered for research based studies and policy making in Pakistan.

Keywords: Immunization, teaching

11.53 UNDERESTIMATION OF WEIGHT AND ITS ASSOCIATED FACTORS AMONG OVERWEIGHT AND OBESE ADULTS IN PAKISTAN: A CROSS SECTIONAL STUDY

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Objective: Weight loss is known to decrease the health risks associated with being overweight and obese. Awareness of overweight status is an important determinant of weight loss attempts and may have more of an impact on one's decision to lose weight than objective weight status. We therefore investigated the perception of weight among adults attending primary care clinics in Karachi, Pakistan, and compared it to their weight categories based on BMI (Body Mass Index), focusing on the underestimation of weight in overweight and obese individuals. We also explored the factors associated with underestimation of weight in these individuals.

Method: This was a cross sectional study conducted on 493 adults presenting to the three primary care clinics affiliated with a tertiary care hospital in Karachi, Pakistan. We conducted face to face interviews to gather data on a pre-coded questionnaire. The questionnaire included detail on demographics, presence of comorbid conditions, and questions regarding weight assessment. We measured height and weight of the participants and calculated the BMI. The BMI was categorized into normal weight, overweight and obese based on the revised definitions for Asian populations. Feelings about weight were determined by asking the study participants the following question: Do you consider yourself to be a) thin b) just right c) overweight d) obese. We compared the responses with the categorized BMI. To identify factors associated with underestimation of weight, we used simple and multiple logistic regression to calculate crude odds Ratios (OR) and adjusted Odds Ratios (AOR) with 95% Confidence Intervals.

Results: Overall 45.8% (n= 226) of the study participants were obese and 18% (n= 89) were overweight. There was poor agreement between self perception and actual BMI (Kappa= 0.24, SE= 0.027, p < 0.001). Among obese participants a large proportion (73%) did not perceive themselves as obese, although half (n=102) of them thought they may be overweight. Among the overweight participants, half (n=41) of them didn't recognize themselves as overweight. Factors associated with misperception of weight in overweight and obese participants were age > 40 years (AOR= 3.4; 95% CI: 1.8-6.4), male gender (AOR= 2.97; 95% CI: 1.6-5.5), being happy with ones' weight (AOR= 6.4; 95% CI: 3.4-12.1), and not knowing one's ideal weight (AOR 2.45, 95% CI: 1.10-5.47).

Conclusion: In this cross sectional survey, we observed marked discordance between the actual and perceived weight. Underestimation of individual weight was more common in older participants (> 40 years), men, participants happy with their weight and participants not aware of their ideal weight. Accurate perception of one's actual weight is critical for individuals to be receptive to public health messages about weight maintenance or weight loss goals. Therefore educating people about their correct weight, healthy weights and prevention of weight gain are important steps towards addressing the issue of obesity in Pakistan.

Keywords: Obesity, self perception

11.54 THE KNOWLEDGE, ATTITUDE AND PRACTICES OF EDUCATED FEMALE PILLION RIDERS OF LAHORE, PAKISTAN

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Objective: Introduction: Motorcycle helmets are effective in reducing head injury after a crash among both drivers and pillion riders. According to Pakistan Motor Vehicle Ordinance Law 1965, no person male or female shall drive or ride pillion seat without wearing a helmet, however this law is not followed by most pillion riders in Pakistan. This survey was conducted to find out the reasons for wearing and not wearing helmets among women pillion riders in urban population of Pakistan.
Method: Convenient sampling was done, 200 questionnaires were administered among female students, from two different universities of Lahore, Pakistan. It was a self-administered questionnaire and the students were approached in recreational

areas of the facility like cafeterias, sports complexes. The data was collected on knowledge of the law, reasons for not wearing a helmet.

Results: The results showed that only 4% of pillion riders wore helmets. About 11.5% of the females were not aware of helmet safety while 50% lacked knowledge about pillion passenger helmet law in Pakistan. Most of reasons for not wearing a helmet were; cultural restraints (34%), 34.5% thought they would be made fun of, while 31% found it non-feasible with a scarf/dupatta. Around 18% of the respondents thought of it as unfashionable and 16% thought that climate is too hot to wear a helmet.

Conclusion: Laws need to be implemented and reinforced to ensure safety of women pillion riders. Awareness and receptive environment is needed to ensure that these road-users observe safety measures.

Keywords: helmets, women, pillion riders

11.55 PERCEPTION OF PAKISTANI WOMEN PILLION RIDERS ABOUT HELMET USE – A QUALITATIVE STUDY

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Objective: Despite the importance of helmet in prevention of head injuries among motorcyclists, there is limited use of helmet both by riders and pillion passengers. The objective of the study is to explore the perception of women pillion riders regarding the motorcycle helmet use.

Method: Data was collected from five focus group discussions (FGDs) held with women pillion riders working at the Aga Khan University. The study participants were recruited voluntarily. Written informed consent was taken from each participant before beginning of each discussion.

Results: Some major themes emerged from the data analyses, which included (1) motorcycle is a risky transport yet economical mode of transportation; (2) all participants never wore a helmet and never thought about wearing it before; (3) none of the participants were aware about the helmet law for pillion rider but knew about the helmet law for the motorcycle driver; (4) the most important benefit of helmet use expressed was "safety" especially protection from head injury in case of an incident.

Conclusion: Publicizing and enforcement of the law should be the first step towards initiating helmet use among women pillion riders in Pakistan.

Keywords: Women, pillion rider, helmet perception

11.58 DIFFERENTIAL REPORTING OF PHYSICAL ACTIVITY BY GENDER COMPARED TO OBJECTIVELY MEASURED PHYSICAL ACTIVITY IN AN URBAN, ADULT COMMUNITY

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Objective: Physical activity has important benefits for health. Self reported physical activity questionnaires are an inexpensive

and widely used tool for measuring physical activity in epidemiological studies. Being a subjective tool, questionnaires have a considerable degree of measurement error associated with them. This study explores the differential reporting of Physical activity by gender.

Method: This study was conducted at one of the urban sites of Prospective Urban Rural Epidemiology (PURE), the Karachi Port Trust (KPT) staff colony. The participants were administered the IPAQ short and long questionnaires and given a GT3X accelerometer to wear for next seven days. Those who had at least three valid accelerometer wear days were include in the analysis. Bland Altman plots were used to assess the agreement between the physical activities measured using IPAQs and the accelerometers. Gender differences were explored for the objectively measured physical activity and self reported physical activity.

Results: Out of 261 eligible participants 139 were males. Mean age of the participants was 44.5 years (SD =7.6) Accelerometer measured moderate and vigorous physical activity (MVPA) minutes per week were much higher in males (Mean = 326) as compared to females (Mean =125). IPAQs grossly overestimated the MVPA minutes by 340 minutes/week in females and underestimated them by 262 minutes in males. One explanation for this might be that the difference between the accelerometer measured MVPA minutes and IPAQ measured MVPA minutes was positively correlated with the accelerometer measured MVPA minutes. Females who had low levels of physical activity over reported their physical activity in order to give a socially desirable response.

Conclusion: IPAQs overestimate MVPA minutes in females and underestimate it in males as compared to objectively measure PA in an urban, adult community.

Keywords: IPAQ, Gender, Physical Activity

11.59 HOMICIDE BOMBERS: LIFE AS A WEAPON

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Objective: In the last three decades, the media, the general public and the scientific community have used the words 'suicide bomber' to describe the deaths of those who kill others while at the same time dying themselves.

Method: Review of relevant literature

Results: The act of 'suicide' bombing is, in fact, not suicide, but the deliberate death of others, the death of the perpetrator being incidental to the act, rather than suicidal.

Conclusion: We believe that better words to describe such acts are 'homicide bombing/bombers.' By the use of 'homicide bomber,' a gradual change in the worldwide interpretation and acceptability of these acts may occur. We offer this conceptualisation for further discussion and debate.

Keywords: suicide, homicide, bombing

11.60 THE KNOWLEDGE, ATTITUDE AND PRACTICES OF EDUCATED FEMALE PILLION RIDERS OF LAHORE, PAKISTAN

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Objective: Motorcycle helmets are effective in reducing head injury after a crash among both drivers and pillion riders. According to Pakistan Motor Vehicle Ordinance Law 1965, no person male or female shall drive or ride pillion seat without wearing a helmet, however this law is not followed by most pillion riders in Pakistan. This survey was conducted to find out the reasons for wearing and not wearing helmets among women pillion riders in urban population of Pakistan.

Method: Convenient sampling was done, 200 questionnaires were administered among female students, from two different universities of Lahore, Pakistan. It was a self-administered questionnaire and the students were approached in recreational areas of the facility like cafeterias, sports complexes. The data was collected on knowledge of the law, reasons for not wearing a helmet.

Results: The results showed that only 4% of pillion riders wore helmets. About 11.5% of the females were not aware of helmet safety while 50% lacked knowledge about pillion passenger helmet law in Pakistan. Most of reasons for not wearing a helmet were; cultural restraints (34%), 34.5% thought they would be made fun of, while 31% found it non-feasible with a scarf/dupatta. Around 18% of the respondents thought of it as unfashionable and 16% thought that climate is too hot to wear a helmet.
Conclusion: Laws need to be implemented and reinforced to ensure safety of women pillion riders. Awareness and receptive environment is needed to ensure that these road-users observe safety measures.

Keywords: women, helmets, pillion riders

11.61 ROLE OF HOSPITAL PHARMACY IN MASSIVE FLOOD RELIEF OPERATIONS IN PAKISTAN

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Objective: Natural disasters like earthquakes and floods etc claim several lives and greatly affect infrastructure and economy. While many government organizations/NGOs carry out crisis management, pharmacists can also contribute to a great deal for ensuring that the disaster victims have timely accessibility to medicinal supply.

Method: When Pakistan history's worst flood struck in year 2010, the hospital responded to the emergency through implementation of disaster plan. This mainly involved the deployment of medical teams for responding to urgent medical needs of flood affectees and endemics like diarrhea and cholera. Pharmacy since inception had assumed a central role in developing standard medicine list for disaster management; in selection, procurement, storage and dispatching of medicines to the remote flood relief camp sites. Moreover inventory and

expiry management of drugs remotely and through periodic camp site visits was carried out. All the potential drug donations were routed through pharmacy to evaluate the quality/stability, need and possible consumption of donated drugs. Pharmacy also played important role in phase II of the flood relief operations i.e. nutritional state screening and replacement. In this regards iron/vitamin supplements and anthelmintic were supplied to all camp sites through close coordination with maternal and child health department of the hospital.

Results: Till date, hospital has provided healthcare to approx 567,350 flood affectees in 16 districts of four provinces of Pakistan. Pharmacy being the backbone of these massive relief efforts ensured the timely delivery of quality medicines to the disaster victims.

Conclusion: Till date, hospital has provided healthcare to approx 567,350 flood affectees in 16 districts of four provinces of Pakistan. Pharmacy being the backbone of these massive relief efforts ensured the timely delivery of quality medicines to the disaster victims.

Keywords: Pharmacy, flood relief, medicine supply

11.62 ASSESSMENT OF SOCIETAL HEALTH CARE ISSUES: A FACTUAL UNDERSTANDING TOWARDS IMPLICATION

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Objective: The factual findings indicate that resource allocation to communities (upper, middle, lower class people) depends on referential bond among the funding bodies to needy person. Inappropriate information create the hurdles for serving the nation in an efficient manner. The rational principal is to provide the cognitive support and construct the health care policies at micro level in developing countries. The core objective is to address polices and strategic action via rigorous assessment at macro level, which generate the positive results for building the life of nation on equalities bases.

Method: The study has been based on qualitative research required primary source of data collection. We used all three method of primary data collection that is questionnaire, interviews of the selected population and also discussion with the focus group. Analysing the data using SPSS and results were then interpreted in more technically.

Results: This study also proposed a model which is relevant to demographic trends in modern diversification of population by focusing norms, values and cultural bonds in Pakistan. The study restrain towards panoramic and meta-analysis of known and unknown variables which comprehensibly highlight the significance of socio-economic policies, by having intentions of government and non-government organization.

Conclusion: This study indicate the significance of public health care on equalities bases, in order to attain the objectives of socio-economic justice via distributing the funds to deserve people at right time. Statistical results provide the need assessment of people health in comparison with financial resources for imminent period.

Keywords: Socio-economic determinants, Health care issues, Policies.

12.1

OUTCOME OF RADIOLOGICAL GUIDED PERMCATH-AN INSTITUTIONAL REVIEW

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Objective: Arteriovenous fistula is the gold standard vascular access used to access the blood for hemodialysis treatment. Tunneled catheters are widely used as an alternate mean in patients requiring dialysis. These are routinely placed in patients awaiting fistula maturation or creation and in those who are not suitable for its creation. The study is performed to review the outcome of Permcath placed in Radiology Department of Aga Khan University Hospital.

Method: The outcomes were retrospectively analyzed of 75 hemodialysis catheters placed in 74 patients from June 2010 through May 2011. Insertion related complications, patency rate and freedom from infection were analyzed

Results: Seventy-five Permcaths were placed in 74 patients. Immediate technical success was 100% (75 of 75 catheters). The procedural complication rate was 6.6% (5 catheters). 11 patients were lost to follow up. 7 expired during the study period due to other co-morbid conditions. One developed septicemia secondary to Permcath infection and later expired. Of the remaining 56 patients, 33(62.5%) predominantly had uneventful course during the desired period. 2 developed infection however were treated with antibiotic and retained till their fistula started working. Infection occurred in 8 patients (14.2%) resulting in removal of catheters. 13 catheters (23.2%) failed due to mechanical problems, of these 10 had to be removed within 10 days. Amongst these in 3 patients the Internal jugular veins were blocked due to thrombosis.

Conclusion: Radiologically placed Permcath in our Institution shows comparable rates of success and complications and are a reasonable means of vascular access for dialysis patients.

Keywords: Arteriovenous fistula , Permcath, hemodialysis,

12.3

IS REFLEX REPORTING OF ESTIMATED GLOMERULAR FILTRATION RATE (EGFR) PREMATURE?

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Objective: To facilitate early detection of chronic kidney disease, many organizations now recommend reflex reporting of estimated glomerular filtration rate (eGFR) whenever serum creatinine (Cr) is measured. We compared two widespread eGFR equations with creatinine clearance (CrCl) calculated through a timed urine collection.

Method: Laboratory data of subjects' = 18 years tested for CrCl from October 2010 to December 2010 was retrieved from laboratory information system of Aga Khan University Hospital. Statistical comparison of eGFR using Cockcroft Gault (CG) and 4-variable Modification of Diet in Renal Disease (MDRD) formulae with CrCl was performed.

Results: Six hundred and seventy subjects with CrCl were studied. Mean age of the group was 51 ±15 years, 55.7 % being males. Mean glomerular filtration rate using CrCl, MDRD and

CG were 57.1 (±35.9), 57.8 (±33.6) and 68.7 (±41.5) ml/min respectively. Deming regression analysis generated MDRD = 5.23 + 0.92 (CrCl) and CG = 0.23 + 1.2 (CrCl) for comparison of CrCl results with those of MDRD and CG respectively. Comparing MDRD and CrCl, Bland Altman revealed acceptable agreement with a minimal bias of 0.65.

Conclusion: We suggest that reflex reporting of eGFR using MDRD can be implemented in clinical laboratories when serum Cr is reported

Keywords: eGFR, creatinine, Cockcroft Gault

12.4

OPTIMAL MANAGEMENT OF SOLITARY LOWER POLE RENAL CALCULI 15-20 MM

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Objective: Optimal management of lower calyceal stones continues to be a significant problem. Shockwave lithotripsy (SWL) is regarded as the first choice for stones < 15mm. Percutaneous surgery (PCNL) is considered for stones >20mm. 15-20 mm is still considered a grey zone. OBJECTIVE: To compare the stone clearance rate, efficiency quotient (EQ) and early complications of SWL and PCNL for solitary lower pole renal stones measuring 15-20 mm.

Method: This is a retrospective matched pair analysis of patients (78 in SWL and 64 in PCNL group). Preoperative imaging (CT KUB/IVU/X ray/ Ultrasound) were used to assess the largest dimension of stone. The stone free rates were assessed with plain x ray and ultrasound in follow up after 4 weeks. Data was analyzed on spss 16.

Results: The demographic profiles (Age, BMI , size of stone) were comparable. The mean stone size was 17.4 +/-2.12 in PCNL group vs 17.67 +/- 2.04 in SWL group (p = 0.45). At 4 weeks, 83 % of patients undergoing PCNL were stone free compared to 51% in SWL group (P <0.001). The EQ for PCNL was 76% as compare to 44% for SWL (p<0.001). 9% of patients in PCNL modality needed ancillary procedures in comparison to 15 % of ESWL patients. The PCNL complication rate was 8 % versus 15 % in SWL patients.

Conclusion: Stone clearance from lower pole solitary stone sized 15-20 mm in greatest diameter following shockwaves lithotripsy is poor. These calculi can be better managed with percutaneous surgery due to its high degree of efficacy and acceptably low morbidity.

Keywords: PCNL, ESWL, Lower pole stone

12.5

SONOGRAPHIC MEASUREMENT OF RENAL DIMENSIONS AND ITS ASSOCIATIONS IN ADULT POPULATION OF KARACHI

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Objective: This study aimed to determine renal biometric dimensions in adult healthy individuals in Karachi, Pakistan and

correlate these with sex, age, and anthropometric measurements. We also sought for possible associations with elevated blood pressures and decreased GFR.

Method: Ultrasound was conducted and blood samples taken from 251 healthy individuals from the community.

Results: Mean kidney lengths were 9.85 ± 0.82 cm (range 7.90 – 12.90 cm) on right side and 10.00 ± 0.93 cm (range 7.30-12.80 cm) on left side. The mean width was 4.60 ± 0.60 cm and cortical thickness 1.46 ± 0.20 cm making estimated average kidney size and volume to be 67.6 ± 18.3 cm³ and 35.4 ± 9.59 cm³. Males had larger kidney sizes and volumes than females; age however was only associated with a decrease in renal length after ages 70 and above. Renal length best correlated with total body area (correlation coefficient 0.573) and renal size (coefficient 0.556) with weight. Spot blood pressures taken showed that average kidney size and parenchymal thickness was greater with in individuals with pressures = 140 systolic and/or =90 diastolic as compared to normal individuals ($p = 0.043$). Kidney length, parenchymal thickness and renal volume; all were significantly decreased ($p < 0.001$) with renal size being 54.8 ± 14.6 cm³ in the 59 individuals with an eGFR of = 90.

Conclusion: This study tried to establish the normal values of renal dimensions in our adult population. Variations were observed with sex, height, weight, baseline blood pressure levels and creatinine clearance. Our study signifies the potential of ultrasound as a useful tool for diagnosis and follow-up of kidney-associated diseases.

Keywords: Ultrasound, Renal dimensions, epidemiology

12.6

FREQUENCY OF VITAMIN-D DEFICIENCY IN GENERAL ADULT POPULATION OF KARACHI, PAKISTAN

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Objective: It is well established that low levels of 25-hydroxy Vitamin D (<30ng/dl) are a common finding world over, affecting over a billion of the global population. Our main aim was to determine frequency of low levels of vitamin D in the general adult population of Karachi, Pakistan and to find out demographic and co-morbidity predictors of serum 25 hydroxy vitamin D levels.

Method: A cross-sectional population survey was conducted at two spaced out densely populated areas of the city. Serum levels of 25OH Vitamin D were measured and renal GFR was calculated by 4 variable MDRD formula.

Results: Our sample of 300 had a mean age of 48.1 ± 12.7 years. The mean level of serum vitamin D was 20.12 ± 9.9 ng/dl (5.23-56.32 ng/dL). A total of 253 (84.1%) respondents had low (<30ng/dL) levels of 25OH vitamin D. 86% of the total males and 82% of the females were found to have vitamin D levels less than the 30ng/dl cut off for vitamin D sufficiency. The mean PTH in those with vitamin D sufficiency was 42pg/ml compared with 47pg/ml in those with deficiency (p -value=0.1). The mean serum calcium level in the sample was 9.44 ± 0.42 mg/dl. Serum phosphate levels of lower than 2.5mg/dl were seen in 41(13.6%) respondents. A high spot blood pressure was seen in 50(16.6%) individuals, whereas 79(26.2%) had been diagnosed with hypertension. Low serum levels of vitamin D were not associated with hypertension (p -value=0.10) or with an elevated spot blood

pressure. Chronic kidney disease co-morbidity was reported by 2.3% of the sample however 45 (26%) out of 188 having vitamin D deficiency had GFRs corresponding to stage 2 and stage 3 CKD. There was no significant association between levels of vitamin D and eGFR (p -value=0.11). Amongst the factors significantly affecting serum vitamin D levels were the use of multivitamin supplements (p -value=0.025).

Conclusion: We observed a high proportion of the asymptomatic general population having low levels of vitamin D. The possible causes of low levels of serum 25OH vitamin D seem to be multiple and need to be investigated in further detail in order to address this public health concern.

Keywords: vitamin D, calcium homeostasis, epidemiology

12.7

RATIONALE USE OF UNENHANCED MULTI-DETECTOR CT (CT KUB)

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Objective: CT KUB is slowly replacing IVU as primary imaging modality in evaluation of suspected renal colic. It is not only ordered by Urology dept but also other specialties. With its countless advantages it also carries risk of high radiation dose so risks versus benefits should be taken in consideration before ordering CT Objective: To assess the yield of CT KUB across the specialties and need of developing an algorithm to order CT KUB.

Method: It was a retrospective analysis of 240 CT KUBs done as primary imaging modality to evaluate suspected renal colic. All patients who underwent CT KUB within the duration of 6 months study period (Jan 2009 to June 2009) were included in our study. Patients with any positive urological imaging in past 6 months or those who were diagnosed to have urolithiasis in last 6 months were excluded. CT referrals by outside physician were also excluded along with those who had missing data. *Results:* There were total of 529 CT KUBs ordered during the study period. Of which 240 met the inclusion criteria. The overall positive yield for urolithiasis was 62%, negative rate was 19% and rate of incidental findings was 19%. Urology dept has the highest positive yield of 67% followed by Emergency dept (ED); $p < 0.022$. Rate of incidental finding was highest in CT ordered by other specialties (42%). Patients with flank pain had more than 65% chance of having a positive CT scan for Urolithiasis and those with flank tenderness had more than 70% chance of having a positive CT for urolithiasis, in comparison to patients with normal examination (50%).

Conclusion: There is statistically significant difference of yield across specialties. Tool of good history taking and physical examination along with urinalysis has proved to be essential steps in algorithm of ordering CT KUB.

Keywords: Renal, CT KUB

12.8 MANAGEMENT OF SEPTIC SHOCK PATIENTS IN HOSPITAL

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Background Septic shock is the major reason of mortality in intensive care units. Researchers have highlighted that early warning signs for septic shock are not picked up in ICU by nurses and physicians. As a result, goal directed therapy is not found useful and patient results in death. There is a need for teaching how to identify early warning signs and respond accordingly as a rapid response team management.

Method: Search Strategy A comprehensive search was undertaken to identify septic shock and patients, causes and its treatment modalities. The literature search utilizes several digital data bases that include Sage, Pubmed and Mosby Nursing Consult. A total of 23 articles were used for critical analysis. All the articles discussed about the causes of septic shock and early goal directed therapy within six hours.

Conclusion: Conclusion In Pakistan, Dr Shah (2010) highlighted the need of prompt management for patients found in severe sepsis. Literature highlighted the need to train paramedics and doctors to identify early signs of severe sepsis and prevent patient to go to septic shock stage. It is recommend that mock drill strategies should be used to prepare staff to identify early warning signs. Moreover, there is a need to identify the factors that hinder the early management of severe sepsis patients.

Keywords: Septic shock, management, hospital

12.9 PERFORMANCE OF GFR ESTIMATION EQUATIONS IN A SOUTH ASIAN POPULATION

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Objective: Ethnic differences in the performance of glomerular filtration rate (GFR) estimation equations have been observed, perhaps in part from non GFR determinants of serum creatinine. However, the existing equations have not been evaluated in people of South Asian descent.

Method: We measured GFR (mGFR) using the gold standard of urinary clearance of inulin in 581 South Asian men and women in the communities of Karachi, Pakistan, including 40 patients from renal clinics. Standardized creatinine assay was used. The performance of the MDRD Study and CKD-EPI equations was assessed as bias (median difference between measured and estimated GFR), precision (interquartile range of the differences, IQR), accuracy (percent of estimated GFR values that are within 30% of measured values, P30), and the root mean square error (RSME) on the log scale. 95% CI were computed via the bootstrap method using 1000 replications. **Results:** The mean (SD) age of subjects was 51 (10) years. The mean (SD) mGFR was 90 (33) ml/min/1.73 m². The

performance of the equations is presented in table

Metrics (95% CI)	CKD-EPI Equation	MDRD Study Equation
Bias, ml/min/1.73 m ²	-6.8 (-9.4, -6.0)	-8.5 (-9.8, -6.5)
IQR, ml/min/1.73 m ²	22.9 (20.3, 25.5)	28.7 (26.2, 32.1)
P30 %	76.1 (72.2, 79.0)	68.0 (63.6, 71.5)
RMSE	0.265 (0.240, 0.291)	0.295 (0.268, 0.322)

Conclusion: The CKD-EPI has significantly greater accuracy (P30) and precision (IQR) than the MDRD Study equation in this largely unselected South Asian population in Karachi. The overall fit of the equations is similar to reports in the US and European populations, however both equations over-estimate measured GFR at the high levels observed in this Pakistani population. The difference in bias between the Pakistani and US and European populations may be secondary to differences in GFR measurement methods, calibration of the creatinine assay, or non GFR determinants of serum creatinine. Possibly GFR estimation may be improved by modification of existing equations, development of new equations, or use of other endogenous filtration markers.

Keywords: GFR, ethnicity, clinical epidemiology

12.10 LEVEL AND DETERMINANTS OF KIDNEY FUNCTION IN A SOUTH ASIAN POPULATION IN PAKISTAN

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Objective: People of South Asian origin are at high risk of chronic kidney disease. Some have suggested that the usual level of glomerular filtration rate (GFR) in South Asians may be lower than in populations of European origin. However, measured GFR in a general adult population of South Asian origin has not been studied.

Method: Cross-sectional observational study. 530 patients 40 years or older randomly selected from communities in Karachi, Pakistan, using multistage cluster sampling. Patients with both diabetes and hypertension were excluded.

Results: Mean age of participants was 49.7 ± 9.5 (standard deviation [SD]) years, 51% were men, 34.9% had hypertension, and 30.5% had diabetes. Mean measured GFR was 94.1 ± 28.6 mL/min/1.73 m². GFR was lower by 0.79 ± 0.11 mL/min/1.73 m² for each 1-year older age. The 5-year age- and sex-specific mean GFR of the study population generally was within 1 SD of the mean of previously reported values for US adults. Factors independently associated with GFR were younger age (β coefficient, -3.84 [95% CI, - 5.46 to - 2.21] mL/min/1.73 m² per 5 years older), higher serum albumin level (4.58 [95% CI, 0.74-8.42] mL/min/1.73 m² per 0.5-g/dL increase), higher fasting plasma glucose level (0.81 [95% CI, 0.44-1.18] mL/min/1.73 m² per 10-mg/dL increase), high versus low meat intake (7.81 [95% CI, 1.14-14.48] mL/min/1.73 m² for ≥ 11 vs ≤ 5 servings/wk), and higher estimated protein intake (1.46 [95% CI, 0.41-2.51] mL/min/1.73 m² per 1.0-g/d increase) from urine urea nitrogen.

Conclusion: Mean measured GFR in South Asian adults from the general population in Karachi, Pakistan, is only modestly lower than in European-origin counterparts, with similar age association. This may reflect lower dietary protein intake in South Asians.

Keywords: Kidney function, South Asian

12.11 PREDICTING SUCCESS OF PERCUTANEOUS NEPHROLITHOTOMY: APPLICATION OF A NEPHROLITHOMETERY SCORING SYSTEM IN A STONE PREVALENT POPULATION

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Objective: Predicting the outcome of percutaneous nephrolithotomy (PCNL) is difficult. Currently used parameters like stone volume, stone site are often insufficient in predicting stone clearance. The need for such tool is particularly important in a stone prevalent population. Recently a nephrolithometry scoring system is reported, which has been validated to predict the outcome following PCNL, based upon CT determined preoperative variables. The nephrolithometry score is determined using stone volume, stone density, skin to stone distance, presence of hydronephrosis and involvement of calyces. The objectives of the current work is to determine the applicability of the nephrolithometry in a cohort of patients undergoing PCNL.

Method: This is a retrospective matched pair analysis from a prospectively maintained data base of patients under going PCNL. Post PCNL patients with residual stones, requiring ancillary procedure like shock wave lithotripsy (SWL) were identified. These patients were compared with randomly selected similar number of stone free patients, and the scoring system was applied for both the groups. The higher the score more is the probability to have residual stones. The mean score was compared in both the groups.

Results: Twenty two patients had residual stones, who were compared with similar no of stone free patients. The mean age of the patients was 38.5 years, with mostly male patients (61%). The mean BMI was 25.56 +/- 5.1. The combined mean nephrolithometry score was 7.64 +/- 2.08 (4-12). When the mean score of the two groups were compared, we found that the mean score was less in stone free group (7.36) than in other group (7.91), with statistical significance (p 0.00).

Conclusion: The nephrolithometry scoring system can be applied in our population; however its further validation should be done using a prospective model, with a larger sample size, looking at its predictive values

Keywords: Percutaneous nephrolithotomy

12.12 EARLY TRIAL OFF CATHETER FOLLOWING TURP. IS IT SAFE?

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Objective: Benign prostatic enlargement (BPE) is a common condition in aging males, requiring surgical intervention in complicated cases. TURP is the gold standard, requiring indwelling catheterization in post operative period. This study aims to compare the incidence of complications i.e. hematuria

& failed trial off catheter, and length of hospital stay between early and late removal of catheter after TURP.

Method: This randomized study was conducted after ethical review committee approval from January to June 2011 on patients undergoing transurethral resection of prostate. Hundred patients were randomized preoperatively by lottery method into two groups. Group-I included patients whose catheter removed on 2nd post op day (<48 hours) and group-II included those patients whose catheter removed on 3rd post operative day (standard). Patients were observed for hematuria and urinary retention postoperatively. Multivariable analysis with Cox regression was applied to calculate Relative Risk adjusted for confounders.

Results: Basic demographics, preoperative and operative characteristics were comparable in both groups. Overall incidence of complications in Group-I was similar to group-II (4% in each group, p-value: 1). Duration of catheter placement and hospital stay was significantly lower in early removal group (p-values=0.000). On multivariable regression, the relative risk of developing complications in group-I was equal to group-II with RR of 1 (95%CI:0.5-1.9) adjusted for comorbid.

Conclusion: Removal of catheter on 2nd post operative day after transurethral resection of prostate seems to be feasible and safe without increasing significant morbidity.

Keywords: Transurethral resection of prostate, trial without catheter, BPE

12.13 PAPILLARY CELL CARCINOMA IN POST TRANSPLANT DIALYSIS DEPENDENT PATIENT. PRESENTING AS SPONTANEOUSLY RUPTURED RENAL TUMOR

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Objective: RCC in dialysis dependant CKD is about 100 times more than the general population. Histopathological type and features are distinct with a clear relation to the duration in which patient remained HD dependent. Clear cell Ca being the most common in general population as well as in patients with ESRD, papillary cell carcinoma represents a small fraction and has not been reported in literature yet to present as hemorrhage.

Method: Case report

Results: He underwent Laparotomy, found to have huge retroperitoneal hematoma extending on Right side. Approximately 2 litres clot evacuated. Graft Kidney was small, shrunken with a pelvic stone in it while left kidney had lower pole mass. Bilateral native and graft nephrectomy done. Patient had uneventful post operative course. Patient was discharged home on 6th post operative day with advice on alternate day HD. His histopathology came out to be papillary renal cell carcinoma in right kidney, foci of similar tumor seen in left kidney as well. Extensive infarct in left kidney was seen. Graft kidney and ureteric margins of both kidneys were tumor free. Since the disease was organ confined so no further treatment was given to the patient.

Conclusion: Patients with ESRD on HD have 100 times greater risk of RCC than age-matched healthy controls. RCC arising in native kidneys of ESRD patients seems to exhibit many favourable clinical, pathologic, and outcome features compared with those diagnosed in patients from the general population. There should be high index of suspicion to diagnose these tumors and more specifically identifying these tumors as cause of hemorrhage

Keywords: ESRD, papillary cell Ca, spontaneously ruptured renal tumor

13.1 TOLUIDINE BLUE; ITS ABILITY TO DETECT TUMOR INVOLVED MARGINS AFTER EXCISION OF ORAL CAVITY SQUAMOUS CELL CARCINOMAS

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Objective: Oral cancer is an important health issue. The best chance of surgical cure in oral cancer is complete removal of all malignant cells. In order to identify the microscopic extent of tumor invasion, surgeons use intra-operative frozen section to get tumor free margins. Unfortunately this facility is not readily available at all tertiary care centers. Intra-operatively other method to identify tumor free margins is Toluidine blue application over resected area of oral squamous cell cancer
Method: 56 patients + 2(pilot study) ; at Aga Khan University hospital, Karachi, with biopsy proven squamous cell carcinoma of oral cavity regardless of grade and stage of tumor were included in the study. Intra-operatively toluidine blue was used on the resected tumor margins and staining patterns were assessed. Staining results were compared with the final histopathology report (gold standard)

Results: There were 42 males and 14 females in. Average age was 50.07 yrs 11 margins were positive for toluidine blue staining out of which 8 margins were false positives. Sensitivity and specificity was found to be 100% and 84.9% respectively with diagnostic accuracy of (85.17%.

Conclusion: In our opinion, toluidine blue stain could be a useful tool for identifying tumor free margins intra-operatively. It is easy to perform and interpret while being safe and cost effective at the same time.

Keywords: Tomour, toluidine

13.2 DETERMINATION OF BEST ELECTRODE PLACEMENT FOR THE RECORDING OF PHRENIC NERVE COMPOUND MUSCLE ACTION POTENTIALS (CMAP)

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Objective: Phrenic nerve dysfunction is seen in various neuromuscular disorders and traumatic injuries. Phrenic nerve stimulation is subject to technical difficulties due to co-stimulation of Brachial Plexus (BP) and poorly modulated reproducible CMAP (compound muscle action potential) amplitudes. Several electrode positions are in use to record the phrenic nerve CMAP amplitudes. It has been noted that CMAP amplitude varies with different electrodes positions. **Objective:** The aim of the study was to determine best electrode placement for recording of phrenic nerve compound muscle action potential (CMAP).
Method: : Ten healthy males of age 18 years and above, with a normal neurological examination were prospectively enrolled. Phrenic nerve was stimulated at the posterior border of SCM muscle and reference and active electrodes placed accordingly: Technique 1: G1 (recording) 5 cm superior to the tip of the xiphoid process (XP), and G2 (reference) 16 cm along the costal margin from G1. Technique 2: Active surface recording electrode

(G1) over xiphoid process and reference electrode (G2) over the 8th intercostal space at the costochondral junction. Technique 3: G1 at the eighth intercostals space reference along the anterior axillary line, and G2 3-5 cm medially and inferior to G1. The nerve conduction studies were done according to standard protocol of neurophysiology lab. Any CMAP amplitude associated with clinical twitch of the arm (co-stimulation of Brachial Plexus) was rejected.

Results: Mean age of subjects was 27 years. Mean CMAP amplitude with Technique 1 was $710 \mu V \pm SD0170\mu V$ ($500\mu V-1000\mu V$) on right side and $730 \mu V \pm SD200\mu V$ ($400\mu V-1000\mu V$) on left side. With technique two mean amplitude was $550 \mu V \pm SD150\mu V$ ($400\mu V-800\mu V$) on right and $550\mu V \pm SD160\mu V$ (range $300\mu V-900\mu V$) on left side. The amplitude with technique 3 was $840 \mu V \pm SD270\mu V$ ($500\mu V-1300\mu V$) on right side and $940 \mu V \pm SD240\mu V$ ($500\mu V-1400\mu V$) on left side. Mean latency of right phrenic nerve was 5.76msec, 5.79msec and 6.28msec with technique 1, 2 and 3 respectively. The Mean latency of left phrenic nerve was 5.56msec, 5.58msec and 5.82msec with technique 1, 2 and 3 respectively.

Conclusion: Techniques 3 is better than technique 1 and 2 to record CMAP amplitudes of phrenic nerves.

Keywords: Phrenic nerve, Nerve conduction studies, CMAP amplitudes

13.4 MANAGEMENT OF ISOLATED SPLENIC ABSCESS IN CHILDREN, ROLE OF SPLEEN PRESERVATION

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Objective: Splenic abscess is rare clinical entity. It is life threatening if remained untreated. Diagnosis is difficult for its non-specified clinical presentation. It is generally diagnosed during postmortem examination. It has a high mortality rate even in antibiotic era. Its timely diagnosis and appropriate management can decrease the mortality rate from 100% to 10%. **Objectives:** To determine the role of spleen preservation in management of isolated splenic abscess, and to compare different treatment modalities in the management of isolated splenic abscess.
Method: A retrospective study of 20 Years from (Jan 1990 – December 2010) conducted .We have included all children presenting with the principal diagnosis of “Splenic abscess” of age < 14 years. We have excluded all splenic abscesses occurring after penetrating abdominal injury.

Results: Most of our patients were older than 10 year of age. Majority of patients there is a significantly delayed presentation. Fever, abdominal pain and vomiting were the main mode of presentation. Splenomegaly in abdominal examination was present in 12 patients. Delay in diagnosis of splenic abscess in children can lead to life threatening condition. Intravenous antibiotics and percutaneous drainage is safe management
Conclusion: A high index of suspicion is needed to reduce delay in diagnosis. Early percutaneous drainage can preserve spleen to continue immune function.

Keywords: Splenic Abscess, early percutaneous drainage, enteric Fever

13.5 LOGBOOK: EFFECTIVENESS OF EPITOMISE FRAMEWORK IN THE LEARNING PROCESS

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Background: The new logbooks piloted in 2010 have been specially designed adapting the EPITOMISE framework to help maintain a record of problems seen by the students during the clerkship; identify gaps in learning opportunities and facilitate planning of corrective measures to fulfill the learning needs identified by the students relating to the clinical presentations in the curriculum. **Objectives:** To review the effectiveness of the new logbooks in helping the students achieve the desired learning outcomes during their Third (3rd) Year Surgery Clerkship in the MBBS Program at the Aga Khan University (AKU). **Method:** By the end of 6 rotations, a total of 45 logbooks were reviewed. The purpose of this review was to compare with the list of common clinical presentations and their objectives in order to evaluate if, according to the students' documentation, the learning objectives and the number of clinical presentations to be seen were being met across the EPITOMISE framework. Quantitative analysis of data was done using SPSS 17, to identify the total number and types of clinical presentations seen by every student during the four weeks of the rotation. **Results:** Adaptation of the EPITOMISE framework provided a standardized format for documentation of clinical presentations and procedure/ intervention observed or performed facilitating monitoring of student's performance through the clerkships. Analysis of the completed summary sheets highlighted the "essential" but "rarely" seen clinical presentations in each of the clerkships, serving as a valuable feedback for the curriculum planners for incorporating additional learning experiences in the core curriculum. **Conclusion:** Every completed entry in the Logbook through the "EPITOMISE" framework illustrates the degree of involvement of a student in a specific clinical encounter, identifies gaps in students clinical experience and facilitates monitoring of the learning during the clerkships.

Keywords: Logbook, EPITOMISE, Monitoring

13.7 PILOT TESTING OF A LOCALLY DEVELOPED TRAUMA REGISTRY LESSONS LEARNT IN A LOW-INCOME COUNTRY

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Introduction: Trauma registries play an important role in the assessment of trauma care, however they are still uncommon in developing countries. We present the pilot testing of a locally developed electronic "Karachi Trauma Registry" (KTR) conducted in a tertiary care hospital of Pakistan to describe its

functionality, process of implementation and results of data analysis.

Method: KTR was pilot tested from November 2010 to January 2011. All patients who presented through the emergency department with a diagnosis of injury as defined in ICD-9 CM were included with the exception of isolated hip fracture and dead on arrival. Basic demographics, injury details, event detail, injury severity and outcome were recorded. Data was entered in the electronic form of registry and standard reports were generated.

Results: Total 542 patients' were included. Their mean age was 27 years and 72.5 % were males. 87% of patients had sustained blunt injury while 13% had penetrating injuries. Falls and motor vehicle crashes were the most common mechanism of injury. Head, face and upper extremities were the most frequently injured anatomical regions. Mean injury severity score was 4.99. There were 8 deaths during the study period. The most common missing variables were ethnicity, injury modifiers and mode of arrival. Average time taken to review each chart was 14.5 minutes and 15 minutes for data entry. The registry was able to generate quality indicators such as length of stay in ED, injury to hospital arrival delay, injury severity and survival probability. **Conclusion:** KTR was successfully used for assessment of injury severity and survival probability of trauma patients.

Keywords: Trauma registry, pilot testing, low income countries

13.8 AN ASSESSMENT OF CAREGIVER KNOWLEDGE AND PRACTICES AFTER ONE YEAR ECD PARENTING PROGRAMME IN TANDOJAM, SINDH

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Introduction: Early childhood period is crucial period for learning and brain development. Factors that play important role in this period are nutrition, stimulation and parenting practices. The role of parents and their knowledge and practices related to child development in this critical period is well documented. Human Development Programme (HDP) through a home based parenting programme aims to enhance mother's knowledge and practices related to child development. The propose of this study was to evaluate the knowledge and practices of mothers after receiving one year of intervention related to early childhood development.

Method: A cohort of 239 mothers of children less than three years old were interviewed during baseline survey from April to June 2005 to assess their knowledge and practices regarding ECD. Parenting programme involved home visitation and education on health, hygiene, nutrition, safety, sensory stimulation and child development by trained Early Child Development Workers (ECDWs). A post intervention survey on knowledge and practice was conducted one year later.

Results: Univariate analysis showed significant change in practices on exclusive breast feeding (p-value < 0.001), swaddling the child (p-value < 0.001) and application of surma in eyes (p-value < 0.001). Purified drinking water, age appropriate

immunization, have immunization card and child birth registration practices were also proportionally high as compared to baseline however the change was not significant. Analysis also indicates that there is no gap between knowledge and practices related to these factors: massaging (p-value < 0.001), application of surma (p-value < .000) swaddling (p-value < .000), head contouring (p-value < .016) and child immunization. (P-value < .000). *Conclusion:* Conclusion: Enhancing mother knowledge and empowering women can lead change in practices and improving thereby early child development.

Keywords: Parenting programe, child development, Pakistan

13.9 TRENDS AND DISEASE PATTERNS IN PATIENTS ADMITTED IN CLINICAL DECISION UNIT AT A TERTIARY CARE HOSPITAL

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Objective: Clinical decision unit (CDU) is recognized globally as a unit within Emergency Department(ED) that provides diagnostic and treatment options to the patients with observation in an efficient, safe and comfortable environment. The development of CDU helps emergency physicians to deals with dilemma of either admit or discharge, as now they have third option of observing patients for 24 hours in designated area in ED. We observed the trend and disease pattern with which the patient is admitted in CDU between January to December, 2010 *Method:* Adapting a cross sectional study design we collected data of 1518 patients who were admitted at CDU of Department of Emergency Medicine, Aga Khan University Hospital. The data collection tool elicited information on demographic factors, date of admission, presenting complaint at triage, diagnosis at CDU admission, final disposition from ED and bounce back of patients. Final disposition were also be noted. Data was entered and analyzed using Microsoft Excel Office Version 2007. Percentage and proportions will be calculated.

Results: Data of 1515 patients was analyzed. Age ranged from new born to 93 years old. Male encompassed 824(54%) of the sample. Maximum admissions (12%) in the year were in July and August. Most, 904(60%) had presented to the triage counter as P3 category. Acute gastroenteritis was the most common protocol used. Majority 1311(87%) were sent home from CDU. *Conclusion:* Department of Emergency Medicine, Aga Khan Hospital had a productive initial year after the launch of CDU. It reminded as busy as the remaining sections of the emergency and acute gastroenteritis was the most common of the already established protocols in use, but data shows that other protocols should also be developed to address our local needs.

Keywords: CDU, Emergency, protocols

13.11 DAMAGE CONTROL SURGERY: USE AND APPLICATION IN THE DEVELOPING COUNTRY

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Objective: Damage control surgery (DCS) is an established option for managing severely injured trauma patients. However, its role in the management of similar patients in the developing world is debatable. The purpose of this study is to describe characteristics and outcomes of patients undergoing DCS.

Method: All trauma patients requiring laparotomies from 1996-2011 were reviewed. DCS was defined in a patient who underwent a laparotomy where the fascia was primarily left open. Information was collected by reviewing the medical records. The primary outcome was hospital survival. Descriptive analyses were performed. Associations were sought using the Fischer's exact test.

Results: Of 258 patients, 51 patients underwent DCS. Mean age was 33 years and 91% patients were male. 40% patients were transferred from other hospitals. The time between injury and operation was 152 minutes (IQR: 90-330). In terms of injury characteristics on arrival to ED: 68% had a penetrating injury, 83% had tachycardia, 32% were hypotensive and 70% had a GCS score of 13-15. Intra-operative laboratory parameters revealed a pH of 7.16 (IQR: 7.10-7.27), median temperature of 34.7 (IQR: 34.0-35.4) and median PT of 15.9 (IQR: 12.4-21.2). 55% patients survived to discharge from hospital. Of those who died, 86% died in the ICU before the first take back operation. *Conclusion:* Damage control surgery is feasible in developing countries, with more than 50% survival reported at one hospital. Delays in definitive care is an additional indication for DCS. Use of DCS in lesser developed countries is recommended if resources are available.

Keywords: Damage control surgery, trauma patients

13.12 IMPROVING HEALTH SERVICES THROUGH TELEHEALTH IN GILGIT BALTISTAN

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Introduction: Gilgit Baltistan region in northern Pakistan faces greatest barriers due to long distances and tough geographical conditions, resulting in limited access to specialized and quality health services. To overcome these problems telehealth solutions were introduced to support diagnosis, enhance capacity and manage information in Gilgit Baltistan.

Objective: The main objective of the study was to develop a Telehealth link between different levels of health centers for patient management, triage and referral of patients; to test the feasibility of this solution; and evaluate the experience of health providers, patients and other stake-holders with eHealth.

Method: This study involved a mixed method design involving both quantitative and qualitative (focus groups discussion and interviews) techniques. The project utilized iPath for store and forward teleconsultation through mobile connectivity (GPRS/EDGE) for most peripheral health facilities; whereas higher bandwidth, i.e. DSL was used to connect secondary care center with tertiary centers, conducting live consultation via OOVVO.

Results: In nearly eighteen months of duration 309 cases were reported on iPath. The male/female ratio was 1:3, seeking advice on 45 different types of ailments. Nearly 70% of these cases were reported within 24hrs, while 100% of the cases were reported within 72 hours. Study also showed that nearly 68% of patient avoided traveling through this system, 70% of these saved 4 days of travel. The cost saving of per patient was calculated at approximately Rs1000-Rs5000 (USD 12- 55) and average teleconsultation cost saved was 1.7 USD. Twenty Five live consultations were carried out between secondary care center in the areas of psychiatry, surgery, pediatrics and maternal care.

Conclusion: The pilot study has not only proved that using low cost technologies can provide access to specialized care to the community but also has helped built the capacity of healthcare providers at the remote sites.

Keywords: telehealth, ICT, teleconsultation

13.13

STR BASED MONITORING OF DONOR CHIMERISM IN BONE MARROW TRANSPLANT PATIENTS

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Introduction: Short tandem repeat (STR) markers are used for monitoring engraftment of donor cells after stem cell transplant. Following transplant, analysis of STR pattern of the recipient show three different states: full chimerism, in which only the donor allele detected in recipient; mixed chimerism, in which mixture of donor and recipient alleles are detected and graft failure, in which only recipient alleles are detected.

Objective: To assess usefulness of a multiplex STR based amplification assay combined with capillary electrophoresis for monitoring of bone marrow chimerism.

Method: Genomic DNA was extracted and diluted to optimal a working concentration which was amplified using Human STR kit. Following PCR amplification, amplicons of 12 STRS (THO1, D18S51, AMEL, D13S317, D7S820, D16S539, PENTA E, D3S1358, D8S1179, TPOX, CSFIPO and PENTA D) were separated on CEQ 8000 genetic analysis system. The Amelogenin locus was used to discriminate X and Y chromosomes.

Results: Results The ratio of donor to recipient cells was determined by calculating the proportion of the peak area of informative donor and recipient alleles. Out of 47 patients tested three showed graft rejection, whereas two samples revealed mixed chimerism (34%). Full chimerism was observed in 38

samples; furthermore in four samples 80-90% donor chimerism was noted.

Conclusion: Conclusion STR based typing is sensitive and convenient method for bone marrow engraftment monitoring. The engraftment must be monitored especially in first 90 days after transplant.

Keywords: STR, Chimerism, monitoring

13.14

ASSESSMENT OF ERRORS IN PLACEMENT OF RADIOLOGICAL MARKERS ON X RAY FILMS

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Objective: To assess the rate of errors in placement of radiological markers on X ray films.

Method: We performed a retrospective analysis at Radiology Department of Aga Khan University to determine the current practice of placement of radiological markers on X ray films and to assess the errors in marker placement and identify factors which may lead to wrong marker placement.

Results: X ray examinations of 100 patients (age range 8 months to 71 years) were examined for marker placement, which were performed at the radiology department from 12 May 2010 to 15 July 2010. The films were assessed for marker presence or absence and position of marker. Data was recorded on performa and analyzed on SPSS. In this study we identified the numbers of labeling errors in 100 consecutive plain radiographs. Our error rates of 1.0% are comparable to international literature.

Conclusion: Our results indicate that although markers were placed on 99% films correctly but significant number of markers were out of collimation which requires to be minimized.

Keywords: Radiography, x ray film, markers

13.15

FILM REJECT ANALYSIS PRE AND POST COMPUTED RADIOGRAPHY & PACS

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Objective: To assess the film rejection / retake rate before and after installation of CR and PACS

Method: We performed a retrospective analysis at radiology department of Aga Khan University to determine the pre & post PACS Film – Rejection / Retake rate. Data was reviewed from 2000 to 1st quarter 2008. Entered on performa and analyzed on SPSS.

Results: Internationally the acceptable rejection rate quoted is 10% or less, where as initially the calculated rejection rate at our department was 12%, which was brought down to 5 – 7% after the careful study and implementation of several measures, staff education and training and improved practices, which thus

resulted in facilitating with health care professionals the development and maintenance of an optimum level of practice in radiology services in the department. After incorporation of CR, which is the first step towards ultimate aim of PACS, the film rejection rate has further brought down to (2–3) %. *Conclusion:* Our results indicate that installation of CR and PACS resulted in significantly reduced film rejection resulting in reduced film loss for the department and increased radiation protection for patients

Keywords: x-ray Film , Rejection Rate, Computed Radiography

13.16

CALPAIN 10 STRUCTURE-FUNCTION DYNAMICS: NAVIGATION THROUGH BIOINFORMATICS TOOLS

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Objective: Calpain 10, a member of cysteine protease family, is present in eight different isoforms (a-h) and plays a vital role in insulin secretion, action and susceptibility to type 2 diabetes. The exact mechanism through which it influences the insulin secretion and action is not known yet. To envisage its mechanism of action and possible involvement in diseases, a general bioinformatics approach was taken into consideration. *Method:* NCBI Blast was used for nucleotide and protein alignments of the calpain10 isoforms (a, c and g) with the humans, rat and mouse. Conserved domains were also searched using NCBI conserved domain tool and Conserved Domain Architectural Tools (CDART) for other species. *Results:* There was 100% identity among isoforms of homo sapiens calpain 10 c & g with calpain 10 a. Results of blast query coverage showed 82% identity of cal c and 17% of cal10g with calpain 10 a (e-value=0). Conserved domain analyses with peptide sequences indicated that domains IIa and IIb have significant homology with the catalytic domain of the cysteine protease super family in all three isoforms (e=1.30e-77, 1.00e-20). The domain III and IV of isoform a and domain III of isoform c were found to homologous (Avg. e=1.94e-37) with calpain 3.

Conclusion: It is predicted from above study that calpain 10 a and c isoforms may have a role in developing limb-girdle muscular dystrophy and cataract like calpain 3 because of their domain III and IV similarity. Whereas isoform g, the shortest protein, is predicted to exhibit protease activity like other isoforms having papain-like domain only.

Keywords: Calpain 10 isoforms, homology analysis, structure-function

13.17

CORNEAL SWAPPING IN A BOMB BLAST VICTIM

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Objective: Standard penetrating keratoplasty (PKP) involves replacement of a scarred, diseased or damaged cornea with clear donor corneal tissue. The purpose of this report is to document a corneal autograft where a completely opaque cornea of patient was swapped with the clear cornea from the opposite eye. The patient was a 40-year-old-man who presented to our clinic with bilateral blindness as a consequence of bomb blast injuries. *Method:* He had a completely opaque cornea, partially damaged posterior segment and perception of light in the right eye, while a clear cornea, totally damaged posterior segment and no light perception in the fellow eye.

Results: His corneas were successfully swapped which gave him navigational vision.

Conclusion: Corneal autografts can be an option in injuries/situations where cornea in one eye is opaque with intact posterior segment while the cornea in the fellow eye is clear with severely damaged posterior segment.

Keywords: PKP, cornea, autograft

13.18

CATARACT SURGERY AND YAG CAPSULOTOMY IN KIDS UNDER TOPICAL ANESTHESIA ALONE

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Objective: To describe cataract surgery and YAG capsulotomy in kids done under topical anesthesia alone that, to the best of our knowledge, are the first reported cases of its kind. *Method:* A boy, 10, with bilateral PSC was scheduled for surgery under GA. However, on the day of surgery the surgeon found the child was co-operative enough to undergo surgery under topical anesthesia alone. The parents were adequately counseled, and surgery performed under topical anesthesia alone-- it lasted 3 minutes during which the child remained emotionally stable and cooperated well.

Results: The other eye was also operated in a similar manner a week later and its VA also became 20/30. During the same time period, a 3-and-a-half-year old girl with bilateral PCO successfully underwent Yag capsulotomy under topical anesthesia alone. *Conclusion:* Our case reports open a new avenue to explore in the quest for making these procedures even safer.

Keywords: Topical anesthesia , children, Yag

13.19**EFFICACY OF THE INTRACAPSULAR TENSION RING IN PROVIDING CAPSULAR SUPPORT DURING AND/OR AFTER CATARACT EXTRACTION.**

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Objective: To assess the efficacy of the intracapsular tension in providing capsular support during and/or after cataract extraction in cases of a weak or compromised ciliary zonule
Method: This was a retrospective case series. All individuals implanted with intracapsular tension ring were included. Data were extracted from medical records by one of us. Clinical information obtained included age, sex, pre and post-op visual acuity. Data were analyzed using the SPSS for Windows statistical package (SPSS Inc., Chicago, IL)

Results: A total of 24 CTRs were implanted in 24 eyes between Aug 2009 and June 2011. Males comprised 58.3 % of the study participants. The mean (\pm SD) of the subjects was 23.21 (14.83) years whereas the median age was 18.5 (range: 7 to 61). The preoperative ocular indication for CTR use were mainly pseudoexfoliation syndrome, trauma and Marfan's syndrome
Conclusion: The data are being analyzed and will assist in determining efficacy of intracapsular tension rings in providing implantation in our setting.

Keywords: Intracapsular tension ring, efficacy, cataract surgery

13.20**FFA-RELATED ADVERSE EVENTS IN TERTIARY CARE HOSPITAL IN KARACHI, PAKISTAN**

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Department of Surgery, Aga Khan University, Karachi*

Objective: To examine the risk of adverse events patients undergoing fundus fluorescein angiography (FFA)
Method: This was a prospective study. All individuals scheduled to undergo FFA from February 22, 2010 to March 20, 2010 were included in the study. The primary outcome was the risk of at least one adverse event related to FFA. All adverse events occurring within 30 minutes of administration of FFA dye—both self-reported or those observed by the primary investigator were listed and summarized by frequency of occurrence. Data entry and analysis were done using SPSS version 19.
Results: A total of 106 individuals were enrolled. Of these, 19 (17.9%) developed at least one adverse event. The most common adverse event was nausea (n=9), followed by vomiting (4), itching (4), vertigo (4), severe cough (1), palpitation (1) and cold extremities (1).

Conclusion: The risk of FFA-specific adverse events, particularly nausea, in our study is significantly higher than that reported by previous studies and need further evaluation.

Keywords: FFA, adverse event, risk

13.21**OUTCOME OF DCR SURGERY IN A TERTIARY CARE HOSPITAL IN KARACHI**

*Rashid Baig, Qazi Asad Khan, Khabir Ahmad
Department of Surgery, Aga Khan University, Karachi*

Objective: Dacryocystorhinostomy, DCR surgery is performed to connect the lacrimal sac directly to the nasal cavity when there is obstruction in the nasolacrimal drainage system. The success rate of DCR can vary from 63% to 99%. We are currently reviewing the outcome of conventional DCR surgery at the AKUH.

Method: We conducted telephone interviews with all those who underwent conventional DCR surgery at the AKUH during 2001 to 2011. Each patient was asked if they had symptoms such as watering, discharge after the DCR surgery and if yes when did the problem begin.

Results: A total of 289 people are eligible to participate in the study. To date, 40 persons have been contacted. Of these 30 could not be reached for a phone interview because they could not be traced. A total of 11 cases were studied. The success rate of DCR surgery was 81.9%.

Conclusion: The success rate of study was high but missing information on the majority of surgeries limits the generalizability of the findings.

Keywords: DCR surgery, watering, success

13.22**PERIOCCULAR INFANTILE HEMANGIOMA**

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Objective: Periocular hemangioma commonly appears during the first year of life, but tend to decrease in size over the following 2 years. Propranolol is a new and effective addition to its treatment which is urgently indicated if the condition is found to impair the development of vision.

Method: A two and a half month old girl was brought to the eye clinic of AKUH, Karachi with a history of having developed a red colored lesion around the left upper eye lid at one week of age. By the age of one and a half month, the lesion had grown in all dimensions to cover the entire upper eyelid, resulting in closure of the eye. Crying increased the prominence of the mass. We found a large left periocular swelling covering the entire upper eyelid, but she was able to open her left eye enough to reveal her pupil and the red reflex. The swelling was purple in color, with smooth compressible surface. Valsalva maneuver resulted in enlargement of the swelling. The other eye and its periocular area were normal. The baby was following light and fixating on objects, with normally reacting pupils. She was kept under observation, but by the age of 4 and half months, the swelling had increased enough to cover her visual axis and completely occlude her left eye.

Results: She was admitted to the hospital and oral propranolol therapy initiated with a daily dosage of 1 mg/kg body weight.
Conclusion: Response to therapy was excellent (>70% reduction in size).

Keywords: infantile hemangioma, Periocular , propranolol

13.23 OUTCOME OF DCR SURGERY IN A TERTIARY CARE HOSPITAL IN KARACHI

*Rashid Baig, Qazi Asad Khan, Khabir Ahmad
Department of Surgery, Aga Khan University, Karachi*

Objective: Dacryocystorhinostomy, DCR surgery is performed to connect the lacrimal sac directly to the nasal cavity when there is obstruction in the nasolacrimal drainage system. The success rate of DCR can vary from 63% to 99%. We are currently reviewing the outcome of conventional DCR surgery at the AKUH.

Method: We conducted telephone interviews with all those who underwent conventional DCR surgery at the AKUH during 2001 to 2011. Each patient was asked if they had symptoms such as watering, discharge after the DCR surgery and if yes when did the problem begin.

Results: A total of 289 people are eligible to participate in the study. To date, 40 persons have been contacted. Of these 30 could not be reached for a phone interview because they could not be traced. A total of 11 cases were studied. The success rate of DCR surgery was 81.9%.

Conclusion: The success rate of study was high but missing information on the majority of surgeries limits the generalizability of the findings.

Keywords: Outcome, dcr, surgery

Results: Of the total 351, 130(37%) were paediatric and 221(63%) were adult patients. There were 187(53%) males. More than 6 hours delay was noted in 94(27%) patients. Average delay was 27 hours and two patients had to wait for 72 hours. Twenty four(25%) were front patients while 22(23%) were recess patients who suffered delay. There was no mortality, 75(80%) were discharged home and 4(4%) of the delayed patients were admitted. Delay in laboratory reporting was the main factor observed. **Conclusion:** Significant numbers of emergency patients are suffering preventable delays in final disposition. Our critical yet delayed patients did not suffer any grave outcome.

Keywords: Delay factors, emergency patients, final disposition

13.30 MINIMALLY INVASIVE ESOPHAGECTOMY: A TREATMENT MODALITY FOR ESOPHAGEAL CANCERS IN PAKISTAN - A CASE SERIES

*Sameer Ur Rehman, Abid Jamal
Department of Surgery, Aga Khan University, Karachi*

Objective: There is an increase in incidence of esophageal cancers in Pakistan; particularly squamous cell cancer, due to a rise in tobacco use in different forms. Possibly, the only therapeutic option to date is the use of neoadjuvant therapy followed by surgical esophageal resection.

Method: We report five cases of esophageal cancers in Pakistan where minimally invasive esophagectomy was adopted as a treatment modality.

Results: All of the cases were operated with clear margins and appropriate lymph node dissection. Only one of the five cases had a post-operative anastomotic leak which self-resolved on total parenteral nutrition. The operative time ranged from 6.5 hrs to 11hrs and the mean hospital stay was 14.2 days. All the patients had uneventful post-operative recovery and are disease free at a follow-up ranging from 4 months to 1 year.

Conclusion: Open esophageal resection has a high morbidity and mortality. In addition, it involves long Intensive Care Unit stay, in hospital stay and long recovery period. Minimally Invasive Esophagectomy seems to have the potential to improve this, if employed frequently in the management of esophageal cancers in Pakistan. Based on our initial experience of minimally invasive esophagectomy in Pakistan, videoscopic esophagectomy appears to be as safe as conventional open esophagectomy with the potential to achieve better post-operative results.

Keywords: Esophagectomy, Surgery, Cancer

13.31 MINIMALLY INVASIVE ESOPHAGECTOMY: A TREATMENT MODALITY FOR ESOPHAGEAL CANCERS IN PAKISTAN - A CASE SERIES

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Department of Surgery, Aga Khan University and Patel
Hospital, Karachi*

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Keywords: Esophagectomy, Surgery, Cancer

13.32**INTRODUCTION OF ELECTIVES INTO THE BACCAULEURATE CURRICULUM: FROM CONCEPTION TO OPERATIONALIZATION**

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Objective: Design of a curriculum is a daunting but exciting activity. Adding electives to a curriculum enhances the knowledge base of students. For the first time the baccalaureate nursing curriculum offered the flexibility of offering two electives into the curriculum. The faculty offered two courses one on Palliative Nursing and the other on Diagnostic test. Both courses complemented the baccalaureate curriculum.

Method: This paper will describe the process from conceptualization of the elective to operationalization of the Palliative nursing course. The course was delivered using a hybrid approach which included e learning, face to face component and hands on experience in a clinical setting.

Results: The course has proved to be beneficial for nursing students, nursing faculty and nursing service employees. Several positive outcomes were reported from student evaluation, course briefings and meeting with Director of Nursing Services

Conclusion: The lessons learnt from this course will go a long way to add to the knowledge base for electives for the national baccalaureate curriculum.

Keywords: e learning, baccauleurate education, electives

13.33**ASSESSING IMPACT OF RESEARCH BY LEVELS OF EVIDENCE: A NATIONAL PERSPECTIVE**

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Department of Orthopaedics, Indus Hospital, Karachi,*

Objective: Impact of medical institutions on clinical decision-making globally may be estimated by the level of evidence of their research articles. We aimed to compare the potential impact of research from Pakistan, Nigeria, Japan and United States through analysis of level of evidence of their articles and to illustrate utility of such analysis for cross-regional and –institutional comparison.

Method: PUBMED search was performed for studies on levels of evidence in journal articles. Relevant articles were selected, containing analysis of leading Nigerian, Japanese and United States (U.S.) journals. Pakistani articles were analyzed and categorized by the authors, and results collated with those from the other countries. Guidelines of the Center for Evidence Based Medicine in Oxford, UK, were used to grade evidence on a scale of 1 (highest) to 5 (lowest).

Results: Majority (66-95%) of articles in the leading Japanese, Nigerian and Pakistani as well as a U.S. sub-specialty journal

were of level 3 and 4 evidence, though in leading U.S. general medical journals majority (73%) were level 1 and 2 ($p < 0.001$). Within Pakistani journals articles originated from 23 countries, but there were no level-1 or -2 articles from U.S. or Canada. The number of articles from various regions of Pakistan did not correspond to their population or number of medical colleges/universities, mainly due to the skewing effect of one institution from Karachi in Sind province which contributed 38% of all level-1 and -2 articles.

Conclusion: Level of evidence analysis can be used as one of the tools to estimate probable research impact across different institutions and regions in a country and between countries. Such information may be useful for journals, institutions, policy makers and health research planners for priority setting.

Keywords: Evidence-based medicine, Research output, Levels of Evidence

13.34**TRANSRADIAL PRIMARY PERCUTANEOUS CORONARY INTERVENTION (PCI) –EXPERIENCE FROM A TERTIARY CARE CARDIAC CENTRE**

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Objective: To determine the outcomes of primary percutaneous coronary intervention (PCI) via transradial approach in a tertiary care cardiac centre.

Method: We retrospectively reviewed the medical records of 160 consecutive patients presented to our hospital between January 2009 to January 2011 with acute ST elevation myocardial infarction (STEMI) and treated with primary PCI via transradial approach. The primary end points were in hospital mortality and procedural success. Secondary end points were access site bleeding complication and 30 day outcomes (mortality, myocardial infarction and congestive cardiac failure). **Results:** The procedural success was 98%. Three (1.8%) patients died during hospitalization. Forearm hematoma (> 5 cm) was observed in three (1.8%) patients. No mortality was observed in 30 day follow up from discharge while myocardial infarction and congestive cardiac failure were 1.4% and 4% respectively. **Conclusion:** Our findings suggest that high procedural success and favorable clinical outcomes matching the international data can be achieved in our patients undergoing primary PCI via transradial approach.

Keywords: Percutaneous Coronary Intervention, Myocardial infarction, Reperfusion

13.36

STENT THROMBOSIS IN PATIENTS RECEIVING SINGLE-DOSE AND DOUBLE-DOSE DUAL ANTIPLATELET THERAPY FOLLOWING PERCUTANEOUS CORONARY INTERVENTION AT A TERTIARY CARE HOSPITAL IN KARACHI-A COMPARATIVE STUDY

*Muhammad Shamim Siddiqui, Syed Muhammad Faisal Hussain, Mehreen Khatib, Sahr Sami, Bashir Hanif
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Objective: To compare the outcome of stent thrombosis in patients receiving 75-150 mg/day aspirin plus 75 mg/day of clopidogrel versus those receiving 300 mg/day aspirin and 150 mg/day clopidogrel for at least initial 6 weeks post PCI.
Method: This study is an ex-post (retrospective) quasi-experiment because it wasn't possible to randomly assign patients to different dosages of dual antiplatelet therapy (DAT). The sample consisted of two groups, one having patients who received single-dose DAT after undergoing PCI, and the other having those who received double-dose DAT after undergoing PCI at THI. The progress of the patients in both the groups was assessed through the medical charts for a follow-up duration of up to 1 year, and patients who didn't have any episode of stent thrombosis during this time period were deemed complication free. In order to reduce the confounding factors, effort was made to include consecutive patients undergoing PCI, so that the time period in which the patients received that treatment was as short as possible. Furthermore, during this period, only one operator performed angioplasties, therefore, the procedural risk factors were kept constant, thus reducing the confounding factors.
Results: A total of 256 patients were included in the final analysis, out of which 11 patient suffered from stent arterial thrombosis (SAT). 126 patients belonged to the group having patients who received single-dose DAT after undergoing PCI, and 10 of them developed SAT (8%), with 4 of them dying due to it. The other group that had patients who received double-dose DAT after undergoing PCI had 130 patients, and only 1 patient in that group developed SAT (1%).

Conclusion: Stent thrombosis is the most feared complication of percutaneous coronary intervention, with a pretty high mortality rate. As seen from the results, giving patients double-dose dual antiplatelet therapy, as opposed to single-dose dual antiplatelet therapy, following percutaneous coronary intervention significantly reduced the incidence of stent thrombosis.

Keywords: Stent Arterial Thrombosis, Percutaneous Coronary Intervention, Myocardial infarction

13.37

MOLECULAR DIAGNOSIS OF CYSTIC FIBROSIS

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Objective: Cystic fibrosis (CF) is a common autosomal recessive trait and affects 1/2000 births in North Europeans but is less frequent in Asians. CF is caused by a mutation in a 189362 base pair cystic fibrosis transmembrane conductance regulator (CFTR)

gene on chromosome 7q31 with 27 exons. About 70% of mutations are due to 3 base deletions in exon 10, with a loss of phenylalanine at position 508 in CFTR protein; delta F508.
Objective: To determine the prevalence of delta 508 mutation (CFTR) in patients suspected with CF.

Method: 100 whole blood samples received for CF diagnosis from January- 2010 - September-2011 were studied. DNA was extracted and delta 508 mutation was detected by using (amplification refractory mutation system) ARMS PCR. Sweat chloride (SWCL) analysis on patients was performed (in Biochemistry) using a Wescor iontophoretic system.
Results: Of the 100 samples tested, 17 samples were delta F508 positive. Fifty eight cases tested for SWCL and 10 samples showed SWCL abnormality. Six patients were positive for both SWCL and delta F508; while 4 patients were SWCL positive but delta F508 negative. In 23 patients, the SWCL test had to be cancelled due to technical difficulties.

Conclusion: We observed that 60% of clinically diagnosed CF patients had mutation at delta F508. Therefore, additional CFTR gene mutations need to be considered for improved molecular diagnosis of CF.

Keywords: Cystic fibrosis, delta 508, sweat chloride

13.38

INTRODUCING PREFILLED METHOTREXATE SYRINGES FOR IMPROVING PATIENT SAFETY AND COST EFFECTIVENESS IN RHEUMATOID ARTHRITIS (RA) PATIENTS:

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Background: Aga Khan University Hospital (AKUH) is an ISO certified and JCIA accredited tertiary care teaching hospital that has a well established pharmacy services. Oncology pharmacy section of AKUH is also well equipped with modern facilities, where specialty trained oncology pharmacists are engaged in all aspects of chemo patient care activities, maintaining safe handling and disposal of hazardous drugs and standards of clinical practice in Oncology Pharmacy.

Objectives: Methotrexate (MTX) is one of the treatment of choice for RA patients. The doses of MTX for RA treatment are very low ranging from 7.5 mg to 40 mg. Most commonly effective doses are in range of 7.5 to 12.5 mg. As MTX is a cytotoxic drug and direct withdrawing of drug from vial increases the risk of cytotoxic exposure, spillage and environmental contamination, so to avert this, oncology pharmacy initiated preparation of MTX prefilled syringes as per the individual dose requirements of RA patients. The primary aim is to improve patient safety in both aspects; from hazardous drug exposure plus under/supra-therapeutic dose administration. The secondary aim was to achieve the cost saving by using same vial to draw maximum possible doses under aseptic techniques.

Method: We started pre-filled MTX syringes through our oncology pharmacy, as commercially MTX syringes are not available and vials available are for single use only (as are preservative free). Therefore the issue was discussed in our Quality Improvement Committee meeting. Team members included our safety coordinator, manager and pharmacists

involved in handling and dispensing of MTX. References for syringe stability of MTX were checked and based on authentic information the prefilled syringe drawing and packaging process was developed.

Results: The entire process is carried under aseptic technique and safe handling environment by using Biological Safety Cabinet. Many problems were overcome after the initiation of MTX syringes e.g. proper labeling, sterile dose for each administration that is accurately measured to avoid residues/disposal of unused amount, drawing and expiry date along with the complete dosing and administration instructions. This also resulted in approx. cost saving of Rs 500 per patient.

Conclusion: Prefilled syringe preparation of MTX for RA patients helps in improving patient safety and curtailing patient harm from cytotoxic exposure and significantly reduces patient cost as well. Such types of initiatives are needed from pharmacy as our local industry scenario does not support availability of such dosage forms and knowledge level of general patient population warrants minimum manipulation of hazardous drugs by the patient him/herself. Last but not the least cost effectiveness that is necessary as majority of patients bear the expenses from own pocket without any third party payment coverage.

Keywords: Patient safety, methotrexate, rheumatoid arthritis (RA)

13.39

HOMOLOGY UNIFICATION OF HUMAN NEUTROPHIL DEFENSIN 1 USING MULTIDIMENSIONAL BIOINFORMATICS TOOL.

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Objective: Defensins (DEFA) are 2-6 kDa, cationic, microbicidal peptides also active against fungi, and enveloped viruses. We aimed to investigate homology for all six types of alpha defensins (DEFA1-6) within humans using multi-dimensional bioinformatics approaches.

Method: The DEFA1 transcript was selected from NCBI. ClustalW2, Muscle, T-coffee and Ensembl tools were used for this study. Multiple alignments of nucleotides and protein sequences was performed and phylograms were constructed.

Results: Results indicated that DEFA1 had maximum homology (100%; e = 0.0) with DEFA1b, 98%, with DEFA3 (e= 0.0), and homology with DEFA4, 5 and 6 was 69%, 68% (1e- 36) & 66% respectively. DEFA1 protein sequences were 100% similar with DEFA1b, 98% with DEFA3, but only 46% with DEFA4 and 48% and 48% with DEFA5 and 6 respectively. DEFA1 showed maximum homology 39.48% with Muscle, 31.5% by clustalW2, and 37.8% by T-Coffee. Protein homology by using all tools was similar (51%). Phylogram showed that DEFA1b and DEFA1 evolved from same ancestor in same time while DEFA3 had also evolved much closer. DEFA6, DEFA5 and DEFA4 stand on lot of distance from DEFA1 suggesting less structural and functional similarity. Ensembl's gene tree was similar to that of clustalW2.

Conclusion: Slight nucleotide homology difference represented synonymous changes at protein level. However in phylogram DEFA1 lies close to DEFA1b, 3 and 4. While DEFA5 and 6

arise from a sub-ancestral node. Use of multiple tools to study gene analysis gives better chance for authentic and reliable results.

Keywords: Alpha defensin, homology, DEFA1

13.40

COMPARISON OF HARMONIC WITH DIATHERMY IN MODIFIED RADICAL MASTECTOMY: A RANDOMIZED CONTROLLED TRIAL

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Objective: To compare outcomes between harmonic and Electrocautry dissection in female adult patients who underwent modified radical mastectomy (MRM).

Method: After Ethical Review Committee approval (1519-SUR-ERC-2010) and informed consent, adult females who underwent MRM during period were randomized to receive either intervention A (harmonic scalpel, n=75) or B (electrocautry, n=75) by computer generated randomization sequence. The procedure was standardized except rising of the flaps & breast that was performed as per randomization. Two drains were placed i.e. one in axilla and other in flap. Patients were followed up in clinic for four weeks. The outcomes were estimated blood loss (EBL), operating time, drain Volume and drain days, seroma formation, surgical site infection and postoperative pain. Comparison of groups was done with T-test for continuous and chi-square for categorical variables.

Results: Both the groups were comparable for baseline variables with age of 48.5±14.5 and 50.5±12.2 years, respectively. Harmonic dissection yielded better outcomes as compared to electrocautry with lower EBL (182±92 vs. 100±62, p-value: 0.00), operative time (187±36 vs. 191±44, p-value: 0.49), drain volume (1035±413 vs. 631±275, p-value: 0.00), drain days (17±4 vs. 12±3 p-value: 0.00), seroma formation (21.3% vs. 33.3%, p-value: 0.071), surgical site infection (5.3% vs. 23%, p-value: 0.006) and postoperative pain (3.4±1 vs. 1.8±0.6, p-value: 0.00).

Conclusion: Although the harmonic didn't reduce the operative time, however, it significantly reduced post-operative discomfort and morbidity to the patient. Based on the results of our trial we recommend harmonic dissection in MRM.

Keywords: Harmonic, diathermy, modified radical mastectomy

13.41

TREATMENT OF COMPLEX FISTULA IN ANO WITH CABLE TIE SETON: A PROSPECTIVE CASE SERIES

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Objective: To determine the fecal incontinence and recurrence rate in patients with complex fistula in ano managed with cable tie seton at a tertiary care teaching hospital.

Method: This is a prospective case series of patients with complex anal fistula i.e. recurrent fistula or encircling >30% of external

anal sphincter, managed with cable tie seton from March 2003 to March 2009. Patients were seen in the clinic after 72 hours of seton insertion under anesthesia and then every other week. Each time the cable-tie was tightened if found loose without anesthesia and incontinence was inquired according to wexner's score.

Results: Seventy nine patients were treated during the study period with the age (mean± standard deviation) of 41±10.6 years and. The seton was tightened with a median of six times (3-15 times range). Complete healing was achieved in 11.2±5.7 weeks. All the patients were followed for a minimum period of one year and none of the patients had any incontinence. Recurrence was found in 4 (5%) patients

Conclusion: The cable tie seton is safe, cost effective and low morbidity option for the treatment of complex fistulae-in-ano. It can, therefore, be recommended as the standard of treatment for complex fistulae-in-ano requiring the placement of a seton.

Keywords: Fistula in ano, cable tie, seton

13.42

DEVELOPING DRUG-DISEASE INTERACTION MODULE IN COMPUTERIZED PHYSICIAN ORDER ENTRY (CPOE) SYSTEM; EXPERIENCE FROM A TEACHING HOSPITAL IN PAKISTAN

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Objective: When International data related to sentinel events were reviewed, it trailed back to the evidence that certain contraindicated drugs were administered to the patients causing the patient harm. Use of contraindicated medications is a preventable medication error and awareness to the certain conditions of the patient can arrest the occurrences of such incidences.

Method: Our hospital based CPOE system lacked the functionality to record and retain the High Risk Diagnosis (HRD) like Diabetes, G6PD deficiency, Porphyria, CKD, CLD and Myasthenia Gravis etc. Pharmacy along with IT, Nursing and Physician support devised a system change to reduce the possibility of administering a contraindicated drug to a patient. This change was approved by Pharmacy & Therapeutic Committee (P & TC). System modifications included permanently storing HRD on the patients' record, accessible in both inpatient and outpatient visits. List of interacting drugs were defined in CPOE system to cross match against HRD upon order entry. Also, to avert the missing information on profile drug-disease management interface was also created that facilitates the entry of HRD in case drug in indicated in its management is prescribed (e.g. Pyridostigmine for Myasthenia Gravis). Laboratory interface was also developed to provide the relevant lab tests pertaining to HRD to facilitate decision making.

Results: After the approval from P & TC the system based implementation was done in CPOE. Post implementation survey revealed the recording of HRDs on 78% patients' profile and associated pharmacist interventions in prescribing the contraindicated drugs.

Conclusion: Our CPOE system initially did not have functionality to record HRD other than admitting diagnosis. Moreover the drug-disease interactions alerts were also lacking. By implementing this feature approx. 80% of profiles now carry

updated high risk diagnosis along with the enabled interaction alerts thus curtailing several unsafe drug entries. CPOE enhancement for developing the clinical decision support system for scrutinizing drug-disease interactions is a very useful tool to enhance patient safety.

Keywords: Drug interactions, CPOE, high risk diagnosis

13.43

POSTOPERATIVE PORT-SITE PAIN AFTER GALL BLADDER RETRIEVAL FROM EPIGASTRIC VS. UMBILICAL PORT IN LAPAROSCOPIC CHOLECYSTECTOMY: A RANDOMIZED CONTROLLED TRIAL

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Objective: to compare the mean postoperative pain score at port site after retrieval of GB from epigastric or umbilical port in adult patients who underwent elective laparoscopic cholecystectomy at a tertiary care hospital

Method: This randomized controlled trial was conducted on adult patients who underwent elective laparoscopic cholecystectomy at our institute for six months in 2010. The selected patients were randomized through lottery method to either group A (n=60, GB retrieval through epigastric port) or group B (n=60, GB retrieval through umbilical port). VAS for pain was assessed by a registered nurse at 1, 6, 12, 24 and 36 hours after surgery.

Results: The VAS for pain at umbilical port was less than epigastric port at 1, 6, 12, 24 and 36 hours after surgery (5.9±1.1 vs. 4.1±1.5, 4.6±0.94 vs. 3.5±1.05, 3.9±0.85 vs. 2.4±0.79, 3.05±0.87 vs. 2.15±0.87, respectively) and the difference was statistically significant. Multiple linear regression was done for pain at 24 hours and the VAS at umbilical port was 0.9 cm less than epigastric port after adjusting for age, sex, duration of surgery and additional analgesia use ($r^2=0.253$, $p\text{-value}=0.00$).

Conclusion: Gall bladder retrieval from umbilical port is associated with lower pain than epigastric port in patients undergoing elective laparoscopic cholecystectomy. We recommend umbilical port for gall bladder retrieval.

Keywords: Laparoscopic cholecystectomy, Port site, post operative pain

13.44

DOES PRIMARY CLOSURE INCREASE RISK OF SURGICAL SITE INFECTION COMPARED TO OPEN WOUNDS? RETROSPECTIVE COHORT STUDY

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Objective: to compare the incidence proportion of surgical site infection (SSI) at stoma reversal site between primary closure and open surgical sites in adult patients undergoing reversal of intestinal stoma at a tertiary care hospital.

Method: Adult patients, who underwent elective loop & double

barreled intestinal stoma reversal through perio-stomal incision between Jan' 2005 to May 2011, were identified by ICD code 46.51 & 46.52. Selected patients were classified into two groups i.e. exposed (closed stoma closure sites) and unexposed (open surgical sites) after reviewing operative notes. Patients with missing records, post operative anastomosis leak, other simultaneous procedures, perioperative steroids, conversion to laparotomy and lost to follow up were excluded. Files were reviewed independently by two reviewers for main exposure & outcome variable i.e. SSI based on CDC criteria. Sample size of 71 in each group was calculated. Analysis was done on SPSS-17. Chi square test was used to compare SSI between the groups. Multivariable analysis with Cox regression was applied to calculate Relative Risk adjusted for confounders. **Results:** The mean±SD for age was 41±15 vs. 36±15 years in open vs. closed surgical sites, respectively, with male preponderance in both the groups. The incidence proportion of surgical site infection in closed wounds was 12.9% higher than open wounds (16.9% vs. 4%, p-value= 0.013) with RR of 5.8 (95% CI: 1.50-22.54) adjusted for gender, BMI, site of stoma, malignancy and chemo radiotherapy.

Conclusion: The risk of SSI in closed wounds is greater than open wounds after controlling for gender, BMI, site of stoma, malignancy and chemo radiotherapy. We recommend that the wounds should not be closed.

Keywords: Stoma closure, Surgical Site infection, Cohort study

13.45

PICTORIAL PRESENTATION OF MANAGEMENT OF INTRACRANIAL ANEURYSM WITH DETACHABLE COIL

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Objective: purpose of this poster presentation is to highlight the various types of aneurysms that were identified during angiography and successful endovascular coiling was performed on these variety of aneurysms that proves the technical success achieved safely

Method: data of 6 year reveals that 43 patients underwent aneurysm coiling who have mean age of 46.67+- 11.57 years, which includes 23males and 20 female patients. In all these patients detachable coils were deployed. Out 43 patients 4 were diagnosed with un-ruptured aneurysms while 39 had ruptured aneurysms causing subarachnoid hemorrhage, grading of which was done according to Hunt and Hess grading system. Distribution of grading includes 11 patients with Grade I and 11 with Grade II, while 8 patients had Grade III and 9 had Grade IV. These cases were diagnosed either with Plain CT, CT Angiography or digital subtraction angiography. All endovascular coiling were performed under general anesthesia through femoral artery approach and all were packed densely with Detachable platinum coils. A retrospective approach was adopted and all patients files and radiology reports were reviewed and analyzed. To determine clinical outcome Modified Ranking Score was used. Score 0-2 represented good outcome, score 3-5: dependency (Cannot attend own bodily needs and carry out daily activities without assistance) and score 6: death.

Results: Aneurysm size ranged from 3mm - 22mm (mean size 8 mm ± 4). 74.4% aneurysms had narrow necks while 25.6%

aneurysms were wide necked. Most common aneurysm site was anterior communicating artery. Technical success rate for endovascular intracranial aneurysm coiling was 95.3 % (n = 41). Major complication rate was 11.6 % (n = 5). Mortality rate was 2.3% (n = 1). 78 % patients showed good clinical outcome after coiling including 4 patients with un ruptured aneurysms (n = 32).

Conclusion: wide variety of aneurysms based on their size, morphology and locations were observed in our study and were successfully treated using endovascular technique.

Keywords: Aneurysm, coiling, interventional radiology

13.46

UNNECESSARY RADIATION TO NON-THORACIC STRUCTURE ON NICU AND PEDIATRIC CHEST RADIOGRAPH

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Objective: To evaluate the unnecessary or additional radiation exposure to non-thoracic structure during neonate intensive care unit, pediatric wards and out sided pediatric referral.

Method: A clinical audit of 150 chest radiographs was performed at Aga Khan University Hospital Karachi. Chest radiographs were from neonatal intensive care unit, admitted patients in wards and patients referred from other hospitals. 50 radiographs from each section were analyzed for extent of radiation field to non-thoracic regions, visualization of adult fingers & number of retake x-rays. Guidelines from Soboleski 3 were taken. This was accomplished by delineating the most superior and inferior portions of the body included within the boundaries of collimation on each chest radiograph. The distance between the superior and inferior aspect of the lung was measured and compared with the long -axis of the radiation field on radiographs. This ratio measures the efficiency of the use of radiation field. Radiographic reports were reviewed to determine whether valuable data were obtained or not.

Results: In (89 x-rays) 59% of chest radiograph unnecessary non-thoracic structures were included, resulting in radiation exposure to these sites. In (49 x-rays) 32% radiographs adult fingers were exposed. (9 x-rays) 6% radiographs were repeated for multiple reasons. (2 X-rays) 1% for positioning error, (2 x-rays) 1% due to motion blurring, 4% due to over collimation.

Conclusion: Our audit show that our present positioning techniques in neonatal & pediatric chest radiography result in unnecessary radiation exposure to non-thoracic structures. We need to adapt new landmarks for collimation to reduce this problem. Better restraining techniques are to be used to avoid unnecessary exposure of adult fingers.

Keywords: Radiation dose, pediatric, radiographs

14.1

A CASE CONTROL STUDY TO DETERMINE RISK FACTORS FOR BIRTH ASPHYXIA IN MATIARI, SINDH

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Background: Birth asphyxia is a serious clinical problem worldwide. Each year approximately 4 million babies are born asphyxiated which results in 2 million neonatal deaths and intrapartum stillbirths. Objectives To identify socio demographic and clinical factors related to BA

Method: A matched case control study was conducted in Matiari with 246 cases and 492 controls. Cases were those who have died due to BA and controls were those who were born alive at same time period and resided in same area.

Results: In univariate analysis significant risk factors are maternal age, education, poor dietary intake, history of miscarriages, still births, neonatal and child deaths, birth interval, maternal complications during pregnancy and labour such as bleeding, and excessive discharge from vagina, anemia, high BP, prolong labour, fetus stopped movement and breech delivery ,newborn conditions at birth i.e. size (small or large) , didn't cry immediately, blue color, difficulty in breathing and chest in drawing. In multivariate analysis maternal age above 30 years OR: 1.8(1.1-3.1), history of neonatal deaths OR: 19.7(11.2-34.8), extra work load OR: 2.8(1.2-6.5), excessive vaginal discharge during pregnancy OR: 3.4(1.3-9.0), excessive bleeding during labor OR: 7.5(2.2-26.1), prolong labor OR :7.8(2.8-21.8) size of baby small OR: 0.48(0.18-1.3) or large OR: 5.3(1.5-18.6) at birth ,baby didn't breathe and cry immediately after birth OR: 60.3(21.5-168.9)

Conclusion: The key risk factors found from this study are maternal age, history of stillbirths, neonatal deaths, excess workload during pregnancy ,maternal complications i.e. excessive vaginal discharge during pregnancy, excessive bleeding during labor, prolonged labor, birth weight and newborn do not breathe and cry.

Keywords: Birth asphyxia, prolong labor, antenatal care

14.2

ADAPTATION AND RELIABILITY TESTING OF MACARTHUR'S COMMUNICATIVE DEVELOPMENT INVENTORY FOR YOUNG CHILDREN AGED 24 MONTHS IN RURAL SINDH

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Background: Early language development is a useful proxy indicator for future academic achievement and cognitive functioning. MacArthur's Communicative Development Inventory (CDI) is a widely used tool to assess vocabulary comprehension and expression. MacArthurs CDI has been adapted for a wide range of settings. It is a useful tool to assess language development for early intervention studies.
Objective: The study objectives were to adapt the MacArthur's

CDI for use in rural Sindh for use with children at 24 months of age and to test reliability of the adapted tool.

Method: In phase 1, the original word list (for children aged 16-30 months) comprising 182 words was reviewed in a focus group discussion to identify whether words were suitable in the local context. The modified list was tested on a sample of 100 mothers with children in the target age range. In phase 2, results were reviewed and a representative set of 100 words were selected comprising easy, moderate and difficult words. In phase 3, the adapted list of 100 words was piloted on 50 mothers with children and inter-rater reliability and test-retest were carried out.

Results: Key results shows increase comprehension and expression improved with increasing age as expected. Inter-rater reliability for comprehension (n10, r0.81) and expression (n10, r0.85) was good Test-retest for comprehension (n30, r-0.5) was reasonable and for expression (n30, r1.0) was good.

Conclusion: The instrument can be used in rural Sindh as part of battery of assessments to assess language development at 24 months of age.

Keywords: Language development, Pakistan, McArthurs CDI

14.3

MATERNAL PSYCHOLOGICAL DISTRESS AND IMPLICATIONS FOR EARLY CHILD DEVELOPMENT: A STUDY IN NAUSHERO FEROZE, SINDH

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Objective: Pakistan is one of the Asian countries with the highest prevalence rates of maternal psychological distress. Maternal psychological distress can affect child rearing practices and is associated with impaired growth, health and development. As a sub-study in an early child development trial, we examined prevalence of maternal psychological distress and associated risk factors that may have implications on early child outcomes.

Method: The study was conducted in Naushero Feroze, Sindh. A total of 1490 mothers were assessed for stress at post-partum using the Self-Report Questionnaire (SRQ) 20. The SRQ 20 comprises twenty items and is validated for use in Pakistan. A relative risk analysis of factors associated with psychological distress in mothers was conducted.

Results: The cut-off score used for SRQ 20 in Pakistani populations is 9 indicating risk of psychological distress. The mean score of the population was 6.6 (sd3.9). Twenty eight percent (28.3%) of the population scored equal to or above the cut-off indicating risk for psychological distress. The relative risk analysis showed that mothers with psychological distress were 1.50 times more likely to be from low income community (CI 1.23, 1.98), 1.86 times more likely to be illiterate (CI 1.00 and 3.45) and 1.46 more times to use physical punishment with a young child less than 2 years of age (CI 1.12, 1.90).

Conclusion: The results are consistent with previous findings. It is necessary to consider a component of supporting mothers in ECD interventions. The association between maternal psychological distress and ECD are being studied.

Keywords: Depression, mothers, Pakistan

14.4**CHILDREN LIVING IN POOR HYGIENE AND SANITATION CONDITIONS: WHY DOES IT MATTER?**

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Background: It is estimated that at least 200 million children, mostly from developing countries, suffer from developmental delays. Poor hygiene and sanitation conditions are known to influence growth faltering and increased risk of morbidity and mortality, yet little is known about the role of these conditions on child growth and development. The study aims to contribute to an understanding of the relationship between family hygiene, sanitary conditions and psychomotor development in the first three years of life

Method: A cross sectional household survey was conducted in urban and rural Sindh, Pakistan, by trained personnel. Children aged less than 3 (n=1,244) were assessed at home visits using 1) Bayley's Infant Developmental Scale for psychomotor development; 2) anthropometric status, and 3) socio-economic, hygiene and sanitation conditions via maternal interview. Socioeconomic, hygiene and sanitation indices are created using principal component analyses.

Results: Rural areas are highly correlated with hygiene index (HI) and sanitation index (SI), as compared to their urban counterparts. Age and sex adjusted SI is highly correlated with socioeconomic index (SEI). Multilevel modelling analysis showed that SI is significantly associated with child's delayed development, stunting and being underweight; while HI is associated with underweight and stunting status of children, independent of SEI and rural-urban neighbourhood.

Conclusion: Due to a strong association between hygiene and sanitation conditions and development, recognition should be given to the growth and developmental needs of children living in such conditions.

Keywords: Child development, Sanitation index, Hygiene Index

14.5**ASSESSING HOME ENVIRONMENT IN EARLY CHILD DEVELOPMENT IN TWO COMMUNITIES OF PAKISTAN**

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Background: Family environment plays very important role in Early Child Development (ECD) and availability of stimulating material in early years of child's life is crucial. The Home Observation for Measurement of the Environment (HOME) inventory is one of the most widely used measures that assess the quality and quantity of support and stimulation provided for children at home. This study aims to measure the prevailing situation of home environment for ECD in two communities of Pakistan.

Method: A cross-sectional study was carried out in two field sites; Tando Jam (Sindh) and Mastung (Baluchistan). All mothers with children birth to age 3 during December 2009 and May 2010 were recruited for the study. Data on home environment

was collected from a cohort of 1097 children by using Infant Toddler-HOME (IT-HOME) scale further distributed over six subscales. Frequency distributions of all the responses, mean and standard deviation (SD) for all subscales were calculated. **Results:** Mean±SD age of study children were 16.6±12.1 months. Overall, mean score on HOME scale was 31.6±7.1 and 29.7±6.9 in Hyderabad and Mastung respectively. On a subscale level about half the families in Hyderabad and three quarters in Mastung scored in the lowest fourth category on Learning Material subscale whereas, 41% of families in Mastung and 18% of families in Hyderabad were in lowest fourth on Organization subscale. On remaining scales at least 50% of families have scored in upper fourth category in at least three subscales.

Conclusion: Considerable evidence is available that poor home environment retards intellectual growth. The HOME inventory identified up to 23% of young children in the lowest fourth category who are potentially at risk. There is a need to develop culturally acceptable, evidence based parenting interventions to improve the home environment.

Keywords: Home Environment, child Development

14.6**A CASE REPORT ON COLLODION BABY**

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Objective: A Case Report of a "Collodion Baby" born in "The Aga Khan Hospital for Women & Children, Kharadar", who was diagnosed on the basis of clinical features and was provided "Good Environmental and Symptomatic Management" but unfortunately baby boy expired on the 3rd day of his life (Neonatal Death of Child).

Method: Case Report

Results: Patient Mrs. Shazia Azmat Ali, 24 years of age, Pathan, resident of Kemari -Karachi, cousin marriage, Para 4 + 1, 02 alive female children with normal body and skin (O/E), had two diagnosed Collodion Male Children, this condition being transmitted as autosomal recessive trait. The infant with the condition presents covered with a yellow-brown, glistening, film-like membrane resembling Collodion, often resulting in ectropion of the eyelids (with absent eye balls) and eversion of oral mucosa. Within hours this membrane dries and cracks to form fissures and it peels off within one or two days but may reform several times. The Collodion baby is at risk because of increased insensible water loss through the skin, which may result in acute renal failure and / or permanent brain damage if fluid replacement is neglected. Pulmonary infections and septicemia may also occur. Patient had six antenatal visits in our unit with normal routine laboratory investigations and she had two antenatal ultrasound scans at 28 and 35 weeks of gestation, which showed normal structural anatomy and optimal growth rate of fetus. Any relative investigations were not considered though patient had two collodion children in the past. After delivery (Emergency LSCS) baby was shifted to nursery for stabilizing management and nursing care. Baby expired on 3rd day of life (neonatal death).

Keywords: Collodion baby

14.8 EFFECTIVENESS OF DIFFERENT DOSES OF ZINC ON DURATION OF DIARRHEA AMONG CHILDREN 6-18 MONTHS OF AGE: A NESTED, RANDOMIZED, DOUBLE BLIND, PLACEBO CONTROL TRIAL IN A COMMUNITY SETTING IN PAKISTAN

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Objective: Studies have shown the therapeutic benefits of zinc supplementation during a diarrhea episode. WHO and UNICEF have recently recommended the therapeutic use of zinc for 10-14 days at a dose of 10mg daily in infants less than 6 months old and 20mg daily in older children whereas Boranet et al has shown that 15-30mg of zinc provided to children of ages 6-59 months did not show any effect on reduction of diarrhea incidence, its duration or severity. Patel and colleagues have also reported similar results. More data are needed to reach consensus on appropriate dosage, therefore we propose to evaluate the dose related effect of zinc in reducing the duration of acute diarrhea in Pakistani children of 6-18 months of age.

Method: This is a double blinded, randomized, placebo controlled trial in children designed to measure the impact and effectiveness of daily zinc administration for 10 days in acute cases of diarrhea. There are 3 groups in this study receiving zinc dosages of 0mg/day, 10mg/day and 20mg/day respectively. Zinc is provided in the form of dispersible tablets. This study is part of larger trial and cases of acute diarrhea will be identified through routine visits from the intervention groups receiving micronutrient sprinkles in the larger trial.

Results: Presently 210 cases have been recruited from a target of 630. Follow ups are in progress.

Conclusion: The study will be completed by the end of March 2012 and we shall be able to determine the dosage of Zinc effective for treatment in acute diarrhea.

Keywords: Zinc Placebo

14.9 COMMUNITY-BASED INTERVENTION PACKAGES FOR REDUCING MATERNAL AND NEONATAL MORBIDITY AND MORTALITY AND IMPROVING NEONATAL OUTCOMES

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Objective: While it is recognized that almost half of the newborn deaths can be prevented by scaling up evidence-based available interventions such as tetanus toxoid immunization to mothers; clean and skilled care at delivery; newborn resuscitation; exclusive breastfeeding; clean umbilical cord care; management of infections in newborns, many require facility based and outreach services. It has also been stated that a significant proportion of these mortalities and morbidities could also be potentially addressed by developing community-based packages interventions which should also be supplemented by developing

and strengthening linkages with the local health systems. Some of the recent community-based studies of interventions targeting women of reproductive age have shown variable impacts on maternal outcomes and hence it is uncertain if these strategies have consistent benefit across the continuum of maternal and newborn care.

Objectives: To assess the effectiveness of community-based intervention packages in reducing maternal and neonatal morbidity and mortality; and improving neonatal outcomes.

Method: We searched The Cochrane Pregnancy and Childbirth Group's Trials Register (January 2010), World Bank's JOLIS (12 January 2010), BLDS at IDS and IDEAS database of unpublished working papers (12 January 2010), Google and Google Scholar (12 January 2010). All prospective randomized and quasi-experimental trials evaluating the effectiveness of community-based intervention packages in reducing maternal and neonatal mortality and morbidities; and improving neonatal outcomes. Two review authors independently assessed trial quality and extracted the data.

Results: The review included 18 cluster-randomized/quasi-randomized trials, covering a wide range of interventional packages, including two subsets from one trial. We incorporated data from these trials using generic inverse variance method in which logarithms of risk ratio estimates were used along with the standard error of the logarithms of risk ratio estimates. Our review did not show any reduction in maternal mortality (risk ratio (RR) 0.77; 95% confidence interval (CI) 0.59 to 1.02, random-effects (10 studies, n = 144,956), I² 39%, P value 0.10. However, significant reduction was observed in maternal morbidity (RR 0.75; 95% CI 0.61 to 0.92, random-effects (four studies, n = 138,290), I² 28%; neonatal mortality (RR 0.76; 95% CI 0.68 to 0.84, random-effects (12 studies, n = 136,425), I² 69%, P value < 0.001), stillbirths (RR 0.84; 95% CI 0.74 to 0.97, random-effects (11 studies, n = 113,821), I² 66%, P value 0.001) and perinatal mortality (RR 0.80; 95% CI 0.71 to 0.91, random-effects (10 studies, n = 110,291), I² 82%, P value < 0.001) as a consequence of implementation of community-based interventional care packages. It also increased the referrals to health facility for pregnancy related complication by 40% (RR 1.40; 95% CI 1.19 to 1.65, fixed-effect (two studies, n = 22,800), I² 0%, P value 0.76), and improved the rates of early breastfeeding by 94% (RR 1.94; 95% CI 1.56 to 2.42, random-effects (six studies, n = 20,627), I² 97%, P value < 0.001). We assessed our primary outcomes for publication bias, but observed no such asymmetry on the funnel plot.

Conclusion: Our review offers encouraging evidence of the value of integrating maternal and newborn care in community settings through a range of interventions which can be packaged effectively for delivery through a range of community health workers and health promotion groups. While the importance of skilled delivery and facility-based services for maternal and newborn care cannot be denied, there is sufficient evidence to scale up community-based care through packages which can be delivered by a range of community-based workers.

Keywords: community based intervention package, maternal mortality, neonatal mortality

14.11**MANAGEMENT OF ANORECTAL MALFORMATION AND ASSOCIATED ANOMALIES ACCORDING TO KRICKENBECK CLASSIFICATION, 10 YEARS OUTCOME FROM SINGLE CENTER.**

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Objective: The study aim to see management and outcomes of anorectal malformations their associated anomalies, their management and long term outcome in tertiary care hospital.

Method: Anorectal anomalies were classified according to krickenbeck classification. Cases included were, all those children with imperforate anus, managed during the last 10 years. We have excluded all those cases born with a primary diagnosis of common cloaca and children that were shifted out from hospital.

Results: There were 49 children in study group 33 males and 16 females. Most common associated anomaly was cardiac (10/26), followed by urological anomalies (9/26). 22% and 21% children had high and low anomaly respectively. Fistula was present in 35/49 (71%) cases. The most common fistula was recto urethral (26%) followed by rectovaginal (20%). Other fistulas are rectovesicular (12%), rectovestibular (8%) and rectocutaneous fistula (2%). There were 14 children had no associated fistula. Children were managed initially by making descending colostomy. 35/49 (71%) of them were later on managed by PSARP, while 9/49 (49%) had offered limited PSARP. Most common complication is anal stenosis i.e. 44%.

Conclusion: Outcome of anorectal malformation is directly related to the severity of disease. There should be uniform approach regarding the management of this disease. Long term follow up should be taken with regular counseling regarding the complication related to surgical management.

Keywords: Neonates, anorectal malformation, long term follow up

14.12**IMPROVING NEWBORN HEALTH IN SOUTH ASIA – LESSONS FROM THE PAST AND FUTURE CHALLENGES**

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Objective: The purpose of this review is to focus on the current health status of the neonates, and a global analysis with an emphasis on the South Asian region. It also proposes recommendations and interventions, at the policy, program and community level.

Method: Search strategy Studies included in this review were first identified by a computerized search without any time limit related to perinatal and neonatal morbidity and mortality. Medline, Cochrane Library, Highwire and Popline computerized databases were searched using the following keywords: perinatal morbidity and mortality, neonatal morbidity and mortality, risk factors for neonatal deaths, predisposing factors, and interventions on

neonatal health. The abstracts of the initial list of identified references were then reviewed to identify a list of articles for further review. The articles were then read and relevant material extracted. Review strategy Articles were selected for review if they dealt with the following criteria: Inclusion Criteria Epidemiological studies. Studies of causes of neonatal mortality such as infection, low birth weight, and birth asphyxia. Interventional studies on neonatal health. Exclusion criteria Publications without an available abstract in the search packages
Conclusion: Conclusion In conclusion, it is evident that despite a plethora of newly validated interventions, the millennium development goals to reduce maternal mortality by three quarters and child mortality by two thirds are unlikely to be achieved. One of the reasons for this is that current safer motherhood and newborn care programs emphasize interventions that do not reach the poor households. Community based interventions have been neglected and undervalued. Large scale community effectiveness trials are both necessary and feasible if we are to make further progress with reducing maternal and child mortality and morbidity. A woman's right to health includes her right to a healthy childbirth and newborn, and the baby possesses his or her own right to life as well. While overall child mortality has declined, 4 million newborns still die each year, primarily in the first days of life. Most could be prevented through existing, cost-effective interventions. Field trials and programs show that low-cost, home- or community-based neonatal care can quickly lead to dramatic decline in neonatal mortality. Newborn health should be integrated with maternal and child health; and these programs should be strengthened and expanded-in order to achieve both the child and maternal survival Millennium Development Goals. Policies and programs should include participatory household and community-based care, with links to the formal health system. Despite recent attention to newborn health, much remains to be done to achieve sustained, high coverage of effective interventions, especially in poor communities where most newborns are born and die, mostly in the first week of life. Recommendations Our review shows ample evidence of neonatal and perinatal mortality and morbidity especially in South Asia. We suggest the following recommendations to improve this situation in developing countries: 1. Interventions are more beneficial if they are targeted at the causes. Identification of risks specific to the areas should be done and interventions that conform to both socioeconomic and cultural norms should be implemented accordingly. 2. Availability and accessibility to health care facilities should be improved with particular emphasis on maternal and neonatal health care facilities. 3. As the health of the newborn infant is inexorably tied to the health of the mother, strategies to improve the health and care of women in low-resource communities and countries can improve both pregnancy and neonatal health outcomes. 4. To combat the maternal factors, there should be regular antenatal visits, provision and education regarding the importance of dietary supplements, such as folic acid and iron and counseling about family planning with emphasis on adequately spacing out children. 5. In developing countries a large number of deliveries are conducted at home by unskilled traditional birth attendants, leading to infections. Awareness programs about the importance and necessity of hygiene should be implemented. 6. There is a need for improvement of neonatal intensive care unit facilities. 7. There is a need for AIDS and GBS prophylaxis. 8. Mothers should also be taught how to take

proper care of the umbilical cord, as umbilical infections are the most frequently infections seen infection in neonates. Moreover the mothers should be counseled about the danger signs of neonatal sepsis and educated about taking timely action. This can prevent deaths due to a delay in health care provision.

Keywords: Neonatal health, neonatal mortality

14.13

DOSE OF PARENTERAL ANTIBIOTIC THERAPY FOR SEVERE COMMUNITY-ACQUIRED PNEUMONIA IN CHILDREN AGED 2 MONTHS TO 59 MONTHS

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Objective: Pneumonia is the leading cause of mortality in children under five years of age. Treatment of pneumonia requires an effective antibiotic used in adequate doses for an appropriate duration. To evaluate the dose of parenteral antibiotic therapy for severe community-acquired pneumonia (CAP) in children aged 2 to 59 months.

Method: We searched the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library) which contains the Cochrane Acute Respiratory Infections Group's Specialized Register and the Database of Abstracts of Reviews of Effects, MEDLINE (OVID) and LILACS. All randomized controlled trials (RCTs) evaluating the dose of parenteral antibiotic therapy for severe CAP in children. Two review authors independently assessed trial quality and extracted the data.

Results: No study was found which matched our objective of comparing different dosages of same antibiotics for the treatment of severe pneumonia in children aged 2-59 months.

Conclusion: The evidence of this review suggests that further trials are required to answer this questions. However according to IMCI 2006 guidelines of WHO, injectable ampicillin plus gentamicin is a better choice than injectable chloramphenicol for very severe pneumonia in children 2-59 months of age. They further recommend that a pre-referral dose of 7.5 mg/kg intramuscular injection gentamicin and 50 mg/kg injection ampicillin can be used.

Keywords: Severe pneumonia , children, parenteral antibiotic

14.16

EFFECTIVE DURATION OF RAPID ACTING BRONCHODILATOR TO RELIEVE BRONCHOCONSTRICTION IN CHILDREN AGED 2-59 MONTHS IN LOW RESOURCE COUNTRIES

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Objective: Approximately 300 million people currently suffer from asthma and as many as 255,000 people died of

asthma in 2005. Over 80% of asthma deaths occur in low and lower-middle income countries. the objective is to evaluate what duration of rapid acting bronchodilator is effective to relieve bronchoconstriction in children aged 2-59 months.

Method: We searched the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library), Pubmed, Science Direct, Lilac, JOLIS, and Google Scholar on April 20, 2010. Two review authors independently assessed trial quality and extracted the data.

Results: We did not find any study that compared different durations of rapid acting bronchodilators for treatment of bronchoconstriction in children aged 2-59 months.

Conclusion: There is a need of RCTs to answer the review question. However, according to WHO IMCI guideline, children with acute bronchoconstriction should be given up to three cycles of nebulizers consisting of 0.5 ml of salbutamol diluted in 2.0ml of sterile water.

Keywords: Bronchodilator, bronchoconstriction, children

14.17

THE RELATIONSHIP BETWEEN STRESS, DEPRESSION, CORTISOL AND PRETERM BIRTH IN WOMEN RESIDING IN KARACHI, PAKISTAN

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Objective: Pakistan has a high prevalence of antenatal depression and preterm birth. Stress and depression have been associated with preterm birth. Cortisol is a biological marker of stress and depression and may help to verify the relationship. We therefore studied the relationship between maternal stress, depression, cortisol level, and preterm birth in pregnant women in Karachi, Pakistan.

Method: In a prospective cohort study pregnant women between 28 to 30 weeks of gestation from the Aga Khan Hospital for Women and Children completed a A-Z Stress Scale and Centre for Epidemiology Studies Depression Scale to assess stress and depression respectively, had a blood cortisol level drawn and followed up at delivery. Correlation coefficients and Wilcoxon rank sum was used to assess relationship between the variables. Logistic regression analysis was used to determine factors predictive of preterm birth.

Results: 187 women were assessed for eligibility of whom 125 pregnant women had both questionnaire and cortisol level data and an additional seven had questionnaire data only. 19.7% (95% CI 13.3-27.5) of the pregnant women experienced a high level of stress and 40.9% (95% CI 32.4-49.8%) experienced depressive symptoms. The median of cortisol level was 27.40 ug/dl (IQR 22.5-34.2). The frequency of preterm birth was 11.4% (95% CI 6.5-18). A significant positive relationship was identified only between maternal depression and stress. If the husband's schooling was intermediate or higher the baby was less likely to be preterm. The probability of preterm birth was

higher if this was not the first pregnancy and if the mother already had a male child at home. Insufficient numbers of preterm births were available to warrant the development of a multivariable logistic regression model.

Conclusion: The rate of stress and depression in pregnant women suggests that pregnant women's psychological health is an important consideration. Further research needs to be undertaken to better understand the psychobiological basis of preterm birth.

Keywords: Stress, Cortisol, Preterm

14.18 URINARY TRACT INFECTION PRESENTING AS JAUNDICE IN NEONATES

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Objective: Neonatal Hyperbilirubemia is common finding during the first postnatal week. Physiological jaundice occurs in first week of life in 60% of term and 80% of premature neonates. Non physiologic or pathologic jaundice occur in 5-10% of newborn which require intervention. According to AAP guidelines laboratory investigation for jaundice include total serum bilirubin, blood Type and coombs test and if the baby have an elevation of direct reacting or conjugated bilirubin should have a urine analysis and urine culture. Here we are presenting 5 cases that developed indirect hyperbilirubinemia and routine workup done according to AAP guidelines came out to be normal. On extensive investigation all cases found to have urinary tract infection despite of having indirect bilirubin and they needed course of antibiotics according to sensitivities and follow up ultrasound. From our experience we suggest that UTI should be considered as a cause of neonatal jaundice especially when indirect bilirubin peak after one week of life.

Keywords: Hyperbilirubemia, Urinary tract infection , Urine culture

14.19 IDIOPATHIC PULMONARY HAEMOSIDROSIS PRESENTING AS SEVERE IRON DEFICIENCY ANEMIA- A CASE FROM PAKISTAN.

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Objective: Idiopathic pulmonary haemosiderosis is an uncommon disorder, which is characterized by iron deficiency, recurrent haemoptysis and diffuse parenchymal infiltration on chest radiograph. We report an 8 year old child who had past history of multiple blood transfusions with diagnosis of iron deficiency anemia and recurrent chest infection since the age of 21/2 year.

At the age of 8 years, the child presented with fever and severe respiratory distress requiring intubation and ventilation. On Chest X-ray was found bilateral white out and CT scan lung showed diffuse alveolar involvement. Lung biopsy confirmed haemosiderin-laden macrophages. Child was put on steroids and despite severe anemia (Hb 3.2 g/dl), he showed improvement and survived. To our knowledge, this is the first case of idiopathic pulmonary haemosiderosis reported from Pakistan. Idiopathic pulmonary haemosiderosis although a rare entity, should be considered in patients with long term iron deficiency anemia and multiple transfusions without any obvious cause. It will prevent unnecessary laboratory analysis and blood transfusion and improve patient's outcome in a timely manner

Keywords: Idiopathic pulmonary hemosiderosis, anemia, Hemoptysis

14.20 NON- COMMUNICATING BENIGN ESOPHAGEAL CYST IN RIGHT PLEURAL CAVITY

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Background: Duplications of the alimentary tract include a variety of cysts, diverticula, and tubular malformation, all believed to have a similar embryologic origin. Oesophageal duplication is a rare presentation and has a reported incidence of 1 in every 8000 live births. The cysts are most commonly found in children and in the majority of patients, the diagnosis is made in infancy.

Report: We report here a case of a 2 ½ year old child presenting with complains of hematemesis. CT angiogram revealed soft tissue density lesion on to the right at the level of T6. Right thoracotomy revealed a gastrointestinal duplication cyst and on the basis of histopathology report, the diagnosis of oesophageal duplication cyst was made. This child rapid recovered after surgical excision of the cyst.

Keywords: Cysts, diverticula, hemoptysis

14.21 REVIEW OF CLEFT PALATE AND CLEFT LIP REPAIR AT THE AGA KHAN UNIVERSITY HOSPITAL.

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Objective: Oral clefts, comprising of cleft lip (CL) and cleft palate (CP), are the second most common entity amongst craniofacial anomalies. Epidemiological studies have revealed that Asian populations have the highest frequency (1 in 500), with Pakistan having a documented incidence of 1 in 700. By doing this study, we aimed to identify the presence of known

associated risk factors, the frequency of different types of cleft lips and palates, median follow-up time, and outcomes of the surgery in patients who had surgical correction at AKUH. *Method:* A retrospective study of 329 patients presenting with oral clefts to Aga Khan University Hospital (AKUH), between 1992 and 2010, was conducted by searching medical records. 292 with complete data were included in our study. A questionnaire, divided into three parts, was used to collect data which included age at presentation, gender, type of cleft, risk factors, surgical details, and follow-up visits at AKUH. *Results:* There was a male predominance in both the cleft lip and palate groups. The most common risk factor was consanguineous marriage of parents. Most common type of oral cleft was midline incomplete CP (47 cases) followed by left sided complete CL (39 cases). Median age of primary lip repair came out to be 4 months and for primary palate repair, 11.5 months. 50% patients presented for first week follow up after CL repair and 20% came for second week follow up. Similarly, 65% of the CP repair patients presented for first week follow up, 16% at 2.5 years and 4% at 5 years. There were 36 cases with post-op complications including breathing problems, bleeding, fever and infection.

Conclusion: Our review revealed abysmally low follow-up rates and consultation by orthodontist and speech therapist. This depicts lack of awareness, healthcare facilities and uniform management protocol in our country. Programs to increase the awareness of general population will contribute towards the reduction of oral clefts and their associated problems.

Keywords: Cleft lip, Cleft palate, Orofacial cleft repair

14.22 FETOMATERNAL OUTCOMES IN WOMEN WITH CARDIAC DISEASE IN PREGNANCY

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Objective: Cardiac disease complicates 0.2% to 3% of pregnancies and is responsible for 10 to 25 % of all maternal deaths. The objective of the study was to assess the fetomaternal outcomes in pregnant women with congenital and acquired cardiac disease. *Method:* This retrospective study was carried out at Aga Khan University hospital from Jan 1999- 2006. *Results:* Our study population comprised a total of 138 pregnant cardiac patients. Majority of them had acquired cardiac disease (77.5%) (n=107) while 22.5% (n=37) of patients had congenital cardiac defect. A higher frequency of women were diagnosed with cardiac disease prior to pregnancy in the congenital than the acquired group, 96.8% vs 90.6%. Similarly a greater percentage of women in the congenital group had cardiac lesion corrected prior to pregnancy than the acquired group, 41.9% vs. 32.7%. Our study showed similarity in the proportion of women undergoing Caesarean section in both the groups, 32.3% vs. 30.7%. However a greater percentage of women in the congenital group underwent instrumental delivery

compared to the acquired group (32.3% vs. 12.9%). Frequency of preterm birth was slightly higher in the acquired group (8.4% vs. 6.5%). A greater proportion of women in the congenital group required admission to cardiac intensive care (9.7% vs 4.7%). Women with a congenital defect had a higher frequency of growth restricted fetuses compared to the acquired group (25.8% vs 18).

Conclusion: Higher proportion of fetomaternal complications were seen in women with congenital cardiac diseases compared to the acquired heart defect group.

Keywords: Cardiac disease, pregnancy

14.23 RISK FACTORS AND MATERNAL OUTCOMES OF HYPERTENSIVE DISEASES IN PRIMIGRAVIDA AT SECONDARY AND TERTIARY CARE HOSPITAL SETTINGS OF KARACHI, PAKISTAN.

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Objective: The objective for this study was to assess the risk factors and outcomes associated with hypertensive disorders in pregnancy (HDP) in primigravida in Aga Khan University Hospital (AKUH) and Aga Khan Hospital Karimabad (AKHK), Karachi, Pakistan.

Method: Data was collected prospectively from November 2006 to March 2008 as part of a larger study of primigravida delivering at the two hospitals. Data was collected through a questionnaire at initial visit and later from the hospital records. Regression techniques were used to calculate odds ratio and risk ratio for the factors associated with HDP and adverse maternal outcomes. *Results:* Out of the 1616 women included in the analysis 72.6% were from AKUH and 27.4% were from AKHK of which 186 (11.5%) had HDP. Women aged 25-29, 30-34 and above 35 years were 1.59 (CI: 1.09-2.31), 2.66 (CI: 1.64-4.32), and 3.25 (CI: 1.44-7.37) times more Likely to have HDP than their younger counterparts (<20 years), and women with co-morbidities were 2.56 (CI: 1.76-3.71) times more at risk of developing HDP. Primigravida with HDP had 29% (RR: 1.29 CI: 1.09-1.54) greater risk of adverse outcomes, similarly women with family history of HDP were 1.29 (CI: 1.09-1.54) times more likely to have adverse outcomes than normotensive women. Each one day increase in hospital stay increased 2% (RR: 1.02 CI: 1.01-1.03) risk of developing adverse outcomes.

Conclusion: Our study indicates that HDP develop more often in older age women. Presence of HDP and family history of hypertension increases both, the hospital stay, and the risk of having adverse maternal outcomes.

Keywords: Pregnancy-induced hypertension, Gestational hypertension, Preeclampsia-Eclampsia

14.24**PRETERM BIRTH: A FACTOR OF POSTPARTUM DEPRESSION AMONG MOTHERS RESIDING IN KARACHI, PAKISTAN**

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Objective: To determine whether there is a: (a) difference in the rate of PPD between mothers of term and preterm infants, and (b) relationship between parental stress and mother-infant interaction and PPD among mothers of preterm infants.

Method: A cohort study design in which purposive sampling was used to recruit 170 mothers of term infants and 34 mothers of preterm infants, from The Aga Khan Hospital for Women and Children Garden and Karimabad. The data were collected using the Edinburgh Postnatal Depression Scale, Parental Stress Scale, Parental Bonding Questionnaire, and a General Questionnaire. A Chi square test was used to determine the differences in the rate of PPD between mothers of term and preterm infants. A Fisher exact test was used to determine whether there was a relationship between parental stress and PPD among mothers of preterm infants.

Results: The rate of PPD was significantly higher in mothers of preterm infants ($p=0.014$). Mothers' age, number of children, reasons of frequent awakening of infant and birth weight of the infants may account for these differences. Significantly more depressed mothers of preterm infants indicated that they did not receive some level of support from their husband ($p=0.03$), had some level of difficulty feeding their preterm infant ($p=0.03$) or had difficulty identifying the amount to feed their infant ($p=0.02$). No relationship was observed between parental stress and PPD and the relationship between mother-infant interaction and PPD was not tested.

Conclusion: The study findings suggest that mothers of preterm infants may be at higher risk for PPD than mothers of term infants; therefore, early intervention could be planned in the form of group teaching sessions which will help mothers develop a friendship network to support with the challenges of caring for her preterm infant. No inferences can be made about the relationship between parenting stress and mother-infant interaction and PPD among mothers of preterm infants.

Keywords: Postpartum depression, mother infant interaction, preterm

14.25**NON-TRAUMATIC COMA IN PAEDIATRIC PATIENTS: ETIOLOGY AND PREDICTORS OF OUTCOME**

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Objective: Non traumatic coma in children is a common cause of admission in paediatric emergency department and is reported to carry a high morbidity and mortality. Outcomes of coma is also difficult to predict early in the course of illness and despite

its prevalence and associated poor outcomes, little information is available from the literature especially from developing countries. This study determines the common etiological features of non-traumatic coma in children and evaluate possible predictors of morbidity and mortality in these patients.

Method: A cross sectional study was carried out at the Paediatric Department of Civil Hospital Karachi from February 2008 to February 2009. In total 100 children, up to 14 years of age having history of non-traumatic coma were included. At the time of enrolment demographic data, clinical features, laboratory parameters and radiological workup were recorded. Data was entered and analyzed with SPSS version 16. Descriptive statistics were generated for all variables. Relationships between categorical variables were evaluated by examining cross-tabulations, X2 test and Fisher's exact tests. P-values < 0.05 were considered statistically significant.

Results: Mean age of the patients in months were 45 months. Male female ratio was 1.45:1. Among 65 survivors 38 (58%) showed no disability and 27 (41%) showed disability. Infections emerged as major cause of mortality ($n=23$, 79%). Clinical features that showed association with mortality included hypothermia ($P=0.032$), hypotension ($P=0.002$), altered breathing pattern ($P=0.0001$), non reactive pupils ($P=0.001$), low Glasgow coma scale (GCS) ($P=0.038$), hypotonia ($P=0.002$), hyporeflexia ($P=0.0001$) and muscle power score of two ($P=0.043$).

Conclusion: Infections were the leading cause of non-traumatic coma as well as the leading cause of mortality in our study. Hypothermia, hypotension, altered breathing pattern, non reactive pupils, low GCS, hypotonia, hyporeflexia and low muscle power score were significantly associated with mortality in children presenting with non-traumatic coma.

Keywords: Non-traumatic coma, child, mortality

14.26**NEED TO RAISE BREAST CANCER AND SELF-BREAST EXAMINATION AWARENESS AMONG YOUNG PEOPLE OF KARACHI, PAKISTAN**

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Objective: Unfortunately Pakistan is among one of the Asian countries which reports death rates up to 40,000 per year due to breast cancer. More over one out of every 9th Pakistani women is suffering from this disease. This is alarming situation which needs to be monitored, prevented and treated early. We conducted this study to assess the understanding and practices of self-breast examination, breast cancer and its risk factors according to the educational background of adolescent female students of Karachi, Pakistan.

Method: In 2010 trained researchers interviewed 380 young females at a public and a private institute. Data regarding information on breast cancer and its causative factors along with self-breast examination was collected. Sources of information and fears behind not having proper assessment were also inquired. SPSSv.19 was used for data management and Chi-square was calculated to assess association with educational background.

Results: Most 184(48%) of the participants were between 19-20 years of age. Almost half, 178(47%) were science students

and 202(53%) from arts or commerce sections. Most, 131(74%) of science and 133(66%) of non-science students had information regarding breast cancer. Of the sample, 82(58%) science and 60(42%) none-science students subjectively knew of self-breast examination. Age ($p=0.004$), academic grade ($p=0.001$), knowledge of self-breast examination ($p=0.003$), awareness of mammography ($p=0.0001$), family history ($p=0.05$) had significant relation to educational background. It also influenced their knowledge of causative factors such as tight clothing ($p=0.04$), hard blow to the breast ($p=0.0001$), late motherhood ($p=0.02$), mothers in late 20s and early 30s ($p=0.008$) and influence of evil eye ($p=0.0001$)

Conclusion: We found that both science and non-science students have misinformation about breast cancer. Level of cognizance can still improve. Self-breast examination needs to be promoted. Magazines and non-course books were the main source of information.

Keywords: Breast Cancer, Self examination

14.27

SEVERE COMBINED IMMUNODEFICIENCY IN PAKISTAN: A CASE SERIES OF THIRTEEN INFANTS

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Objective: Severe combined immune deficiency (SCID) is a rare genetic disorder of the immune system. It is universally fatal if left untreated but is curable if treated early with hematopoietic stem cell transplantation (HSCT), especially before 4 months of life.

Method: We are reporting 13 infants who were discharged during July 2006 – July 2011 with diagnosis of SCID at our tertiary care center.

Results: Median age of diagnosis was five months; five infants presented within 3 months of life. Three fourth (77%) were males. Most of the infants were severely malnourished (85%) at the time of presentation. More than two third (69%) infants' parent had consanguineous marriage. All subject had severe lymphopenia (absolute lymphocyte count (ALC) ranging between 170 – 2280) and low T and B lymphocyte counts. HIV status was found negative among those who were checked. No patient received HSCT.

Conclusion: SCID is not an uncommon condition in Pakistan. Early diagnosis could save lives. Low ALC ($<2500 /\text{mm}^3$), which can be easily calculated through routine blood count, is a sensitive and specific screening test for SCID. Physicians should consider the possibility of SCID in infants presenting with severe and recurrent infection. If identified, these infants should be promptly referred to a facility where stem cell transplant can be done.

Keywords: Severe combined deficiency, absolute lymphocyte

14.28

THE EFFECT OF COMMUNITY HEALTH EDUCATIONAL INTERVENTIONS ON NEWBORN SURVIVAL IN DEVELOPING COUNTRIES

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Objective: In the developing world, health services is underutilized and several studies have reported improvements in neonatal outcomes following health education imparted to mothers, either in homes, at health units or in hospitals. However, the evaluation of any health educational strategy, such as one-to-one counselling or group counselling via peer or support groups, through the organization of men or women's groups, or delivered by health professionals, requires rigorous assessment of methodological design and quality, as well as an assessment of cost-effectiveness, affordability, sustainability and reproducibility in diverse health systems.

Method: Community-based (home, Basic Health Unit (BHU) or first level health facility) randomized controlled, cluster-randomized or quasi-randomized controlled trials. Data collection and analysis: Two review authors independently assessed trial quality and extracted the data.

Results: We found twenty five (eighteen original) eligible studies for this review. Our analysis showed that community health education interventions had a significant impact on reducing overall neonatal mortality by 28% (RR 0.72; 95% CI:0.64-0.82, random-effects (12 studies, $n=119,143$), I^2 70%, p value <0.001), early neonatal deaths by 30% (RR 0.70; 95% CI:0.61-0.80, random-effects (7 studies, $n=92,405$), I^2 75%, p value 0.0002) and late neonatal mortality by 22% (RR 0.78; 95% CI:0.67-0.9, fixed-effects (7 studies, $n=92,405$), I^2 0%, p value 0.55). It also showed a significant impact on reducing perinatal mortality by 25% (RR 0.75; 95% CI: 0.66-0.85, random-effects (6 studies, $n=89,655$), I^2 90%, p value <0.001). Moreover, community health educational interventions increased utilization of any antenatal care during pregnancy by 21% (RR 1.21; 95% CI:1.12-1.30, random-effects (7 studies, $n=65,543$), I^2 60%, p value 0.01); utilization of clean delivery kits by 2 folds (RR 2.62; 95% CI:1.42-4.84, random-effects (4 studies, $n=58,913$), I^2 92%, p value <0.001); and initiation of breastfeeding by 87% (RR 1.87; 95% CI:1.50-2.31, random-effects (6 studies, $n=22,329$), I^2 99%, p value <0.001). On the other hand, it had a non-significant impact on the use of modern contraceptives (RR 0.98; 95% CI:0.82-1.17, fixed-effects (1 study, $n=856$), I^2 0%, p value 0.42); presence of skilled birth attendance at birth (RR 1.20; 95% CI: 0.93-1.53, random-effects (5 studies, $n=63,786$), I^2 68%, p value 0.008); health care seeking for neonatal morbidity (RR 1.04; 95% CI:0.78-1.39, random-effects (10 studies, $n=62,591$), I^2 83%, p value <0.001). On subgroup analysis, we found that education intervention provided to women during both antenatal and postnatal period had an impact on reducing neonatal mortality by 34% (RR 0.66; 95% CI: 0.56-0.77, random-effects (8 studies, $n=77,189$), I^2 75%, p value <0.001). Similarly, when strategy involved imparting education through both one-to-one and group sessions reduced overall mortality by 41% (RR 0.59; 95% CI:0.46-0.76, random-effects (8 studies, $n=42,432$), I^2 83%, p value <0.001), early neonatal mortality by 33% (RR 0.67; 95% CI: 0.56-0.81, random-effects (4 studies,

n=38,284), I² 79%, p value 0.0008), and perinatal mortality by 29% (RR 0.71; 95% CI: 0.0.64-0.78, random-effects (4 studies, n=39,928, I² 67%, p value 0.02). This also increased skilled birth attendance at birth by 27% (RR 1.27; 95% CI: 1.06-1.51, random-effects (2 studies, n=4,369), I² 0%, p value 0.80), and initiation of early breastfeeding by 145% (RR 2.45; 95% CI: 1.81-3.31, random-effects (3 studies, n=9,568), I² 98%, p value <0.001).

Conclusion: We believe that our review offers encouraging evidence of the value of integrating educational interventions in community settings for improved neonatal survival through a range of community workers.

Keywords: Newborn survival, community interventions, health education

14.29

EFFECTIVE MECHANISM OF RAPID ACTING BRONCHODILATOR TO RELIEVE BRONCHOCONSTRICTION IN CHILDREN AGED 2-59 MONTHS IN LOW RESOURCE COUNTRIES

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Objective: Background: Approximately 300 million people currently suffer from asthma and as many as 255,000 people died of asthma in 2005. Over 80% of asthma deaths occur in low and lower-middle income countries. Objectives: To evaluate what is the effectiveness mechanism of delivering rapid acting bronchodilator to relieve bronchoconstriction in children aged 2-59 months.

Method: We searched the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library), Pubmed, Science Direct, Lilac, JOLIS, and Google Scholar on April 20, 2010. All randomized controlled trials (RCTs). Two review authors independently assessed trial quality and extracted the data. **Results:** We found seven studies that attempted to find the effective mechanism of delivery of inhaled bronchodilator. Five studies found that two modes of delivery were equally effective in terms of improvement in symptom scores. However, two trials favored MDI delivered salbutamol with spacer compared to nebulizer.

Conclusion: Two studies favored delivering salbutamol with MDI and spacer over nebulizer. However, more studies are required to test the mechanism

Keywords: Bronchodilator, children, asthma

14.30

EFFECTIVENESS OF ORAL ANTIBIOTIC THERAPY FOR SEVERE COMMUNITY-ACQUIRED PNEUMONIA IN CHILDREN AGED 2 MONTHS TO 59 MONTHS

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Objective: Pneumonia is the leading cause of mortality in children under five years of age. Treatment of pneumonia requires an effective antibiotic used in adequate doses for an appropriate duration.

Objectives: To evaluate the dose of oral antibiotic therapy for severe community-acquired pneumonia (CAP) in children aged 2 to 59 months.

Method: We searched the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library) which contains the Cochrane Acute Respiratory Infections Group's Specialized Register and the Database of Abstracts of Reviews of Effects, MEDLINE (OVID) and LILACS. All randomized controlled trials (RCTs) evaluating the dose of oral antibiotic therapy for severe CAP in children. Two review authors independently assessed trial quality and extracted the data.

Results: We found one study from Pakistan by Straus et al, which included children with severe pneumonia and compared oral co-trimoxazole with amoxicillin. The results showed that treatment failure was significantly higher (79%) in co-trimoxazole group compared to amoxicillin therefore suggesting amoxicillin as a better alternative to co-trimoxazole for severe pneumonia. **Conclusion:** The evidence of this review suggests that oral amoxicillin therapy is favorable choice for children with severe pneumonia. However, further trials are required to answer this question.

Keywords: community acquired pneumonia, antibiotic therapy, children

14.31

FETOMATERNAL OUTCOMES IN WOMEN WITH CARDIAC DISEASE IN PREGNANCY

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Objective: Introduction Cardiac disease complicates 0.2% to 3% of pregnancies and is responsible for 10 to 25 %of all maternal deaths. The objective of the study was to assess the fetomaternal outcomes in pregnant women with congenital and acquired cardiac disease.

Method: Methodology This retrospective study was carried out at Aga Khan University hospital from Jan 1999- 2006. **Results:** Results Our study population comprised a total of 138 pregnant cardiac patients. Majority of them had acquired cardiac disease(77.5%) (n=107)while 22.5% (n=37) of patients had congenital cardiac defect. A higher frequency of women were diagnosed with cardiac disease prior to pregnancy in the congenital than the acquired group,96.8% vs 90.6%. Similarly a greater percentage of women in the congenital group had cardiac lesion corrected prior to pregnancy than the acquired group, 41.9% vs. 32.7%. Our study showed similarity in the proportion of women undergoing Caesarean section in both the groups,32.3% vs. 30.7%. However a greater percentage of women in the congenital group underwent instrumental delivery compared to the acquired group (32.3% vs. 12.9%). Frequency of preterm birth was slightly higher in the acquired group (8.4% vs. 6.5%). A greater proportion of women in the congenital group required admission to cardiac intensive care(9.7% vs 4.7%). Women with a congenital defect had a higher frequency of growth restricted fetuses compared to the acquired group (25.8% vs 18).

Conclusion: Conclusion : Higher proportion of fetomaternal complications were seen in women with congenial cardiac diseases compared to the acquired heart defect group.

Keywords: Pregnancy, cardiac disease

14.34

EMPOWERING COMMUNITIES FOR MATERNAL AND NEWBORN HEALTH

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Objective: Several large-scale trials in south Asia have evaluated the role of community support and advocacy groups. Objectives: To assess the effectiveness of community support and advocacy groups in improving maternal and neonatal health outcomes. **Method:** Search strategy: We searched The Cochrane Pregnancy and Childbirth Group's Trials Register (January 2010), World Bank's JOLIS (12 January 2010), BLDS at IDS and IDEAS database of unpublished working papers (12 January 2010), Google and Google Scholar (12 January 2010). Selection criteria: All prospective randomized and quasi-experimental trials evaluating the effectiveness of community support and advocacy groups in improving maternal and neonatal health outcomes. Data collection and analysis: Two review authors independently assessed trial quality and extracted the data.

Results: The review included 6 cluster-randomized/quasi-randomized trials. We incorporated data from these trials using generic inverse variance method in which logarithms of risk ratio estimates were used along with the standard error of the logarithms of risk ratio estimates. None of the recent studies of community strategies were powered for maternal mortality outcomes. However, significant reduction was observed in neonatal mortality (RR 0.70; 95% CI 0.61 to 0.81, random-effects (6 studies), I^2 47%, P value 0.009). It also increased health care seeking for neonatal morbidity (RR 1.62; 95% CI 0.96 to 2.73, random-effect (four studies), I^2 91%, P value <0.001) and improved the rates of early breastfeeding (RR 2.06; 95% CI 1.15 to 3.69, random-effects (five studies), I^2 96%, P value < 0.001).

Conclusion: These evidence based greatly add to the global evidence base of intervention and delivery strategies that might improve maternal and newborn outcomes

Keywords: empowerment, community, maternal child health

14.35

FLUOROQUINOLONES FOR TREATING TYPHOID AND PARATYPHOID FEVER (ENTERIC FEVER)

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Objective: Typhoid and Paratyphoid are febrile illnesses, due to a bacterial infection, which remain common in many low and middle income countries. WHO currently recommends the fluoroquinolones in areas with known resistance to the older first-line antibiotics. **Objective:** To evaluate fluoroquinolone antibiotics for treating children and adults with enteric fever. **Method:** Search methods: We searched The Cochrane Infectious Disease Group Specialized Register (February 2011); Cochrane Central Register of Controlled Trials (CENTRAL), published

in The Cochrane Library (2011, Issue 2); MEDLINE (1966 to February 2011); EMBASE (1974 to February 2011); and LILACS (1982 to February 2011). We also searched the metaRegister of Controlled Trials (mRCT) in February 2011. Selection criteria: Randomised controlled trials examining fluoroquinolone antibiotics, in people with blood, stool or bone marrow culture-confirmed enteric fever. Data collection and analysis: Two authors independently assessed the trial's methodological quality and extracted data. We calculated risk ratios (RR) for dichotomous data and mean difference for continuous data with 95% confidence intervals (CI). Comparative effectiveness has been interpreted in the context of; length of treatment, dose, year of study, known levels of antibiotic resistance, or proxy measures of resistance such as the failure rate in the comparator arm.

Results: Twenty-six studies, involving 3033 patients, are included in this review. Fluoroquinolones versus older antibiotics (chloramphenicol, co-trimoxazole, amoxicillin and ampicillin). In one study from Pakistan in 2003/04, high clinical failure rates were seen with both chloramphenicol and co-trimoxazole, although resistance was not confirmed microbiologically. A seven day course of either ciprofloxacin or ofloxacin were found to be superior. Older studies of these comparisons failed to show a difference (6 trials, 361 participants). In small studies conducted almost two decades ago, the fluoroquinolones were demonstrated to have fewer clinical failures than ampicillin and amoxicillin (2 trials, 90 participants, RR 0.11, 95% CI 0.02 to 0.57). Fluoroquinolones versus current second-line options (ceftriaxone, cefalexin, and azithromycin) The two studies comparing a seven day course of oral fluoroquinolones with three days of intravenous ceftriaxone were too small to detect important differences between antibiotics should they exist (2 trials, 89 participants). In Pakistan in 2003/04, no clinical or microbiological failures were seen with seven days of either ciprofloxacin, ofloxacin or cefixime (1 trial, 139 participants). In Nepal in 2005, gatifloxacin reduced clinical failure and relapse compared to cefixime, despite a high prevalence of NaR in the study population (1 trial, 158 participants, RR 0.04, 95% CI 0.01 to 0.31). Compared to a seven day course of azithromycin, a seven day course of ofloxacin had a higher rate of clinical failures in populations with both MDR and NaR enteric fever in Vietnam in 1998-2002 (2 trials, 213 participants, RR 2.20, 95% CI 1.23 to 3.94). However, a more recent study from Vietnam in 2004/05, detected no difference between gatifloxacin and azithromycin with both drugs performing well (1 trial, 287 participants). **Conclusion:** There is currently insufficient data to draw any firm general conclusions on the comparative effectiveness of fluoroquinolones and other non fluoroquinolone antibiotics. Policy makers and clinicians need to consider local resistance patterns in choosing a fluoroquinolone. There is some evidence that the newest fluoroquinolone, gatifloxacin, remains effective in some regions where resistance to older fluoroquinolones has developed. However the different fluoroquinolones have not been compared directly in trials in these settings.

Keywords: Typhoid, enteric fever

14.36**FOLATE SUPPLEMENTATION DURING PREGNANCY**

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Objective: During pregnancy, fetal growth causes an increase in the total number of rapidly dividing cells, which leads to increased requirements for folate. Inadequate folate intake leads to a decrease in serum folate concentration, resulting in a decrease in erythrocyte folate concentration, a rise in homocysteine concentration, and megaloblastic changes in the bone marrow and other tissues with rapidly dividing cells **Objective:** To assess the effectiveness of oral folate supplementation during pregnancy on hematological and biochemical parameters during pregnancy and on pregnancy outcomes.

Method: Search methods: We searched the Cochrane Pregnancy and Childbirth Group's trials register (June 2011). Selection criteria: All randomized Controlled trials (RCTs) evaluating supplementation of folate in pregnancy. Data collection and analysis: Two review authors independently assessed trial quality and extracted the data.

Results: Thirty seven trials are included in this review. This review found that folate supplementation has no impact on pregnancy outcomes, as well as, on biochemical /hematological parameters. However, it showed an improvement in reducing the incidence of megaloblastic anemia (RR=0.21, 95%CI: 0.11-0.38, 4 studies, fixed effects, n=3839) and improving the mean pre-delivery serum folate levels (SMD= 2.03, 95% CI: 0.8-3.27, 8 studies, random effect, n = 1250).

Conclusion: We found no conclusive evidence of benefit of folate supplementation during pregnancy on pregnancy outcomes from time of booking onwards.

Keywords: folate, pregnancy

14.37**PREVALENCE OF URINARY, FECAL INCONTINENCE AND UTERO-VAGINAL PROLAPSED IN WOMEN IN RURAL PAKISTAN: THE COMPREHENSIVE UFIUVP SURVEY.**

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Objective: Urinary Incontinence (UI) is common in women but how common incontinence occurs has been rarely investigated in developing countries including Pakistan. None of the studies on prevalence of Fecal Incontinence (FI) is seen and the epidemiology of Utero-vaginal Prolapse (UP) unknown. This first time population based study conducted on women aged 15 years and above describes the prevalence of urinary and fecal incontinence and the prevalence of utero-vaginal prolapse verified by physical examination. **Objectives:** To ascertain the prevalence of UI, FI and UP individually or collectively in women in rural Pakistan.

Method: Women were selected from rural population Pakistan in a multistage random sampling study. A structured questionnaire on medical background with urinary, fecal and utero-vaginal prolapse signs and symptoms was administered to a sample of 5064 women aged 15 and above years by conducting interviews to collect data. Identified cases with positive signs and symptoms were followed and verified by physical examination conducted by female medical doctors.

Results: With 95.8 % response rate: the prevalence of UI was found 11.5% (95% CI, 10.60-12.35), incontinent for fecal was 0.7% (95% CI, 0.43-0.87) and utero-vaginal prolapse was 12.1% (95% CI, 11.20-13.00). Women having UI and UP were 3% (95% CI, 2.51-3.45), cases having UI and FI were 0.21% (95% CI, 0.90-0.34) and cases with UI, FI and UP were 0.07% (95% CI, 0.001-0.15).

Conclusion: Urinary incontinence and utero-vaginal prolapse are common in women in this population. Appropriate measures are required to prevent and treat these disabling conditions meeting the health care needs of women.

Keywords: Urinary Incontinence, Fecal Incontinence, Utero-vaginal Prolapse

14.38**PREVALENCE OF URINARY INCONTINENCE IN WOMEN, ASSOCIATED FACTORS AND IMPACT ON THEIR QUALITY OF LIFE IN RURAL PAKISTAN: THE COMPREHENSIVE UFIUVP SURVEY**

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Objective: Urinary incontinence (UI) is a major worldwide public health problem affecting young and as well as older women across different cultures and races. Less is known about UI and the impact on quality of women's life in general population in developing countries including Pakistan. **Objectives:** ascertain the prevalence and types of UI and associated factors in women in rural Pakistan and assess their impact on women's quality of life.

Method: In a cross-sectional multistage random sampling study an interview based structured questionnaire was used to collect data, followed and verified by physical examination. Subjects were women aged 15 and above years living in the rural areas. The UI was classified as "urge," "stress," "mixed," "overflow," and "frank or total". Variables affecting life such as leakage bothers; leakage interferes in life and doctor consulting also assessed.

Results: The prevalence of UI was found 11.5% (95% CI 10.60-12.35), highest (52.2%) type was urge incontinence and 30% was mixed type incontinence. The majority of cases 22.0% were found in women of the age between 36-40 years and the highest cases (70.0%) were with Para 4-6 or above. Cases 45% of women their quality of life affected moderately or greatly due to UI, 27.2% had the condition more than 5 years and overall 84.3% never bothered to get check-up by a doctor.

Conclusion: UI is prevalent in women across their adult life span and its severity increases with age and parity. Appropriate

measures are required to prevent and treat disabling condition meeting the health needs of women.

Keywords: Urinary Incontinence, Prevalence, Epidemiology

14.39

PREVALENCE OF UTERO-VAGINAL PROLAPSE IN WOMEN, ASSOCIATED FACTORS AND IMPACT ON QUALITY OF LIFE IN RURAL PAKISTAN: THE COMPREHENSIVE UFIUVP SURVEY

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Objective: Prevalence studies of utero-vaginal prolapse in general population are rare particularly in developing countries and never in Pakistan. Objectives of this study were to determine prevalence of utero-vaginal prolapse and associated factors with impact on women's quality of life.

Method: Through cross-sectional approach three-level multistage random sample of 5064 non pregnant women aged 15 years and above living in rural area selected over a period of one year. Interview based structured questionnaire was used to collect data by female health workers, followed and verified by pelvic examination. Outcome measures were uterine prolapse, levels of prolapse and associated variables such as age and parity. *Results:* Prevalence of utero-vaginal prolapse was 12.1% (95% CI 11.2-13.00). 42.5% of cases had 1st stage, 30.7% had 2nd stage and 26.8% had 3rd degree prolapse. The highest rate (23.2%) of prolapse was found in the age between 36-40 years, 30% were found among women below 30 up to 15 years of age and the highest rate (40.8%) found in women with Para 4-6 children. Cases 48% of women their quality of life affected moderately or greatly, 44.1% had the condition more than 5 years and overall 80% never bothered to get check-up by a doctor.

Conclusion: We found a high prevalence of utero-vaginal prolapse in women of adult age having given birth to Para 1 to 3 and up to 6 children. There are needs for further investigations with special focus on early age and women having less number of children along with appropriate measures for early treatment.

Keywords: Utero-vaginal prolapse, Prevalence, Epidemiology

14.40

PREVALENCE OF OBSTETRIC URINARY FISTULA IN RURAL PAKISTAN: THE COMPREHENSIVE UFIUVP SURVEY

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Objective: Over 2 million women worldwide have an obstetric fistula with majority of cases occurring in low-income countries.

This is a public health problem and occurs due to an injury to the pelvic organs when a women experiences long and obstructed labour. The incidence or prevalence in developing countries is not known and most of the estimates are from facility based data. Prevalence of fistula is needed population based methods of collection of data to plan adequately for provision of appropriate services and to monitor progress. Objective: estimate the prevalence of obstetric fistula and associated factors in rural Pakistan.

Method: A community based cross-sectional survey was conducted in rural Pakistan recruiting 5064 women aged 15 and above years using a multistage random sampling strategy. Interview based structured questionnaire was used to collect data, followed and verified by physical examination to identify fistula cases.

Results: The prevalence of obstetric urinary fistula was 5 per 1000 women (95% CI 0.27-0.64). The majority of cases 30.0% were found in women of the age between 15-20 years and the highest cases (37.5%) were with Para 1-3. Cases 83.3% of women were belong to low socio-economic class. Cases 20.8% had the condition for 5-10 years, 16.7% had 10-20 years. Overall 80% of cases never bothered to get check-up by a doctor for repair.

Conclusion: Obstetric fistula remains a major problem in rural Pakistan. Increased awareness of the condition, improvement of maternal care services, and increase in skilled personnel to perform fistula repair needed to reduce burden of this condition.

Keywords: Obstetric fistula, Prevalence, Pakistan

14.41

GLOBAL EXPERIENCE OF COMMUNITY HEALTH WORKERS FOR DELIVERY OF HEALTH RELATED MILLENNIUM DEVELOPMENT GOALS: A SYSTEMATIC REVIEW, COUNTRY CASE STUDIES, AND RECOMMENDATIONS FOR INTEGRATION INTO NATIONAL HEALTH SYSTEMS

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Objective: Human resources for health crisis is one of the factors underlying the poor performance of health systems to deliver effective, evidence-based interventions for priority health problems, and this crisis is more critical in developing countries. Participation of community health workers (CHWs) in the provision of primary health care has been experienced all over the world for several decades, and there is an amount of evidence showing that they can add significantly to the efforts of improving the health of the population, particularly in those settings with the highest shortage of motivated and capable health professionals. *Method:* For the systematic review, a comprehensive search of studies was performed in several data sources, without language restrictions, focusing on studies performed in developing countries. Eligible studies included randomized, quasi-randomized and before/after trials which had relied upon CHWs in community settings. Studies were included if (a) they detailed the role of CHWs and (b) if the outcomes considered are those related to reaching the health and nutrition MDGs like child

mortality, maternal mortality, combating HIV/AIDS, TB, malaria, among other target health problems. The main comparison was between CHW interventions compared to no intervention or routine care; or one form of CHW intervention compared with another form. For country case studies, a review of published and unpublished reports was conducted on specific country experiences with CHWs, and also a direct contact with key personnel overseeing the program was made through electronic correspondence and country visits. Following the assembly of information from multiple sources, a USAID supported CHW Program Functionality Assessment Tool (CHW-PFA) was utilized to assess the functionality of the CHW programs across these countries. The CHW-PFA proposes twelve programmatic components for a CHW program to be effective. *Results:* The review of CHWs across the globe provided us an interesting and diverse picture of the current scenario in outreach services of health care workers. There is a wide range of services offered by the CHWs to the community, ranging from provision of safe delivery, counseling on breast-feeding, management of uncomplicated childhood illnesses, from preventive health education on malaria, TB, HIV/AIDS, STDs and NCDs to their treatment and rehabilitation of people suffering from common mental health problems. The services offered by CHWs have helped in the decline of maternal and child mortality rates and have also assisted in decreasing the burden and costs of TB and malaria. However, the coverage by such programs and the overall progress towards achieving the MDG targets is very slow. The growing consensus regarding this current pace of progress, especially in the low-income countries, is that it relates to fragile health and economic systems. Country case studies identified a wide range of CHW programs with different mix of CHW typology. For example, Uganda Village Health Teams program has short duration of training with preventive and basic curative tasks for CHWs, with a relatively strong supervision system, and within a weak health system, while, on the other hand, Pakistan's Lady Health Workers (LHW) Program has long duration training programs, with promotional, preventive and basic curative tasks for CHWs, with a relatively strong supervision system, and within a relatively weak health system. These country case studies demonstrate the participation of the respective governments and the NGOs in financing and implementation of their policies for the CHW programs. Results confirm that CHWs provide a critical link between their communities and the health and social services system. Communities across all the countries that we studied recognized the value of CHWs as a member of the health delivery team and therefore have supported the utilization and skill development of CHWs. These case studies further speak out the achievements of their CHW programs in relation to their modeling and level of commitment from their human resource. The region lagging far behind the MDG targets is Africa especially the Sub-Saharan Africa. Various factors have been identified to be responsible. These include inadequate human resource especially work force who are dying with HIV/AIDS and poor remuneration for their work leading to high drop outs, lack of supervision, and equipment and drug supplies needed to provide essential maternal, child and reproductive health services and those required to control and treat potentially preventable infectious diseases. *Conclusion:* Based on the review and the gaps identified in the existing CHW programs and the services rendered, various recommendations are made regarding their recruitment criteria, training content, certification process, ongoing and refresher training, supervision, incentives and professional advancement.

Keywords: Integration, community health workers

14.42 ANESTHETIC MANAGEMENT OF UNCONTROLLED HYPERTHYROID PARTURANT UNDERGOING LSCS.

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Objective: 21-year-old patient, who was a known case of hyperthyroidism, was scheduled for LSCS at 34 weeks due to IUGR.

Method: Anesthetic management: The case was conducted in epidural anesthesia with invasive arterial pressure monitoring, and the procedure remained uneventful.

Conclusion: She was shifted to the recovery room for observation. She was initially hypertensive but was settled with Propranolol. She was kept under observation for the next 24 hours though the course of recovery remained smooth and the symptoms of thyroid storm did not develop. She was shifted to I/V analgesia after 24 hours.

Keywords: Hyperthyroidism, Epidural Anesthesia., Elective LSCS for IUGR

14.45 SYSTEMATIC REVIEW ON HUMAN RESOURCES FOR HEALTH INTERVENTIONS TO IMPROVE MATERNAL HEALTH OUTCOMES: EVIDENCE FROM DEVELOPING COUNTRIES

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Objective: There is a broad consensus and evidence which shows that qualified, accessible and responsive human resources for health make a difference in the health of populations. At the same time there is recognition that there are widespread HRH crises particularly in low- and middle-income countries, which impedes the achievement of health goals and targets. The impact of this crisis is even more explicit when discussing achievement of Millennium Development Goal (MDG) 4 and 5, where MDG 5 considers the availability of skilled birth attendants as a precondition to the reduction of maternal mortality. The objective of this review was to review the evidence base on the impact derived from studies and implementation experiences of HRH interventions to health personnel only, defined as SBAs (nurses, midwives, doctors or health personnel with midwifery skills) for better maternal outcomes and based on the review, the identification of lessons learned, gaps and recommendation for HRH development for improved maternal outcomes. *Method:* This literature review focused on interventions delivered by SBAs and did not include interventions provided by Traditional Birth Attendants (TBAs) or Community Health Workers (CHWs). The evidence was derived from experimental designs and evaluations of SBAs at national, provincial, district and community level (home, community or referral facility interventions) settings. We thus identified and reviewed randomized, quasi-randomized and before/after trials which had relied upon SBAs in low- and middle-income countries. Studies were included if (a) any HRH interventions in management system e.g. policy, finance, education, partnership and leadership was implemented; (b) these were related to skilled birth attendants; and (c) the studies were conducted in developing countries; and (d) studies were in English. Studies were excluded if TBAs and/or CHWs were trained.

Results: Our review embarked to explore how HRH interventions lead to improved maternal health outcomes. Our findings, although mostly from training interventions, showed that HRM interventions can contribute positively to health worker's performance and improved maternal outcome. The review of 83 studies revealed certain reasons why maternal mortality is still high in developing countries despite the efforts and policies implemented throughout these years. It is observed that in many developing countries some components of the HRH management intervention are applied with positive effects on the maternal mortality and health care delivery to the rural areas. Increasing the availability of skilled health care professionals in these areas has decreased case fatality rate significantly. Some countries have also started training surgical technicians and assistant medical officers to deal with the human force crisis and have managed to retain them in the rural areas where there is shortage of health workers. Efforts have also been made to provide drugs, equipments and other supplies to the health facilities to improve the emergency obstetric care in rural areas. We observed that the implementation of these components at all levels improved maternal health and decreased maternal mortality in all the countries. We also observed that combining the various components of HRH management system significantly decreases CFR. Thus we see that increasing the number of skilled health workers, training and educating them with proper supervision management and retention by providing them with facilities and incentives and improving the infrastructure with supply of equipments is what needs to be done in all the developing countries to achieve the MDG 5.

Conclusion: This review suggested an urgent and immediate need for formative evidence based research on effective HR interventions for improved maternal health in low and middle income countries. The studies showed that all the HRH interventions which were implemented individually or in combination had a positive impact on the maternal mortality and significant decrease in crude fatality rate was observed in many countries. We also found that strategy implementation alone is not enough to bring about this change, other steps like educating and empowering women, alleviating poverty, establishing gender equality and providing infrastructure, equipments drugs and supplies, are all integral parts working towards the achievement of MDG 5 and reducing maternal mortality. Time, efforts and money can be invested towards training of assistant medical officers to do emergency obstetric surgeries and fill the human resources gap in most of the developing countries as the implementation of this intervention has clearly shown to affect the health system positively in the areas of Tanzania and Mozambique. All the leaders from clinical, political and social areas are required to work together as a team to construct new models of health care which would suit to the needs of the countries individually.

Keywords: health interventions, maternal health

14.46

UNFOLDING NEWBORN HEALTH INTERVENTIONS: THE ROLE OF INNOVATIVE COMMUNITY-BASED STRATEGIES

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Objective: Globally, an estimated 3.6 million newborns and 360,000 mothers die every year. Of these, maternal health complications contribute to 1.5 million of neonatal deaths in the first week of life and 1.4 million stillbirths, suggesting a major gap of intervention subsists around childbirth and in the early postnatal period, a time when mothers and babies are most at risk. The main direct causes of neonatal death include asphyxia, preterm birth and severe infections including sepsis, pneumonia, diarrhea, and tetanus. Low birth weight according to World Health Organization estimates of 2009, sub-Saharan Africa and south Asia bear the greatest burden with 80 percent of all neonatal deaths occurring in these two regions alone. Global progress in reducing neonatal mortality has been slow and the burden is particularly marked in poor, rural communities that are the most difficult to reach and among the disadvantaged with the lowest access to and utilization of facility based services for childbirth and newborn care.

Method: To analyze the evidence of the impact of community-based interventions on newborn health outcomes. We searched The Cochrane Pregnancy and Childbirth Group's Trials Register, Popline, IDEAS database of unpublished working papers, Google and Google Scholar (March 2011). All prospective randomized and quasi-experimental trials meeting the objective were selected. Two review authors independently assessed trial quality and extracted the data.

Results: The review included 19 cluster-randomized/quasi-randomized trials. We incorporated data from these trials using generic inverse variance method in which logarithms of risk ratio estimates were used along with the standard error of the logarithms of risk ratio estimates. These strategies are associated with significant reduction (RR 0.73; 95% CI 0.67 to 0.81, random-effects (17 studies), I² 73%, P value <0.001) in neonatal mortality particularly when community mobilization was supplemented with home visitation by CHWs for delivering preventive, promotive as well as therapeutic care interventions (32%). Early neonatal resuscitation, management of neonatal sepsis, and usage of a clean delivery kit by a traditional birth attendant during the intrapartum period was also associated with significant reduction (19%) in neonatal deaths. Analysis from these trials showed that these strategies are also responsible for a range of benefits on newborn care practices such as early initiation of breastfeeding (in an hour) and health care seeking for neonatal illness.

Conclusion: This evidence based greatly adds to the global evidence base of intervention and delivery strategies that might improve newborn outcomes. A daunting challenge to improving global neonatal health is the need for the right packages of care delivered in appropriate circumstances using a range of contextually relevant approaches.

Keywords: newborn health, community based strategies

14.47 INTEGRATED COMMUNITY-BASED MATERNAL, NEWBORN AND CHILD HEALTH (MNCH) PROGRAMS

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Objective: The organizations, governments and non-government agencies around the world are currently concerned with the health of mothers, newborns and children. The last decade has seen a major focus on the persisting burden of maternal, child and newborn mortality globally. The issues pertaining to the epidemiology, burden and the evidence base for interventions have been the subject of several recent publications, the most notable of which have been the Lancet series on Child Survival in 2003, Newborn Health in 2005 and Maternal Health 2006. Despite this plethora of work, many of the people working on the ground are dismayed by the lack of uniformity in terms of messages for maternal, newborn and child health (MNCH) and varying degrees of emphases on the balance between community, outreach and facility based strategies. This systemic review takes up the analysis of community based interventions implemented in the developing world, to improve maternal, newborn and child health.

Method: Twenty two studies evaluating the impact of integrated maternal and child health were analyzed. Nineteen of these were randomized or quasi experimental designs while three were pre-post study designs. All these studies were from the developing regions including South Asia, South America and Africa. Studies in our review tested the implications of training the Traditional Birth Attendants (TBAs) and Community Health Workers (CHWs) and its impact on various maternal and child outcomes, thus delivering MNCH through primary health care. The studies were evaluated on outcomes like antenatal care (ANC) coverage, tetanus toxoid (TT) immunization coverage, iron/folate supplementation, institutional deliveries, breast feeding and mortalities (stillbirth, perinatal, neonatal, infant and maternal). **Results:** These programs showed a high level of integration at all the measures of input and execution. Three outcomes which showed significant improvements through effect size estimation were iron/folate supplementation ($p=0.03$), initiation of breast feeding within one hour ($p=0.04$) and neonatal mortality rates ($p=0.02$). Overall pooled analysis showed significant improvements in ANC, TT immunization, breast feeding, iron/folate, neonatal mortality and perinatal mortality. ANC, TT vaccination and breast feeding initiation were significantly better when delivered through CHW's as compared to TBA, while tetanus coverage was better in the TBA group. Maternal, perinatal and infant mortality also reduced significantly in CHW group as compared to TBA.

Conclusion: Integrated community based maternal, newborn and child health services have shown to be effective in improving almost all maternal and neonatal outcomes. Delivering these interventions as a package, at community-level is more cost-effective than implementing single interventions hence neonatal and child health should be integrated with maternal health to serve the community better.

Keywords: Integration, maternal child health

14.48 INTEGRATED NUTRITION PROGRAMS

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Objective: Maternal and child under nutrition remains the most insidious issue for the developing world. It's the underlying cause of 3.5 million deaths worldwide, 35% of the burden in children younger than five years of age and 11% of the total global DALYs. This issue has been a topic of discussion in several recent publications, the most important of which is the Lancet Series on Maternal and Child Under nutrition. While interventions to improve the nutritional status of women and children are a fundamental component of maternal and child health services, these need to be complemented by the programs like food security, access to basic health facilities, employment that would provide direct support to the sustainably, strengthening livelihoods and improving food and nutrition security. Several such large scale nutrition programs integrated with other health services have been implemented. This review attempts to explore the factors associated with the effectiveness of the existing evidences and to identify the potential inadequacies to build directions for the future research and program planning. **Method:** Studies and programs involving integrated delivery of nutrition education for children were included for this review. Eighteen efficacy trials (RCTs or prospective time series) with integrated nutrition interventions were evaluated. Twenty nine national level nutrition programs were also reviewed including programs that integrated nutrition components with MNCH services, health education, micronutrient supplementation and income generation. Studies and programs were evaluated on the outcomes like exposure to education, information recall, practice and anthropometric measures (stunting, wasting and underweight). **Results:** These programs were not very well integrated in terms of materials and finances. Effect size estimates showed significant improvements in coverage ($p=0.0009$) and practice ($p=0.02$). Overall pooled estimates showed significant improvements in all outcomes except stunting and wasting. Subgroup analysis showed that efficacy trials were able to achieve significant improvements in short term outcomes like coverage, recall and practice, however did not have any significant impact on anthropometric measures. Large scale programs significantly improved information recall and underweight. Significant improvement was seen in stunting (RR=0.30, 95% CI= 0.12-0.77) and wasting (RR=0.83, 95% CI= 0.72-0.95) for integrated programs when compared to the national statistics. **Conclusion:** Integrated nutrition programs have shown to be effective in achieving program related outcomes, however, evidences for effectiveness in reducing malnutrition is inconclusive and requires long term program implementation and follow-up.

Keywords: Integration, Nutrition

14.49 INTEGRATED REPRODUCTIVE HEALTH PROGRAMS

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Objective: The idea of integrating family planning and health activities has occupied a pivotal role in the population field ever since the World Population Conference in Bucharest in 1974, and even earlier, since the beginning of public sector involvement in the provision of contraceptive service. The linkage of maternal and child health and family planning services is mutually beneficial. Greater spacing of children and reasonable limits to family size are important for improving the health of mothers and existing children. The notion of integrated FP and MCH delivery would result improving access to capture the target population thus leading to fewer missed opportunities and greater continuity of care. This review attempted to analyze the effectiveness of integrated FP/MCH delivery versus non-integrated delivery strategy.

Method: Seventeen studies and large scale national programs were included in the analysis. Eight of these had delivery strategy integrated with the MCH services while nine were non-integrated. The studies included for the evaluation are randomized trials, quasi-experimental or pre-post designs. Few large scale programs were not included for quantitative analysis due to unavailability of relevant data. The outcomes considered for evaluation included contraceptive prevalence, knowledge and fertility rate. Comparisons were made for the selected outcomes for integrated programs vs. non-integrated programs

Results: Materials and finances were relatively not well integrated. Effect estimates did not show any significant improvement for any of the outcomes. Both integrated (RR=3.09, 95% CI=1.94-4.92) and non-integrated programs improved contraceptive prevalence significantly (RR=1.6, 95% CI=1.15-2.21). Subgroup analysis showed that the integrated programs were able to achieve significant decline in fertility (RR=0.82, 95% CI=0.80-0.84), results should be interpreted with caution due to limited evidences. Contraceptive knowledge remained inconclusive for both integrated and non-integrated programs evaluated.

Conclusion: Overall no conclusive evidence was found in the favor of integration as both the programs have shown to significantly improve the outcomes for coverage and fertility rate.

Keywords: Integration, reproductive health

14.50 INTERCONNECTIONS BETWEEN MATERNAL & NEWBORN HEALTH

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Objective: Poor maternal and newborn health remains a significant contributor to the burden of disease in developing countries: worldwide 350,000 women die during pregnancy and childbirth every year, and an estimated four million babies die in the first

four weeks of life. There is widespread recognition that the health of a mother and her newborn are closely linked: most maternal and newborn deaths are caused by the poor health of the mother before or during pregnancy, or by the quality of care she and her newborn receive during and immediately after childbirth. Strategies for improving maternal and newborn health and survival are therefore closely related, and must be provided through a continuum of care approach. When linked together and included as integrated programs, these interventions can lower costs, promote greater efficiencies, and reduce duplication of resources. **Objective:** This systematic review studied interconnections between maternal and neonatal/infant health parameters in order to reduce the respective mortalities and morbidities; described interconnections between MNCH health care strategies and interventions; estimated additive or synergistic effects of interventions on composite maternal and neonatal/infant outcomes; and updated and complimented existing literature, and identify key gaps in knowledge and priority areas for research in integrated management of maternal, newborn, and child health. **Method:** Using the WHO recommended interventions for reducing maternal and newborn deaths and disability, a total of 154 MNH interventions were assessed in the review (insert reference). Relevant reviews and studies for each intervention were identified from the Cochrane library and the Lancet series. If no Cochrane review was identified, a search of Pub Med was conducted using targeted search terms. Data was also extracted from agency reports, including those from WHO, UNFPA, UNICEF, and the World Bank. A further search was conducted of references from identified studies. The principal focus was on collecting randomized controlled trials and quasi-randomized trials; where such studies were missing, observational or pre-post studies were also included. Each of the interventions was assessed using the WHO's Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) criteria. Following the grading, the interventions were further analyzed to assess their synergistic effect on maternal, newborn, and child health outcomes. Those having significant impact high level of evidence (generated from RCTs and further research is very unlikely to change our confidence in the estimate of effect) for both mother/fetus, mother/newborn, or mother/child were assigned an Interconnections grade of A and those with moderate/low level of evidence (generated from low quality randomized trials or observational studies; and further research is likely/very likely to have an important impact on our confidence in the estimate of effect and may change the estimate) for both mother/fetus, mother/newborn, or mother/child were assigned an Interconnections grade of B, while those only benefiting the mother or the newborn, were assigned a group of C. A total of 23 Group A interventions were identified from this analysis. Group A interventions were further analyzed for composite outcomes (need to explain in lay terms) on maternal, fetal, and neonatal mortality and morbidity. This aimed to identify additive or synergistic effects of the intervention on composite outcomes of maternal, neonatal, and infant health parameters. **Results:** Two interventions during the reproductive period were found to have a synergistic effect on maternal and newborn health. These include: Folic acid supplementation (through folic acid tablets or fortification of food); family planning/birth spacing. The antenatal period provides unique opportunities to safeguard and protect the health of the woman and her fetus/newborn. The greatest number of interventions (13 in total)

were found during the pregnancy period were found to have a synergistic effect on improving maternal and neonatal outcomes. Moreover, there were 3 interventions which had clear beneficial impact on maternal/fetal/infant outcomes and are delivered in care packages. These include: Smoking cessation programs during pregnancy; focused ante-natal care; iron and iron-folic acid supplementation; prevention and management of syphilis; treating STDs before and during pregnancy; prevention and management of HIV in pregnancy; detection and management of maternal diabetes; calcium supplementation during pregnancy; a range of community support strategies (e.g. emergency transport funds, promotion of healthy behaviors, supportive care during childbirth); preventing malaria during pregnancy; Insecticide-treated nets for preventing malaria; use of anti-hypertensive agents, anti-platelet agents and magnesium sulphate to treat mild to moderate hypertension in pregnancy; Influenza vaccination to mothers during pregnancy; balanced protein energy supplementation; multiple micronutrient supplementation in pregnancy is associated with significant reductions in early infant mortality and small-for-gestational age births; reducing intimate partner violence. During intrapartum, skilled birth attendance; induction of labor; antibiotic treatment of preterm, premature rupture of the membranes in pregnancy; training traditional birth attendants; usage of clean delivery kits; and C-sections improves MNCH outcomes. During postnatal/neonatal period, postnatal visits within the first 24 hours, exclusive breastfeeding during the first six months of life; perinatal audit; Kangaroo mother care; and recognition and treatment of mild depression in mothers significantly reduces the risk of neonatal mortality and severe neonatal morbidity

Conclusion: Maternal, fetal, and newborn health is strongly interconnected, and review found that a number of interventions during the reproductive, pregnancy, delivery, and postnatal periods have a positive, synergistic effect on the health and survival of both women and their newborns. Therefore, it is therefore vital to interconnect care for women and their newborn children– to promote greater efficiency, lower costs, reduce duplication of resources, and to achieve high-impact.

Keywords: Interconnections, maternal health, newborn health

14.51

LINKAGES AMONG REPRODUCTIVE HEALTH, MATERNAL HEALTH, AND PERINATAL OUTCOMES

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Objective: Some interventions in women before and during pregnancy may reduce perinatal and neonatal deaths, and recent research has established linkages of reproductive health with maternal, perinatal, and early neonatal health outcomes. In this review, we attempted to analyze the impact of biological, clinical, and epidemiologic aspects of reproductive and maternal health interventions on perinatal and neonatal outcomes through an elucidation of a biological framework for linking reproductive, maternal and newborn health (RHMNH); care strategies and interventions for improved perinatal and neonatal health

outcomes; public health implications of these linkages and implementation strategies; and evidence gaps for scaling up such strategies.

Method: Approximately 1000 studies (up to June 15, 2010) were reviewed that have addressed an impact of reproductive and maternal health interventions on perinatal and neonatal outcomes. These include systematic reviews, meta-analyses, and stand-alone experimental and observational studies. Evidences were also drawn from recent work undertaken by the Child Health Epidemiology Reference Group (CHERG), the interconnections between maternal and newborn health reviews identified by the Global Alliance for Prevention of Prematurity and Stillbirth (GAPPS), as well as relevant work by the Partnership for Maternal, Newborn and Child Health.

Results: Our review amply demonstrates that opportunities for assessing outcomes for both mothers and newborns have been poorly realized and documented. Most of the interventions reviewed will require more greater-quality evidence before solid programmatic recommendations can be made. However, on the basis of our review, birth spacing, prevention of indoor air pollution, prevention of intimate partner violence before and during pregnancy, antenatal care during pregnancy, Doppler ultrasound monitoring during pregnancy, insecticide-treated mosquito nets, birth and newborn care preparedness via community-based intervention packages, emergency obstetrical care, elective induction for post term delivery, Cesarean delivery for breech presentation, and prophylactic corticosteroids in preterm labor reduce perinatal mortality; and early initiation of breastfeeding and birth and newborn care preparedness through community-based intervention packages reduce neonatal mortality.

Conclusion: This review demonstrates that RHMNH are inextricably linked, and that, therefore, health policies and programs should link them together. Such potential integration of strategies would not only help improve outcomes for millions of mothers and newborns but would also save scant resources. This would also allow for greater efficiency in training, monitoring, and supervision of health care workers and would also help families and communities to access and use services easily.

Keywords: Linkages, maternal child health

14.52

RAPID ACTING BRONCHODILATOR TO RELIEVE BRONCHOCONSTRICTION IN CHILDREN AGED 2-59 MONTHS IN LOW RESOURCE COUNTRIES

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Objective: Approximately 300 million people currently suffer from asthma and as many as 255,000 people died of asthma in 2005. Over 80% of asthma deaths occur in low and lower-middle income countries. Objectives: To evaluate which drug is most suitable for providing rapid acting bronchodilator therapy in developing country situation to relieve bronchoconstriction in children aged 2-59 months.

Method: Search strategy: We searched the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane

Library), Pubmed, Science Direct, Lilac, JOLIS, and Google Scholar on April 20, 2010. Selection criteria: All randomized controlled trials (RCTs). Data collection and analysis: Two review authors independently assessed trial quality and extracted the data.

Results: We could not find any trial from developing country; however, studies were identified from developed countries that included children of 2-59 months of age specifically or as part of a larger age group. We found seven trials on children less than 5 years of age in which the effectiveness of salbutamol was observed over placebo for relieving wheeze and bronchoconstriction. Almost all of these studies showed superiority of salbutamol over placebo and the children given salbutamol showed early recovery, early discharge from hospital, and greater improvement in clinical status (respiratory rates, degree of wheezing and use of accessory muscle). **Conclusion:** The evidence of this review suggests that salbutamol is an effective drug for children between 2-59 months of age to relieve bronchoconstriction/wheeze. However, there is a need for more well-designed RCTs to support our review findings.

Keywords: Asthma, children

14.53

ZINC SUPPLEMENTATION FOR THE PREVENTION OF PNEUMONIA IN CHILDREN AGED 2 MONTHS TO 59 MONTHS

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Background: Pneumonia is a leading cause of morbidity and mortality in children younger than five years of age. Most deaths occur during infancy and in low-income countries. Daily regimens of zinc have been reported to prevent acute lower respiratory tract infection and reduce child mortality. **Objectives:** To evaluate the effectiveness of zinc supplementation in the prevention of pneumonia in children aged two to 59 months.

Method: Search strategy: We searched the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library 2010, Issue 2), which contains the Acute Respiratory Infections Group's Specialized Register, MEDLINE (1966 to January Week 2, 2010), EMBASE (1974 to January 2010) and LILACS (1985 to January 2010). Selection criteria: Randomized controlled trials (RCTs) evaluating supplementation of zinc for the prevention of pneumonia in children aged 2 to 59 months of age. Data collection and analysis: Two review authors independently assessed trial quality and extracted data.

Results: We included six trials and 7850 participants in the meta-analysis. Analysis showed that zinc supplementation reduced the incidence of pneumonia by 13% (risk ratio (RR) 0.87; 95% confidence interval (CI) 0.81 to 0.94, fixed-effect, six studies) and prevalence of pneumonia by 41% (RR 0.59; 95% CI 0.35 to 0.99, random-effects, one study). On subgroup analysis, we found that zinc reduced the incidence of pneumonia defined by specific clinical criteria by 21% (i.e. confirmation by chest examination or chest radiograph) (RR 0.79; 95% CI 0.71 to

0.88, fixed-effect, four studies, n = 4591) but had no effect on lower specificity pneumonia case definition (i.e. age specific fast breathing with or without lower chest indrawing) (RR 0.95; 95% CI 0.86 to 1.06, fixed-effect, four studies, n = 3259). **Conclusion:** Zinc supplementation in children is associated with a reduction in the incidence and prevalence of pneumonia, the leading cause of death in children.

Keywords: Zinc Supplementation, Pneumonia

14.54

ZINC SUPPLEMENTATION AS AN ADJUNCT TO ANTIBIOTICS IN THE TREATMENT OF PNEUMONIA IN CHILDREN 2 TO 59 MONTHS OF AGE

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Background: Diarrheal disorders and acute respiratory infections (ARI), especially pneumonia, are the most common causes of death in low-income countries. Studies evaluating the impact of zinc supplementation as an adjunct in the management of pneumonia are limited and have shown variable results. **Objectives:** To evaluate zinc supplementation, as an adjunct to antibiotics, in the treatment of pneumonia in children aged two to 59 months.

Method: Search methods: We searched the Cochrane Central Register of Controlled Trials (CENTRAL Issue 1, 2011), which contains the Cochrane Acute Respiratory Infections (ARI) Group's and the Cochrane Infectious Diseases Group's Specialized Registers, MEDLINE (1950 to March week 2, 2011), EMBASE (1974 to March 2011), CINAHL (1981 to March 2011), LILACS (1985 to March 2011), AMED (1985 to March 2011) CAB Abstracts (1910 to March 2011) and Web of Science (2000 to March 2011). Selection criteria: Randomized control trials (RCTs) evaluating supplementation of zinc as an adjunct to antibiotics for pneumonia in children aged two to 59 months. Data collection and analysis: Two review authors independently assessed trial eligibility and screened all available titles and abstracts for inclusion. If the relevance could not be ascertained by screening the title and abstract, the full text of the article was retrieved and reviewed.

Results: Zinc supplementation in addition to standard antibiotic therapy in children with severe and non-severe pneumonia did not show any statistically significant effect on the clinical recovery. In children with severe pneumonia, zinc supplementation as an adjunct to standard antibiotic therapy failed to show a statistically significant effect on clinical recovery measured in terms of resolution of tachypnea (respiratory rate > 50 per minute) as compared to the control group (risk ratio (RR) 0.91; 95% confidence interval (CI) 0.78 to 1.06). Similarly, zinc supplementation failed to show a significant effect in children with non-severe pneumonia as compared to control (RR 1.00; 95% CI 0.96 to 1.04). The effect of adjuvant zinc supplementation on clinical recovery measured as cessation of chest indrawing was not statistically significant as compared to control (RR 0.86; 95% CI 0.70 to 1.04). Bansal 2011 presented results in median and interquartile range and found non-significant

effect of zinc on time to resolution of tachypnea (P value 0.89) and hospital stay (P value 0.63).

Conclusion: Evidence provided in this review is insufficient to recommend use of zinc as an adjunct to standard antibiotic therapy for pneumonia in children aged two to 59 months.

Keywords: Zinc Supplementation, Pneumonia

14.55

A SYSTEMATIC REVIEW ON TACTILE STIMULATION FOR BIRTH ASPHYXIA FOR IMPROVING VENTILATION AND NEONATAL OUTCOMES

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Background: Despite global decline in under-five and infant mortality in recent years, neonatal mortality has remained relatively unchanged. Mortality during the first 28 days of life now accounts for 41% of all under five mortality. The Child Health Epidemiology Reference Group (CHERG) estimates that globally between 0.6 million to 1 million newborns suffered birth asphyxia in 2008. They also estimated that 9% of all under-five mortality and 23% of all neonatal deaths worldwide were related to birth asphyxia. *Objective:* This systematic review attempted to collate, synthesize and evaluate the effectiveness of tactile stimulation for birth asphyxia after thorough drying on improving ventilation and neonatal outcomes. *Method:* This review considered all available published and unpublished papers/reports on the impact of tactile stimulation (flicking the soles of the feet, rubbing the back etc) for a baby who does not breathe after birth and after thorough drying. Our priority was to derive information from experimental designs; however we did not find any randomized or non-randomized trial on the subject. On the other hand, we identified few before/after trials which had employed neonatal resuscitation as an intervention and found limited information on the role of tactile stimulation for improving ventilation. We therefore targeted other less rigorous study designs like observational (cohort and case-control) and descriptive studies, but the information was not sufficient among these as well. *Results:* Keeping the gravity of the situation in mind a lot of research has been done to assess the effect of on-time basic resuscitation on neonatal outcomes in such cases. These have included observational studies as well as trials and they have been able to deduce that basic resuscitation would significantly lower intrapartum-related neonatal mortality. However the role of tactile stimulation alone, which is one of the steps in the basic resuscitation, has not been widely researched. While many basic newborn resuscitation guidelines mention it as part of the sequence and further go on to specify the duration for which it should be used, others believe that it may only be of use in infants who are only mildly depressed. Still others believe that continued use of tactile stimulation in an apneic newborn is wastage of time. In practice, however, it's a step no one would choose to ignore.

Conclusion: While a lot of work has been done to assess the effects of resuscitation on neonatal outcomes and the evidence base of what works is reasonably strong, information on disaggregated components of resuscitation and aftercare is

limited. Our systematic review revealed a very small number of articles that explicitly mentioned tactile stimulation or equivalent procedures as a part of the "ABC's of basic neonatal resuscitation"; none of which covered the objectives set for this review in their entirety

Keywords: Tactile Stimulation, Birth Asphyxia

14.56

SHORT-COURSE VERSUS LONG-COURSE ANTIBIOTIC THERAPY FOR NON SEVERE COMMUNITY-ACQUIRED PNEUMONIA IN CHILDREN AGED 2 MONTHS TO 59 MONTHS

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Background: Pneumonia is the leading cause of mortality in children under five years of age. Treatment of pneumonia requires an effective antibiotic used in adequate doses for an appropriate duration. Recommended duration of treatment ranges between 7 and 14 days, but this is not based on any empirical evidence. Shorter duration of therapy, if found to be effective, could be particularly important in resource poor settings where there is a high risk of death, poor access to medicines and health care and limited budgets for medicines. *Objectives:* To evaluate the efficacy of short-course versus long-course therapy with the same antibiotic for non-severe community-acquired pneumonia (CAP) in children aged 2 to 59 months.

Method: Search strategy: We searched the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library 2010, Issue 3) which contains the Cochrane Acute Respiratory Infections Group's Specialized Register and the Database of Abstracts of Reviews of Effects, MEDLINE (OVID) (January 1966 to August Week 4, 2010), EMBASE (Embase.com) (1974 to August 2010) and LILACS (1982 to August 2010). Selection criteria: All randomized controlled trials (RCTs) evaluating the efficacy of short-course versus long-course therapy using the same antibiotic for non-severe CAP in children. Data collection and analysis: Two review authors independently assessed trial quality and extracted the data.

Results: Four studies (6177 children) were included. Analysis of three days versus five days of treatment with the same antibiotic for non severe CAP in children showed non-significant differences in rates of clinical cure at the end of treatment (risk ratio (RR) 0.99; 95% confidence interval (CI) 0.97 to 1.01), treatment failure at the end of treatment (RR 1.07; 95% CI 0.92 to 1.25), and relapse rate after seven days of clinical cure (RR 1.09; 95% CI 0.84 to 1.42), and we found no heterogeneity in the results. Subgroup analysis evaluating the impact of different antibiotics showed non-significant differences for these outcomes with different durations of therapy.

Conclusion: The evidence of this review suggests that a short course (three days) of antibiotic therapy is as effective as a longer treatment (five days) for non-severe CAP in children under-five years of age. However, there is a need for more well-designed RCTs to support our review findings.

Keywords: Antibiotic Therapy, Pneumonia

14.57

ROUTE OF ORAL ANTIBIOTIC THERAPY FOR NON SEVERE COMMUNITY-ACQUIRED PNEUMONIA IN CHILDREN AGED 2 MONTHS TO 59 MONTHS

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Background: Pneumonia is the leading cause of mortality in children under five years of age. Treatment of pneumonia requires an effective antibiotic used in adequate doses for an appropriate duration. Objectives: To evaluate the dose of oral antibiotic therapy for non-severe community-acquired pneumonia (CAP) in children aged 2 to 59 months.

Method: Search strategy: We searched the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library) which contains the Cochrane Acute Respiratory Infections Group's Specialized Register and the Database of Abstracts of Reviews of Effects, MEDLINE (OVID) and LILACS. Selection criteria: All randomized controlled trials (RCTs) evaluating the dose of oral antibiotic therapy for non-severe CAP in children. Data collection and analysis: Two review authors independently assessed trial quality and extracted the data.

Results: Two studies were found that employed and compared different routes (parenteral versus oral) of antibiotic administration for the treatment of non-severe community acquired pneumonia. In one study oral co-trimoxazole was compared with intramuscular procaine penicillin and in another study oral amoxicillin was compared with intramuscular penicillin-G. No differences were found in the cure and failure rates when oral co-trimoxazole was compared with IM procaine penicillin. Similarly, treatment failure among oral amoxicillin and IV penicillin were comparable.

Conclusion: The evidence of this review suggests that oral antibiotic is a safe and cost-effective alternative to injectable antibiotic.

Keywords: Antibiotic Therapy, Pneumonia

14.58

EFFECTIVE ROUTE OF RAPID ACTING BRONCHODILATOR TO RELIEVE BRONCHOCONSTRICTION IN CHILDREN AGED 2-59 MONTHS IN LOW RESOURCE COUNTRIES

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Background: Approximately 300 million people currently suffer from asthma and as many as 255,000 people died of asthma in 2005. Over 80% of asthma deaths occur in low and lower-middle income countries. Objectives: To evaluate what route of rapid acting bronchodilator is effective to relieve bronchoconstriction in children aged 2-59 months.

Method: Search strategy: We searched the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library), Pubmed, Science Direct, Lilac, JOLIS, and Google

Scholar on April 20, 2010. Selection criteria: All randomized controlled trials (RCTs). Data collection and analysis: Two review authors independently assessed trial quality and extracted the data.

Results: We found one multi-center study from Pakistan which randomized children with non-severe or severe pneumonia and wheeze to standard dosages of either oral or inhaled salbutamol. Treatment failure on day 5 was non-significant and the evidence on GRADE assessment scored very low.

Conclusion: There is a need of RCTs to answer the review question. However, the 2nd WHO expert committee on selection and use of essential medication suggested the superiority of inhaled salbutamol over oral salbutamol for the management of asthma.

Keywords: bronchodilator, children

14.59

FOOD FORTIFICATION WITH ZINC TO IMPROVE MATERNAL CHILD HEALTH OUTCOMES

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Rehana A Salam

Objective: One third of the world population live in countries with a high prevalence of zinc deficiency. The population most vulnerable are infants, young children, pregnant and lactating women because of their higher zinc requirements at critical stages of growth and physiological needs. Despite the documented evidence of benefits of zinc supplementation, few large scale programs have been initiated in this regard possibly due to the scarcity of data on the success of fortification programs. We evaluated the impacts of zinc fortification programs on maternal and child health outcomes.

Method: Our search strategy, including manual search, identified 12 studies, 8 of which were on infants, where infant formula feeds or milk were fortified, while four were on school children where porridge, bread or ORS were fortified. Nine of the studies were randomized controlled trials while three were quasi experimental designs.

Results: There was a significant impact of zinc fortification on serum zinc concentration, which showed individual impacts ranging from 0.14(-0.52, 0.81) to 5.47(388, 7.06) and the combined standard mean difference of 1.94, 95% confidence interval 1.02 to, 2.85. Significant improvements (weighted mean difference (WMD) 0.63(0.17, 1.69) was seen in height velocity after zinc fortification. The impact on Hemoglobin and serum phosphatase levels was insignificant.

Conclusion: Although these initial results highlight that zinc fortification is associated with increased serum concentrations but overall evidence of the effectiveness of this approach is limited. This could be attributable to multiple factors including the relatively few studies, the small size of the trials, the age group identified, zinc levels at the baseline, zinc compound fortified and the food vehicles used.

Keywords: Fortification, Zinc

14.60**IMPACT OF VITAMIN FORTIFICATION ON MATERNAL NEWBORN HEALTH OUTCOMES**

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Objective: An estimated 190 million children, or approximately 33% of all children under 5 years of age in low-income countries, are vitamin A deficient, with the prevalence being highest among children in Southern Asia (50%) and sub-Saharan Africa (44%) and lower in the region of the Americas (16%). The main cause of vitamin A deficiency is the insufficient dietary intake while intestinal parasites and other infections have also played a role. WHO considers a 23% reduction in mortality in children with marginal deficiency, if it is taken care of. We attempted to evaluate the impact of food fortification with Vitamin A on maternal and child health outcomes.

Method: A comprehensive search was done and eight studies which met our inclusion criteria were reviewed in detail for this systematic review. Four of these studies were before after designs, three were RCTs and one was a Quasi experimental. All of these studies were on children of different age brackets. Various foods including sugar, flour, monosodium glutamate and biscuits were fortified.

Results: This systematic review shows that Vitamin A fortification was associated with significant increase in the serum Vitamin A concentration with a combined standard mean difference of 0.61 of (0.54, 0.69) and additional hematological benefits with an increase in serum hemoglobin concentrations (combined standard mean difference 0.48 (0.07, 0.89)).

Conclusion: Unquestionably, the major challenge remains the design and implementation of effective population based intervention programs as Vitamin A deficiency affects the poorest sections of the population with limited access to health services. Although the Vitamin A supplementation programs have mushroomed in the past couple of decades but still the poorest population still remains susceptible; fortification perhaps could cater to this.

Keywords: Vitamin A, Fortification

14.61**IMPACT OF CALCIUM AND VITAMIN D FORTIFICATION ON MATERNAL CHILD HEALTH OUTCOMES**

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Objective: Vitamin D is an essential requirement of the body at every age. The body needs vitamin D to absorb calcium. Without enough vitamin D, the body can't produce enough of the hormone Calcitriol which in turn leads to insufficient calcium absorption from the diet and hence lower body calcium status. To maintain calcium levels the body depletes calcium from its stores in the bones, with potential long term consequences. Vitamin D can be acquired through three main channels: through the skin, from the diet, and from supplements. Population who are at greater

risk of Vitamin D deficiency are breastfed infants, geriatric population and people exposed to less sunlight. Studies have shown that human milk is not enough to meet the Vitamin D requirements as all the cases of rickets had been breast fed. Older people are more prone to this deficiency as they spend most of the time indoors, have low intakes and problems synthesizing Vitamin D. We attempted to analyze the impact of Vitamin D and Calcium supplementation on maternal and child health outcomes

Method: Of the twenty four studies included in this review, foods were either fortified with Vitamin D, Calcium or both. Twenty one of the included studies were RCTs and 3 were pre-post study designs. Nineteen of the studies had chosen milk as the food vehicle, while others used ice cream, bread, cheese, biscuits, yogurt and fruit juices. We divided the analysis in three subgroups according to the age and reproductive cycle. The three subgroups are pre pubertal, women of reproductive age group and post-menopausal. This was done as Vitamin D and calcium requirements and roles are different for the different age brackets.

Results: The findings of this systematic analysis show that fortification of food with vitamin D was associated with significant changes in plasma 25 (OH) D3 (0.82 CI=0.18, 1.45) and serum Parathyroid hormone concentration (-0.77 CI=-1.21,-0.33) in pre pubertal and post-menopausal age groups, while these were not significant in women of reproductive ages.

Conclusion: It is evident that vitamin D sufficiency is required for optimal health; however most people living outside the tropical regions do not have serum 25(OH) D levels high enough for optimal health. Future research should focus on devising effective strategy to make this available to all the strata of the populations and possibly fortification seems to be the best available option.

Keywords: Fortification, Calcium, Vitamin D

14.62**FOOD FORTIFICATION WITH FOLIC ACID TO IMPROVE MATERNAL CHILD HEALTH OUTCOMES**

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Objective: Folic acid deficiency occurs when either the intake is low, losses are high or when needs do not match intake. Pregnancy and lactation are states when the requirements of folic acid increase. And deficiency at this stage could lead to harmful consequences including abortion, low birth weight and neural tube defects. Folic acid fortification has been mandatory in many developed countries now. USA started compulsory fortification of grain products in 1998. The goal of fortification was to increase folate uptake by 30% to 70% in the women of reproductive age without posing adverse effects to the general population. As many developed countries have mandatory folic acid fortification programs which have been evaluated at various levels, we attempt to do a systemic analysis of all these and conclude a consolidated effect of folic acid fortification on women and child health.

Method: After an extensive search on the search strategy defined,

we identified 33 studies which met our inclusion criteria. Most of these studies are from the developed world as expected and all were pre post study designs as they were the analysis of large nationwide programs. Flour and other cereal grain products were the food vehicles most commonly used .

Results: This systematic analysis shows significant impacts of folate fortification on raising serum (4.34 CI=3.10, 5.58) and RBC concentrations of folate (207.27 CI=12.24, 402.31), hence reducing the serum folate deficiency. This review also showed significant decline in the incidence of spina bifida (0.64 CI=0.57, 0.71), anencephaly (0.76 CI=0.68, 0.85) and neural tube defects (0.57 CI=0.45, 0.73). Folate fortification however, did not show any significant effect on the rate of multiple births.
Conclusion: Our review suggests that the folate fortification had beneficial effect on the health outcomes of children and women. Large scale programs should be executed at national levels to avoid the grave consequences of congenital abnormalities.

Keywords: Folate, fortification

14.64 FOOD FORTIFICATION WITH IODINE TO IMPROVE MATERNAL CHILD HEALTH OUTCOMES

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Objective: Worldwide one third of the population lives in areas at a higher risk of iodine deficiency. The population most susceptible to iodine deficiency are pregnant women and young children. Iodine deficiency can lead to many disorders like mental retardation and delayed intellectual development in children. It also causes goiter, cretinism, and reproductive failure. Higher iodine intake also can lead to endemic goiter and elevated TSH levels. A meta-analysis reported a 13.5 point reduction in IQ among iodine deficient children. Several food vehicles could be used for fortification with iodine like bread, milk and sugar. But salt has been a widely acceptable vehicle and has been successful to a greater extent over the past eight decades. We attempted to analyze the impacts of Iodine fortification on maternal and child health outcomes.

Method: We found 24 studies through the search strategy developed that had evaluated the impact of iodine fortification on the health of women and children, as these studies were evaluations of large national level programs, all of them followed a before after study design. Most of studies found were evaluations from the developed world. The food vehicle used salt in almost all programs except Denmark and Australia where bread has also been used for this purpose.

Results: The meta-analysis shows that iodine fortification had an insignificant impact on the serum thyroxine levels and urinary iodine concentration.

Conclusion: Salt iodization is a proven cost effective strategy, measures such as increasing awareness, easy access, increased compliance and effective monitoring are all the tools required to make a lasting impact on the health of the public at large.

Keywords: Fortification, Iodine

14.65 MULTIPLE MICRONUTRIENT FORTIFICATION AND ITS IMPACT ON MATERNAL CHILD HEALTH OUTCOMES

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Objective: Micronutrient deficiency is present globally in children affecting their normal physical and mental development and growth. Often multiple micronutrients are deficient at the same time. The main reason is the poor dietary habits and these are especially prevalent in the developing countries. Malnutrition and parasitic infections are also a major cause of it. These parasitic and recurrent infections often lead to mal-absorption thus leading to limited absorption even if the diet is adequate. People in the developing countries often have limited financial capability to get access to a healthy diet, while in the developed world eating habits are not healthy: as the consumption of junk food and soft drinks is higher as compared to homemade food. While fortification is a recognized and effective strategy, question arises that whether these should be given individually or in combination. There have been studies where dual micronutrient are fortified like zinc combined with iron, while others have fortified more than two and up to fifteen micronutrients. This analysis was carried out to evaluate the effects of multiple micronutrient fortification on the biochemical and health outcomes of children and women.

Method: Out of the eleven studies identified, six had fortified a combination of iodine with iron, two were iron with zinc and one each for iron with ascorbic acid, riboflavin and vitamin A.
Results: The meta-analysis done for different outcome parameters showed MMN fortification to be a highly effective strategy. It significantly increased serum concentration of different micronutrients: Zinc (0.18, CI=0.03, 0.30) & Ferritin (0.46, CI=0.30, 0.63), hemoglobin concentration (0.69 CI=0.42, 0.95), also reducing anemia prevalence (0.65, CI= 0.50, 0.85) and affecting anthropometric measures (HAZ & WAZ). While this review shows that fortification had no significant effect on morbidity including fever, respiratory or diarrheal illness and UTIs.

Conclusion: These encouraging results show the effectiveness of food fortification and the potential it has to alleviate a number of issues through a single scalable intervention and reach larger populations. All that is required is identification of most susceptible groups and major micronutrients required and a central policy to implement an effective program.

Keywords: Micronutrient, Fortification

14.66**DETERMINATION OF VITAMIN D BINDING PROTEIN (VDBP) VARIANTS IN PREGNANT WOMEN AND NEONATES IN PAKISTAN**

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Introduction: Hypovitaminosis D or vitamin D deficiency is a worldwide epidemic. Hypovitaminosis D during pregnancy is associated with various adverse outcomes namely schizophrenia, asthma, type1 diabetes, skeletal problems and impaired growth. Vitamin D and its metabolites are transported to the liver, kidneys and other organs by a binding protein known as vitamin D binding protein (VDBP). It is also known as group-specific component of serum (Gc-globulin). 88% of 25(OH) D is bound to VDBP in plasma. VDBP protein also functions as an actin scavenger, macrophage activating factor, chemotactic factor during injury and fatty acid transporter. It is associated with adverse outcomes such as Graves' disease, diabetes, obesity, pulmonary disease, liver disease rheumatic fever. VDBP is synthesized in the liver where vitamin D is also synthesized .The Gc gene is present on chromosome 4 and is a part of a superfamily which also includes albumin and α -fetoprotein genes. It is 42.5 kb long and contains 13 exons. Its protein has 458 amino acids. There are three major forms due to variations at codons 416 and 420 in exon 11 which result in Gc1 fast (Gc1F), Gc1 slow (Gc1S) and Gc2. Gc1F has aspartic acid (Asp) at codon 416. A T-G substitution replaces Asp with glutamic acid resulting in Gc1S. Codon 420 has threonine and a C-G substitution replaces threonine with lysine resulting in Gc2. These polymorphic forms have different affinity for vitamin D metabolites. For example, Gc1-1 has higher, Gc1-2 has intermediate and Gc2-2 has lower affinity for 25(OH) D and 1,25 (OH)₂ D. Differences in amino acid sequence and attached polysaccharides result in six major polymorphic forms known as Gc1F/Gc1F, Gc1F/Gc1S, Gc1S/Gc1S, Gc1F/Gc2, Gc1S/Gc2, Gc2/Gc2 . Context: There is little knowledge about the epidemiology of VDBP variants considering the wide spread occurrences of various health problems especially women and children.

Objective: To determine the prevalence of vitamin D binding protein variants in pregnant women and neonates in rural and urban areas of Pakistan. Design settings: This study is partially based on a cross sectional study in urban setting in JPMC, Karachi and a randomized control trial in a cohort of pregnant women in Jhelum Sample size: 200 mother baby pairs from JPMC and 200 mother baby pairs from Pind Daden Khan, Jhelum(n=800).

Methods: VDBP polymorphisms will be studied by PCR-RFLP. DNA from white blood cells will be extracted using the salting out method. Purified DNA will be subjected to amplification by PCR. Amplified DNA sample will be subjected to digestion with Hae III and StyI restriction endonucleases for 6 hours. Digested products will be visualized by gel electrophoresis.

Statistical methods: Hardy Weinberg equilibrium analysis will be used to determine the frequencies of genotype and alleles in

our sample. Multiple Regression model will be applied to determine the relation of VDBP polymorphisms with vitamin D deficiency as outcome.

Keywords: Vitamin D, binding protein, pregnant women

14.67**IMPACT OF IRON FORTIFICATION ON MATERNAL AND CHILD HEALTH OUTCOMES**

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Objective: Iron deficiency is the most rampant nutritional deficiency, affecting nearly half of all pregnant women and being one of the foremost indirect causes of maternal mortality. Adolescent women in developing countries are particularly affected, with iron deficiency accounting for over 7 million global adolescent DALYs and the prevalence of anemia in young Indian girls reaching a staggering 56%. Anemia due to iron deficiency may be the product of intergenerational effects, poverty and hunger, and special losses in women during menstruation and multiple pregnancies. Over 25% of children are also estimated to suffer from iron deficiency anemia. In practice, fortification has emerged as the most deliverable, sustainable and cost-effective solution for reducing the global burden of iron deficiency. However, food fortification with iron requires a compromise between bioavailability, sensory acceptability and excessive accumulation in iron-replete individuals. We attempted to evaluate the impact of food fortification with iron on maternal child health outcomes. **Method:** The search strategy yielded 38 articles which met our inclusion criteria. 11 studies employed fortification of staple foods including rice, wheat- and corn- flour, bread and beans, as well as biscuits made from fortified flour. 11 studies targeted infants and very young children, fortifying formula milk, cow's milk and complementary baby

Results: According to our pooled analysis, iron-fortified foods for women and children successfully increase hemoglobin concentrations (6.07, CI=3.97, 8.17)and serum ferritin (7.93 CI=5.48,10.37)and reduce the prevalence of anemia (0.63 I=0.57, 0.69). However, the evidence for effect is not uniform, and at present is strongest for improving iron stores in infants and young children.

Conclusion: As fortification is gaining importance as a nutrition strategy, it is important to know that it mimics physiologic intake more closely than supplementation, and therefore causes fewer individual adverse effects. As fortification methods improve, local diets, as well as baseline physiologic and iron status of the target population (particularly women of reproductive age and children) will need to be considered in deciding upon the vehicle and compound for fortification. Further scrutiny will also be necessary to monitor possible adverse effects and interactions with other micronutrients.

Keywords: Iron, Fortification

14.68

EFFECT OF TOPICAL EMOLLIENT THERAPY ON THE CLINICAL OUTCOMES IN PRETERM NEONATES IN A HOSPITAL SETUP – A CLINICAL TRIAL

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Karachi

Objective: Almost all of the neonatal deaths occur in lower and middle income countries. As most of the deaths in preterm neonates are attributable to their vulnerability to infection, a potential low cost intervention like topical emollient therapy can be effectively directed to reduce infection related mortality and morbidity in the developing countries. Topical emollient therapy reduces the rate of infection by enhancing the skin barrier function, thus reducing trans-epidermal water loss consequently conserving heat and energy to promote growth. This study primarily aimed to compare the incidence proportion of hospital acquired infection among hospitalized preterm neonates who received topical emollient therapy with coconut oil versus routine skin care. The secondary objective was to compare the weight gain, skin condition and mortality at 28th day of life in the two groups of neonates.

Method: It was a randomized controlled clinical trial. All the neonates born before 37 weeks of gestation at the Aga Khan University, Karachi, who fulfilled the eligibility criteria were randomly assigned to coconut oil massage group (n=128) or routine skin care group (n=130) with the consent of a parent/guardian. The neonates assigned to the intervention group received coconut oil application twice a day while the neonates in the control group received routine skin care. The relative risk of infection and the weight gain at 28th day of life were then compared among the two groups of neonates.

Results: Neonates receiving emollient therapy with coconut oil were 71% less likely to get hospital acquired infection as compared to ones receiving the routine skin care after adjusting for gestational age, birth weight, duration of intubation and duration of hospitalization (adjusted RR= 0.285, 95% CI 0.104-0.781). The mean weight gain in the intervention group was 11.34 gm/day higher (p=0.000) than the control group. Skin condition in the intervention group was significantly better than the control group (p=0.000). The risk of mortality did not reach statistical significance after adjusting for gestational age, birth weight, duration of intubation and duration of hospitalization (adjusted RR= 0.540, 95% CI 0.157-1.859). No adverse effects were observed amongst the neonates receiving emollient therapy throughout the trial.

Conclusion: Topical emollient therapy is a potentially effective traditional practice, feasible for low and middle income countries to adopt and improve child survival. However, its effectiveness in community based set ups needs to be explored.

Keywords: Emollient, Neonatal Sepsis

14.69

PRECONCEPTION CARE- PREVENTING COMPLICATIONS FROM CHRONIC DISEASES

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Objective: Worldwide, 70 million women of reproductive age suffer from diabetes. Infants of women with pre-existent diabetes mellitus have a ten-fold greater risk of a congenital malformation and a five-fold greater risk of being stillborn. Preconception care would allow women to optimize glycemic control before the critical period of fetal organogenesis. Unfortunately, less than a third of women with pre-existing diabetes receive preconception care.

Method: A systematic review and meta-analysis of cohort, case-control and randomized controlled trials was undertaken that assessed maternal and newborn outcomes in relation to preconception glycemic control. Preconception care was defined as any intervention provided before pregnancy, including diet and exercise, counseling and family planning, to reduce diabetic-related pregnancy complications.

Results: Preconception care for diabetic women leads to 70% reduction in the two most noted adverse fetal outcomes of diabetic pregnancies, congenital malformations and perinatal mortality. This drastic reduction is due to the significant decrease in HbA1c during the first trimester for women who receive preconception care. Preconception care also lowered the rate of preterm births and Caesarean delivery.

Conclusion: Preconception care for women with diabetes provides an advantage over prenatal care to optimize glycemic control and prevent maternal and neonatal complications. Thus, it is imperative that every health visit for women with diabetes be regarded as an opportunity to provide preconception care.

Keywords: Preconception care, diabetes, congenital malformations

14.70

PRECONCEPTION CARE- MENTAL HEALTH AND INTIMATE PARTNER VIOLENCE

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Objective: Women are nearly twice as likely to suffer from mental health disorders, especially depression. 73 million women globally, are estimated to suffer from a major depressive episode each year. Mental health problems in women are significantly interconnected with other risks, such as gender based roles, and intimate partner violence. A WHO multi-country study estimates that 15-71% of women experience intimate partner violence at some point in their lives.

Method: Systematic review and meta-analysis of cohort and case-control studies. The review was carried out to determine the magnitude of risk that poor mental health and intimate partner violence in the preconception period poses to women, and how this impacts pregnancy and neonatal outcomes.

Results: Adolescent depression may increase the risk of

miscarriage by more than two folds and the risk of IPV by more than three-folds. Women suffering from IPV are twice as likely to have an unplanned pregnancy; and 50% more likely to experience fetal loss and gynecologic morbidity. Further, they are twice as likely to suffer from impaired physical health and mental health. Interventions such as group or couple's behavioral therapy have shown significant reductions in post-intervention aggression.

Conclusion: Providers should screen and identify women at risk for mental health disorders and those subject to intimate partner violence. Where possible, they should provide support, refer to specialized counseling or prescribe anti-depressants if necessary. Health systems research is urgently needed to deliver solutions that prevent and respond to women's psychological health problems.

Keywords: Preconception care, mental health/depression, partner violence

14.71

MATERNAL GESTATIONAL WEIGHT GAIN AND TERM INTRAUTERINE GROWTH RESTRICTION: A HOSPITAL BASED PROSPECTIVE COHORT STUDY

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Objective: IUGR is a public health problem faced in developing countries where the burden is very high and associated with many short and long term consequences. Maternal nutritional factors especially gestational weight gain (GWG) has been thought to play a key role in IUGR in our setting. Objectives is to assess if low maternal gestational weight gain is a risk factor for an IUGR baby and to assess the relative proportion of term IUGR that is attributable to maternal malnutrition.
Method: The study is a multi-center hospital based prospective cohort that was carried out in 3 hospitals of Karachi. Exposure variable was total maternal GWG. The outcome was term IUGR which was diagnosed at the time of birth. Descriptives were computed followed by simple and multiple Cox Regression model. Levine's formula was used to calculate the Population Attributable Risks of IUGR.

Results: Overall 358 mother-newborn dyads were obtained. The overall incidence of IUGR was 25.4 %. Effect modification is present between pre-pregnant BMI and gestational weight gain, at a lower BMI (<18.5) less weight gain has more risk of an IUGR baby (HR=1.43) whereas at a higher BMI (>30) less weight gain is actually protective of IUGR (HR=0.81). 71% of risk factors attributing to IUGR were explained by the study out of which 43% were maternal nutritional factors and 29% were non nutritional factors, 28% were unexplained.

Conclusion: There is an association between GWG and IUGR at low pre-pregnancy BMI, but no significant causal association between IUGR and GWG among women with a high pre-pregnancy BMI.

Keywords: IUGR, GWG

14.72

SCALING UP MATERNAL TETANUS TOXOID VACCINATION AND OTHER INTERVENTIONS TO REDUCE NEONATAL MORTALITY FROM NEONATAL TETANUS IN LOW AND MIDDLE INCOME COUNTRIES

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Objective: Neonatal tetanus has been a major cause of neonatal mortality in both developed and developing world. Although developed world has coped up with this but the developing countries are still trying ways to prevent neonatal death from neonatal tetanus. To find out the effective interventions needed to reduce neonatal mortality due to neonatal tetanus in low and middle income countries.

Method: We systemically reviewed the published literature to identify studies regarding interventions for reducing neonatal mortality. Pubmed and Pubget was used as our data base. We included the articles those published 1st January 2006 till 1st June 2011. After going through all the articles 10 studies were sort out after checking out eligibility criteria. A standardized data extraction form was also used. Out of selected 7 studies, 2 were systemic reviews, 4 were cross sectional studies and 1 was review paper.

Results: Interventions that will reduce neonatal mortality were identified as vaccination of women of child bearing age with tetanus toxoids, community based care interventions, antenatal checkups, supplementary immunization activities (SIA's), iron & folic acid supplementation and safer delivery practices.
Conclusion: The key intervention to reduce neonatal mortality from neonatal tetanus found out to be vaccination of pregnant women with tetanus toxoid. In the resource poor countries, this single intervention will have huge impact on health indicator of the country.

Keywords: Vaccination

14.73

FACTORS RELATED WITH HYPOGLYCEMIA IN NEONATES OF DIABETIC MOTHER - A CROSS SECTIONAL STUDY FROM A TERTIARY CARE CENTER.

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Objective: Hypoglycemia is common in neonates, particularly on the first day of life. The risk of hypoglycemia is increased in neonates born to diabetic mother, hyperinsulinaemia neonates, preterm as well as small for gestational age (SGA) neonates.
Method: A retrospective cross sectional analytical study enrolling involving 873 neonates born to diabetic mothers between January 2005 and December 2009

Results: Hypoglycemia developed in 72 (8.2%) Neonates born to diabetic mother, including 47.8% preterm and 52.2% full term neonates. 20.2% were low birth weight whereas 74.2% were appropriate for age. 89.6% of the mothers had antenatal

care with at least 2 visits. 57.4% of neonates were delivered by cesarean section. Significant hypoglycemia was found in 46% of neonates with weight less than 2500 grams and 11% in neonates greater than 4000 grams respectively. Similarly 62% of neonates were born before 37 weeks (p value less than <0.005). 51.4% of the neonates born by cesarean section developed significant hypoglycemia Polyhydramnios, hyperbilirubinemia and hypocalcaemia were significantly more common in neonates with hypoglycemia. Neonates with birth weight less 2.5 kg and > 4 kg were independently associated with neonatal hypoglycemia [OR 2.3, 95% CI (1.3-4.0)] and [OR 2.6, 95% CI (1.1-6.5)] respectively. Similarly having sepsis and hypocalcaemia were identified as another strongest risk factor associated with the hypoglycemia at multivariable analysis respectively [OR 15.5, 95% CI (6.0-40.2)], [OR 1.7, 95% CI (1.1- 3.1)].
Conclusion: Since hypoglycemia has been linked with poor neurodevelopment outcome, therefore all neonates born to diabetic mothers with weight less than 2500gram and born before 37 weeks of gestational age should be screened and especially septic neonates should be managed aggressively to decrease the morbidity and mortality associated with neonatal hypoglycemia.
Key words: Hypoglycemia, neonates of diabetic mother, risk factors

Keywords: Neonatal, hypoglycemia

14.74

PRECONCEPTION CARE- PREVENTING ADOLESCENT PREGNANCIES

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Objective: Each year, 16 million births are to adolescent girls age 15-19. Teenage women are more likely to have multiple risk factors such as poverty, nutritional anemia, coerced sex, and lack of access to care, and therefore face greater intra-partum complications. Adolescent girls are 2-5 times more likely to die of pregnancy-related complications than women above age twenty. In developing countries, adolescent pregnancy is often a consequence of early marriages. Beyond health risks, adolescent mothers also have social disadvantages, often raising children without partners or family support, and usually unable to complete their own education.

Method: A systematic review and meta-analysis was conducted to evaluate the efficacy of programs to prevent first and repeat pregnancies in adolescent girls.

Results: Although sexual-education programs and contraceptive provision have been promoted to prevent risky sexual behavior among adolescents, the meta-analysis demonstrated that these programs did not significantly lower risk. Rather, programs that broaden adolescents' life options by addressing their educational, social, economic, nutritional, psychological, and medical needs are more effective in preventing adolescent pregnancy. Programs focusing on personal development are particularly effective in preventing first pregnancies, and those that teach parenting skills to adolescent mothers are more likely to reduce repeat pregnancies.

Conclusion: All adults, especially healthcare providers, have the opportunity to prevent adolescent pregnancy. In schools, community centers and health centers, promoting

sexual and reproductive health (access to contraception and safe abortion) and empowering adolescent girls with the skills they require to negotiate their safety can prevent gender-based violence, STDs and HIV, and prevent early pregnancy.

Keywords: Adolescents, sexual/reproductive health, Women/girls

14.75

PRECONCEPTION CARE- BIRTH SPACING

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Objective: Provision of effective contraception for the 201 million women who have none would prevent 23 million unplanned births, 22 million induced abortions and 14 000 pregnancy-related deaths every year. Family planning has a significant role to play in preconception care. Women who are able to decide how many children they wish to have, and use a method to space their pregnancies, are more physically and emotionally healthy when they become mothers, and have healthier children

Method: A systematic review and meta-analysis of cohort and case-control studies was undertaken to assess the impact of duration of inter-pregnancy interval on maternal and neonatal outcomes

Results: Women who have very closely-spaced pregnancies (less than 6 months) are nutritionally depleted, and at higher risk of maternal death (66%) and stillbirths (40%). Conversely, women with long inter-pregnancy intervals (exceeding 5 years) are in much greater danger of pre-eclampsia (60-80%), fetal death and third-trimester hemorrhage. After a live birth, women should space their pregnancies with at least 18-24 months before the next conception. Women should not wait longer than 5 years between pregnancies as this may increase the risk of preeclampsia, and maternal and neonatal mortality.

Conclusion: All women and couples of reproductive age should be encouraged to have a reproductive life plan that includes age at first conception; number and spacing between children; exclusive breastfeeding and consistent use of modern family planning methods. Preconception care must include family planning, so that pregnancies are intended, and women are healthy before the next time they wish to conceive.

Keywords: Birth spacing, inter-pregnancy intervals, contraception

14.76

PRECONCEPTION CARE- NUTRITION

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Objective: What women eat determines more than just their own health, it is also vital to healthy pregnancies and newborns, and research now shows that nutritional status in early childhood affects health throughout life. Many women are still unaware

of how much their nutritional status impacts their pregnancy outcomes. In low-income countries, 40% of pregnant women are anemic, and in developed countries less than half of all women use folic acid supplements before pregnancy. Improving women's eating behaviors should therefore begin much before pregnancy.

Method: A systematic review and meta-analysis of observational and experimental trials was carried out to determine the effect of micronutrient supplementation and fortification on pregnancy outcomes

Results: Folic acid supplementation or fortification protects against recurrent (RR 0.47) and recurrent neural tube defects (RR0.31). Multivitamin supplementation significantly reduces the risk of limb defects, congenital urinary tract defects, pre-eclampsia, and multiple congenital anomalies. Some studies support supplementation with B-complex vitamins to prevent early pregnancy loss and preterm birth. Trials concerning other micronutrients including iron, iodine and calcium were largely conducted during pregnancy, and were too limited in number to perform a meta-analysis. Although vitamin A deficiency results in adverse outcomes, supplementation may be harmful since excess vitamin A is teratogenic.

Conclusion: Health systems research is necessary to scale up use of folic acid/multivitamin supplements in women of reproductive age. Meanwhile, daily consumption of a multivitamin supplement containing 400 µg of folic acid, plus Calcium and Vitamin D, Iron, and Iodine could significantly improve the health of women before, during and after pregnancy.

Keywords: nutrition, micronutrient supplementation, folic acid

14.77

PREVALENCE OF DOMESTIC VIOLENCE AMONG MARRIED FEMALE HEALTH CARE PROVIDERS IN TERTIARY CARE HOSPITALS IN KARACHI, PAKISTAN

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Objective: To estimate the prevalence of verbal, physical, emotional/psychological, and sexual abuse among married female health care providers in tertiary care hospitals in Karachi, Pakistan.

Method: A descriptive cross-sectional study used among 350 married female nurses and doctors, recruited from three tertiary care hospitals (one public and two private). Used the self administered WHO Multi-country Study on Women's Health and Life Experiences (2005) tool, after some modifications. Descriptive and univariate analysis was performed to arrive at results.

Results: Descriptive statistic showed that 97.7% (n= 342) of the study participants reported one or more forms of violence at some point in their married life, and verbal abuse was the most common (n=332, 97.1%) and 94.6% physical abuse. 72.2% of the participants who were living in extended families and 50% undergraduates experienced sexual abuse by in-laws. 46.7% diploma holders were more prone to emotional abuse. Nurses, as compared to doctors, experienced more emotional and sexual abuse by in-laws. Participants' husbands who had completed their high school (39.9%) and graduation (39.4%) were more

common perpetrators of physical abuse. In univariate analysis, there was a significant difference between alcoholic husbands and verbal (p=0.005), emotional abuse (p=0.009), and substance abuse and physical abuse (p=0.015).

Conclusion: Domestic violence is considered an inhuman act but it is deeply rooted in the Pakistani culture. Socio-demographic factors were identified as one of the causative factors and the most prominent and persistent one was verbal abuse. Legal action against domestic violence should be taken and strictly implemented not only for housewives but also for professional women.

Keywords: Domestic violence, prevalence, Pakistan

14.78

TESTING PSYCHOMETRIC PROPERTIES OF AN INSTRUMENT DESIGNED TO MEASURE PAKISTANI URBAN WORKING MOTHERS' PERCEPTIONS ABOUT BREASTFEEDING SUPPORT

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Objective: Breastfeeding is an essential source of nutrition among young children; however, in Pakistan a gradual decline in prevalence of breastfeeding, especially among urban working mothers, has been reported. Previously conducted qualitative studies among Pakistani breastfeeding urban working mothers revealed that assuring exclusivity and continuation of breastfeeding is challenging for employed mothers if social and/or workplace environmental support is minimal or absent. The identified problem indicated a crucial need to assess availability of breastfeeding support for Pakistani urban working mothers by using a comprehensive, context specific, reliable, and validated tool in their national language (Urdu). In Pakistan, where no instrument is available for gauging the perceptions of breastfeeding urban working mothers about breastfeeding support, a need was felt to develop an instrument (in Urdu) and to test its psychometric properties. This study aimed at testing the psychometric properties of an instrument designed to measure Pakistani urban working mothers' perceptions about breastfeeding support.

Method: This methodological research was undertaken in five different phases. During phase I a preliminary draft of the instrument named Perceived Breastfeeding Support Assessment Tool (PBSAT) was developed by using the Socio-ecological model as a theoretical framework, reviewing literature, and referring to two United States based tools i.e. "Workplace Breastfeeding Support Scale" (WBSS) and "Employee Perceptions of Breastfeeding Support Questionnaire" (EPBS-Q). In Phase II the instrument was evaluated by seven different experts, and in Phase III the instrument was revised, translated, and back translated. In Phase IV, the tool was pilot tested among 20 participants and then modified on the basis of statistical analysis and participants' feedback. In Phase V, the refined instrument was tested on 200 breastfeeding working mothers recruited through purposive sampling from the government and private health care settings, including Jinnah Postgraduate Medical Center (JPMC), Karachi, the Aga Khan University Hospital (AKUH), Karachi, and three setups of the Aga Khan Hospital for Women in Karachi, Pakistan. The study was

undertaken after receiving approvals from the hospital heads and the Ethical Review Committees of the Aga Khan University, Karachi, and the Jinnah Postgraduate Medical Center, Karachi, Pakistan.

Results: A construct validity assessment through Exploratory Factor Analysis (EFA) supported that the PBSAT has two dimensions, which include “workplace environmental support” (Factor I with 12 items) and “social environmental support” (Factor II with 17 items). Reliability assessment revealed that the tool has an acceptable inter-rater reliability of 0.95, and an internal consistency reliability coefficient of 0.85. The two subscales of PBSAT revealed acceptable Cronbach’s Alpha of 0.86 and 0.77 for Factor I and Factor II, respectively. An analysis of mean scores for both the factors, with demographic variables of 200 study participants, revealed that the PBSAT is a useful tool and it could be administered among diverse groups of breastfeeding urban working mothers in Pakistan. *Conclusion:* The study was able to develop a 29-item based two dimensional tool (in Urdu) that has acceptable psychometric properties. The PBSAT is context specific, comprehensive and user-friendly, so it can be administered by health care workers, employers, policy makers, and researchers to improve the quality of services to breastfeeding urban working mothers in Pakistan. Further studies are required to evaluate the utility of this tool among semi-urban and rural Pakistani working mothers. In future, researchers can also identify the effect of presence/absence of support over continuation and exclusivity of breastfeeding among Pakistani urban working mothers.

Keywords: Breastfeeding, Working Mothers, Instrument

14.80 EXPERIENCES OF LACTATING WORKING MOTHERS AT A PRIVATE TERTIARY CARE SETTING OF KARACHI, PAKISTAN

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Objective: Pakistan has the second highest child mortality rates in South Asia, and in this region gradual decline in breastfeeding prevalence has been reported especially among urban and working mothers. In Pakistan, very little attention has been paid towards offering workplace support to breastfeeding working mothers. Review of published literature confirmed that previously no such research has been conducted to unveil the experiences of lactating working mothers in Pakistan. This study aims at describing the experiences of lactating working mothers and to gain insight about the facilitators and barriers of breastfeeding among these mother; as well as to seek recommendations from the lactating working mothers to improve their breastfeeding practices.

Method: While utilizing the qualitative descriptive design, nine full time lactating working mothers who met the inclusion criteria were selected via purposive sampling. Researcher collected data till the saturation met. Study participants were recruited from nine sub-units of a private tertiary care setting of Karachi, Pakistan. A semi-structure interview guide was utilized to collect data from the participants.

Results: Most of the study participants verbalized that it challenging to combine breastfeeding with employment. Analysis of data indicated that along with workplace environmental

support, maternal characteristics and her family support is equally essential to enable lactating working mothers to continue breastfeeding with employment. The findings further revealed that inadequate social and workplace support leads towards adverse outcomes for the breastfeeding working mothers and their babies.

Conclusion: This study suggested need to extend workplace and social support for working mothers to promote their breastfeeding practices.

Keywords: Breastfeeding, Experiences, Working Mothers

14.81 SEXUAL HARASSMENT AT WORK PLACE: ARE YOU SAFE?

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Objective: Shifting paradigm of globalization and liberalization has increased the women’s participation in the realm of work force to contribute to family income and beat the burden of growing inflation. In this journey, women are often endangered to face various obstacles; like sexual harassment. The focus of this paper is to identify the impact of sexual harassment at work place. Furthermore, it will propose to address the issue of sexual harassment at work place through proper education and training programs at organizational and at government level. *Method:* A systematic search of the literature was performed to analyze the case study for the period of January 2000 to December 2010; using Science Direct, Pub med & Medline. *Results:* Most of the literature revealed that sexual harassment at work place is prevalent in every society. Sexual harassment is considered as a traumatic event and the victim may end up in having physical and mental sufferings that hinders a person to work effectively. At an organizational level this may result in decrease work effectiveness and low staff morale. There is a desperate need for the organizations to address this matter. Training programs might be best utilized as a catalyst and intervention in removing harassment from the workplace. *Conclusion:* In conclusion, sexual harassment can be eradicated most effectively if these training programs are promoted in every organization and in every work place of Pakistan. It will improve the working environment; which ultimately lead to the overall productivity of the work. Thus it will definitely affect the growth and development of the country.

Keywords: work place , harassment , trainingprograms

14.82 PRECONCEPTION CARE- HEALTHY BEGINNINGS FOR WOMEN AND CHILDREN

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Objective: 190 million women become pregnant every year. Despite advances in medical care, 3.1 million newborns and 300,000 women die of pregnancy-related causes annually, and 2.6 million babies are stillborn. A substantial proportion of

mothers and newborns could be saved from death and severe morbidity if women received simple interventions before pregnancy. Prenatal care is sought after the critical period of fetal development, and therefore a shift is needed towards "Preconception Care" to ensure that adolescent girls, women, and their children are healthy from the beginning. Preconception Care includes any preventive, promotive or curative healthcare intervention provided to women of reproductive age, before the first pregnancy and between pregnancies, to improve their health and the health of their newborns.

Method: Systematic review and meta-analysis of observational and experimental studies, comparing women who had preconception risk factors or received preconception care with those who did not.

Results: Women who receive preconception care are more likely to adopt healthy behaviors, reduce their risk factors and have improved pregnancy and neonatal outcomes. For instance, they have a 24% lower risk of neonatal mortality, and are twice as likely to use safe delivery practices. Preconception care is effective when it is holistic, involves women and their partners, and is provided in health centers or community settings.

Conclusion: At any health visit, women of reproductive age should be asked whether they wish to become pregnant or are actively preventing pregnancy, as a way to initiate Preconception care and the continuum of healthy women, mothers and children.

Keywords: Preconception Care, girls/women, newborn/child health

14.83

INNOVATIVE FINANCING MECHANISMS FOR MATERNAL NEWBORN AND CHILD HEALTH AT DISTRICT LEVEL IN LOWER AND MIDDLE INCOME COUNTRIES IN SOUTH ASIA

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Objective: Each year 358000 women die of pregnancy and pregnancy related disorders and 9 million children die before their 5th birth day. More than 95% of these deaths occur in lower and middle income countries. Risk of dying is highest in the neonatal period. Financial barriers are the major cause of this high maternal and children mortality. Objective of this paper is "To find out the innovative financial mechanism to improve health care seeking and reduce maternal and child mortality".

Method: using Pubmed and Google Scholar database all published literature after 2005 related to financing mechanisms for maternal and child mortality reduction was reviewed systematically. Of 212 links 17 were put in the data extraction form and 5 articles were included in the review.

Results: Various innovative financing mechanisms which improved MNCH include innovative cash transfer, medical insurance, voucher schemes, user fee removal, transport costs, revenue from taxes, center to state financing of health and contracting out are among the mechanisms being used for improvements in maternal and child health. There is considerable evidence about the effectiveness of medical insurance, user fee removal and center-state financing while there is moderate to limited evidence regarding the other mechanisms.

Conclusion: there is need to increase the finances for the maternal

and child health. With scarce resources we need to identify the effective and efficient financing mechanisms for MNCH. Commitment, transparency and sectorial development are the pre-requisites for implementing and gaining improvements these financing mechanisms.

Keywords: MNCH, financing mechanisms, maternal and neonatal mortality reduction

14.84

PRECONCEPTION CARE - SUBSTANCE ABUSE PREVENTION AND LIFESTYLE CHANGES

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Objective: A shocking number of women in their reproductive years continue to consume caffeine, alcohol, tobacco or illicit drugs. For example, more than half of all pregnant women in the United States report alcohol use during pregnancy, and 40,000 babies are born with fetal alcohol spectrum disorder.

Method: Systematic review and meta-analysis of cohort and case-control studies. The review was carried out to determine the magnitude of risk that substance abuse in the pre/periconception period poses to women, and how this impacts pregnancy and neonatal outcomes.

Results: Pre/periconception alcohol exposure is non-significantly associated with a 30% increase in spontaneous abortion, 24% increase in NTDs and 20% increase in gastrointestinal anomalies. Interventions focused on Preconception counselling greatly reduce alcohol intake during the 1st trimester. Another preconception motivational intervention, consisting of counseling sessions and contraception consultation, significantly reduced the risk of an alcohol-exposed pregnancy. We found no significant association between paternal or maternal periconception use of recreational drugs and NTDs but a strong positive relation between maternal periconception substance abuse and the risk of gastroschisis. Our analysis showed that more than 300mg/d of periconception caffeine use is associated with a 31% increase in the risk of subsequent fetal loss. Preconception smoking increases the risk of preterm births by more than 2 folds. Preconception counseling leads to an almost 3 fold increase in women quitting smoking before pregnancy.

Conclusion: Providers should screen and identify women at risk for substance abuse. Preconception counselling has been proved to be effective in improving practices among women pertaining to their smoking habits. Both preconception counselling and behavioural interventions have led to a significant improvement in drinking behaviour and thus pregnancies affected by alcohol. What is needed now is to use this important information to upgrade these interventions to have stronger, longer-lasting and more widespread effects in terms of preventing the abuse of substances and thereby its sequelae, in this important set of the population.

Keywords: Preconception, substance abuse, counseling/ interventions

14.85
PRECONCEPTION CARE - AMELIORATING
ENVIRONMENTAL EXPOSURES

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Objective: An increasing body of scientific research provides disconcerting verification of the potential impact of environmental toxins (chemicals, occupational and non-occupational radiation) that greatly affect human reproductive health and human development.

Method: Systematic review and meta-analysis of cohort and case-control studies. The review was carried out to determine the magnitude of risk that environmental exposures, including radiation and chemicals (whether occupational or non-occupational), in the preconception period poses to women, and how this impacts pregnancy and neonatal outcomes.

Results: Occupational radiation exposure in women before conception leads to a significant 30% increase in 1st trimester miscarriages and a significant 29% increase in overall childhood cancers. Paternal X-ray exposure leads to significantly increased rates of fetal growth restriction and decreased birth weights. Data pertaining to the effect of environmental exposures on MNCH outcomes is at best limited. It shows a 27% increase in spontaneous abortions in those exposed to pesticides in the preconception period ($p < 0.0001$), especially spontaneous abortions in <12 weeks of gestation. Data also links living in a lead-polluted area to a 3-fold increase in congenital heart defects. Data points to a 10% increase in the risk of ALL in offspring of fathers exposed to various chemicals (paints, thinners, solvents etc) in the preconception period as compared to 44% when the mother was exposed.

Conclusion: An absolute deficiency of data exists to assess the possible relation between environmental exposures before conception and subsequent pregnancy outcomes. This clearly delineates the work for future research as countless environmental agents still need to be studied for their effects MNCH outcomes. Only then will comprehensive interventions to reduce exposure be designed and evaluated for a final formation of a sound policy dealing with this topic.

Keywords: preconception, environment, radiation

14.86
PRECONCEPTION CARE - GENETIC COUNSELLING

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Objective: Genetic diseases comprise an important set of diseases affecting children. Couples who delay childbearing or in a consanguineous marriage are at higher risk, but all parents potentially risk having a child with a birth defect or hereditary abnormality.

Method: Systematic review and meta-analysis of cohort and case-control studies. The review was carried out to determine the effect of genetic counselling/screening in the preconception period in reducing adverse pregnancy and neonatal outcomes. *Results:* Despite an extensive search we did not find studies relevant to the outcome of interest. Premarital screening service for thalassemia provided in Iran, was the only valuable evidence showing a 70% reduction in thalassemia-affected birth post-screening. There is otherwise a lack of literature on the provision of comprehensive genetic counseling to couples planning a pregnancy and also on the effectiveness of preconception genetic screening. However, review of literature for cystic fibrosis showed that majority of couples welcome the idea of a pre-pregnancy screening test.

Conclusion: We found limited evidence identifying the effectiveness of any genetic screening and counseling, provided in the preconception period, in dealing with outcomes in affected pregnancies. However, the success of Iran's thalassemia screening program as well as a general receptiveness amongst couples of such services, needs to be utilized by health policy makers in devising comprehensive genetic counseling to all couples planning a pregnancy and genetic screening services to women, keeping in mind the regional prevalence of genetic disorders.

Keywords: Preconception, genetic screening, genetic counselling

14.87
PRECONCEPTION CARE: CHRONIC DISEASES AND
MEDICATION USE

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Objective: Most women are unaware of how their pre-pregnancy health status affects their pregnancy outcomes, and many enter pregnancy with risks that are preventable, such as chronic medical conditions. Medication usage among pregnant women and women of reproductive age is common. Systemic Lupus Erythematosus was taken as the prime example of autoimmune disorders. Systemic lupus erythematosus (SLE) predominantly affects women in the childbearing age group, and thus the effect of pregnancy on the disease and vice versa is an important consideration in the management of these patients. Increasing numbers of treated individuals with inherited metabolic diseases are surviving childhood and henceforth considering their reproductive options. More women with phenylketonuria are becoming pregnant and need appropriate management as poor disease control is associated with a multitude of fetal consequences. It has been estimated that more than 80% of pregnant women take OTC or prescription drugs during pregnancy.

Method: Systematic review and meta-analysis of cohort and case-control studies. The review was carried out to determine the magnitude of risk that chronic medical conditions and medication use, in the preconception period, poses to women, and how this impacts pregnancy and neonatal outcomes. *Results:* Active SLE at conception was associated with

hypertension and pre-eclampsia, and active nephritis per say, was associated with maternal hypertension and premature birth. No relevant literature addressing interventions for reducing SLE-related pregnancy outcomes were found. Strict dietary control before conception in women with PKU, leads to an improved mean PHe level in the 1st trimester, the period of organogenesis and has a strong association with improved growth parameters (birth weight, head circumference). Current evidence for effectiveness of preconception care for women with epilepsy is encouraging but inconclusive. Amongst chronic medication usage extending into the periconception period: use of bronchodilators leads to a significant doubling of the rate of gastroschisis, especially the use of bronchodilators; use of any weight loss drug was significantly associated with an increased incidence of congenital anomalies in the fetus, especially heart defects; use of oral contraceptives led to no significant increase in spontaneous abortions or any fetal outcomes; use of vasoactive substances was linked to limb defects in the fetus. Current literature says attainment of a euthyroid status during the 1st trimester is essential for reducing thyroid related morbidity. Data for the effect of other medical conditions was limited to exposure during pregnancy and not specifically in the period under study. *Conclusion:* • Research into better preconception care plans for women with chronic medical conditions and more effective implementation of these plans is needed. medication use in the preconception period should aim to balance the maternal risk of uncontrolled disease and the fetal risk of possible teratogenic effects.

Keywords: Preconception, chronic diseases, medication use

14.89

EFFECTIVENESS OF METFORMIN VERSUS INSULIN FOR TREATING DIABETES IN PREGNANCY – A RETROSPECTIVE COHORT STUDY TO COMPARE MATERNAL AND PERINATAL OUTCOMES

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Objective: Metformin is increasingly being used to treat gestational diabetes mellitus (GDM) in our population either alone or in combination with insulin. The numbers of studies reporting on metformin use in GDM are still few and most are from the western world. This study was undertaken to compare the use of metformin with insulin for treating GDM in an urban Pakistani population.

Method: A retrospective cohort study was performed among women with singleton pregnancies diagnosed as GDM who were booked at the AKUH from January 2009 to June 2010. Maternal and neonatal outcomes and complications were assessed for women being treated with metformin and those being treated with insulin

Results: In our study of 110 patients, 53 had received metformin and 56 patients received insulin as the first line drug of treatment

for GDM. The mean birth weight was similar in both the groups; that is, 2.9 kg in the metformin group and 2.88 kg in the insulin group. Frequency of SGA was comparable; 5.7% in the metformin group and 9.3% in the insulin group (p value=0.71). A higher percentage of women in the insulin group developed gestational hypertension, 22.2% vs 13.7%, though, it did not reach statistical significance (p value=0.31). One neonate in the metformin group developed respiratory distress syndrome versus none in the insulin group. 7.8% of neonate in the metformin group and 3.6% in the insulin group were shifted to NICU (p value=0.42). *Conclusion:* Metformin is as effective as insulin in treatment of diabetes in pregnancy.

Keywords: Metformin, pregnancy

14.90

MATERNAL FACTORS INFLUENCING CHILD DEVELOPMENT – A THOUGHT FROM A DEVELOPING COUNTRY

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Objective: Children in developing countries are exposed to multiple risk factors for poor development. Among these, the maternal factors seem to play the most important role in the early development of the child.

Method: We focused on maternal risk factors to which children are exposed to from birth (possibly in utero) up to 5 years of age and that affect large numbers of young children in developing countries. These factors were divided into biological and social risks. Databases we searched were MEDLINE (PubMed), the Cochrane Review and the World Health Organization. *Results:* The maternal factors can be divided into biological and social factors. The biological factors are maternal age, nutritional status, stress and depression where as the social factors include poverty, education, parenting behavior and un-stimulating environments for the child development.

Conclusion: Children in developing countries are exposed to multiple risk factors for poor development. However, there is very little national data available. The maternal risks described in this paper are all modifiable and hence can prevent millions of children from poor development early on in their life. This grave problem will remain unless we take a stand and intervene. Countries like Pakistan can make a sound investment in the future by committing to early mother education and child development; reaching all young, disadvantaged children through high-quality and comprehensive programs. This is no easy task and will require the development of sustainable financing and policy generation to counteract the high cost of poor child development in terms of the economy and individual well-being.

Keywords:

14.91 EFFECTIVENESS OF INTERVENTIONS TO SCREEN AND MANAGE INFECTIONS DURING PREGNANCY ON MANAGING STILLBIRTHS: A REVIEW

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Objective: Infection is a well acknowledged cause of stillbirths and may account for about half of all perinatal deaths today, especially in developing countries. This review presents the impact of interventions targeting various important infections during pregnancy on stillbirth or perinatal mortality.

Method: We undertook a systematic review including all relevant literature on interventions dealing with infections during pregnancy for assessment of effects on stillbirths or perinatal mortality. The quality of the evidence was assessed using the adapted Grading of Recommendations, Assessment, Development and Evaluation (GRADE) approach by Child Health Epidemiology Reference Group (CHERG). For the outcome of interest, namely stillbirth, we applied the rules developed by CHERG to recommend a final estimate for reduction in stillbirth for input to the Lives Saved Tool (LiST) model.

Results: A total of 25 studies were included in the review. A random-effects meta-analysis of observational studies of detection and treatment of syphilis during pregnancy showed a significant 80% reduction in stillbirths [Relative risk (RR) = 0.20; 95% confidence interval (CI): 0.12 - 0.34] that is recommended for inclusion in the LiST model. Our meta-analysis showed the malaria prevention interventions i.e. intermittent preventive treatment (IPTp) and insecticide-treated mosquito nets (ITNs) can reduce stillbirths by 22%, however results were not statistically significant (RR = 0.78; 95% CI: 0.59 - 1.03). For human immunodeficiency virus infection, a pooled analysis of 6 randomized controlled trials (RCTs) failed to show a statistically significant reduction in stillbirth with the use of antiretroviral in pregnancy compared to placebo (RR = 0.93; 95% CI: 0.45 - 1.92). Similarly, pooled analysis combining four studies for the treatment of bacterial vaginosis (3 for oral and 1 for vaginal antibiotic) failed to yield a significant impact on perinatal mortality (OR = 0.88; 95% CI: 0.50 - 1.55).

Conclusion: The clearest evidence of impact in stillbirth reduction was found for adequate prevention and treatment of syphilis infection and possibly malaria. At present, large gaps exist in the growing list of stillbirth risk factors, especially those that are infection related. Potential causes of stillbirths including HIV and TORCH infections need to be investigated further to help establish the role of prevention/treatment and its subsequent impact on stillbirth reduction.

Keywords: Infections, pregnancy, stillbirth

14.92 IDENTIFYING BARRIERS IN PROVISION OF SAFE MOTHERHOOD: DO MIDWIVES OFFER A LOW COST ALTERNATIVE?

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Objective: Objective: To identify strategies needed to remove the barriers faced by midwives in provision of safe motherhood

for the reduction of maternal mortality. Background: One in every 89 Pakistani women dies due to causes related to childbirth. Midwives are recognized as the most effective health workforce in reduction of maternal mortality worldwide, especially in resource poor areas. Difficulties of recruitment and retention of midwives especially in rural areas makes management of maternity care difficult in Pakistan.

Method: Electronic databases (Pubmed and Pubget) were searched using review period January 2005 to March 2011. Search term used was "Midwives and Maternal Health Challenges". 46/101 articles were selected after review of abstracts. Only 9 studies conducted in low income countries were finally entered on a standardized data extraction form.

Results: Studies conducted in Nigeria, Liberia, Zambia, Morocco and Pakistan helped to identify the common barriers faced by midwives and include lack of professional competency, insufficient incentives and lack of recognition of midwives role in safe motherhood by health care system and society at large.

Conclusion: Change in health policies, quality midwifery training, increase in work incentives and recognition of midwives' vital role in society and in health care system are the most needed actions. Removal of existing barriers to midwives in provision of safe motherhood and utilizing midwives to the best possible extent, especially in resource poor settings is a low cost strategy to achieve MDG-5.

Keywords: Midwives, safemotherhood, low cost strategy

14.93 RISK FACTORS FOR HYPERTENSIVE DISORDERS IN PRIMIGRAVID HOSPITAL POPULATION

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Objective: Hypertensive disorders in pregnancy are one of the most significant causes of maternal and perinatal mortality and morbidity. As preeclampsia poses serious threat to maternal and fetal well being, it is imperative to identify factors that can predict it. However, the etiology of preeclampsia is still uncertain despite extensive investigation in this area. This study was conducted to determine factors associated with gestational hypertension in nulliparous women.

Method: Data was collected prospectively from 221 pregnant women with hypertension and 1640 control group for November 2006 to March 2008 as part of a larger study of primigravida delivering at the two hospitals. Baseline information was collected through a questionnaire at initial visit and remaining data was retrieved from the hospital records. Regression techniques were used to calculate odds ratio and risk ratio for the factors associated with HDP and adverse maternal outcomes.

Results: Women with a family history of hypertension had 38% greater risk of developing preeclampsia. Patients developing hypertensive disorders had a 65% greater chance of having complication like abruption or pulmonary edema. Parturient with a co existing morbidity like diabetes, or autoimmune disorders were 2.34 times more likely to have hypertensive disorders than women with no preexisting medical condition. Women with multiple gestations were 1.83 times more likely to develop preeclampsia. Likewise, primi-gravida with preeclampsia

had 83% greater risk of instrumental delivery. Similarly preeclamptic women were two times more likely to undergo emergency Caesarean section. It was observed that hypertensive women were 1.85 times more likely to have low birth weight babies and two fold more likely to deliver before 32 weeks than normotensive women.

Conclusion: Our study indicates that advanced maternal age, nulliparity, multiple pregnancy and existing co morbid, like renal disease and diabetes, are significant risk factors for developing preeclampsia in pregnancy. Women with preeclampsia are more likely to undergo Caesarean section, have low birth babies and more likely to deliver before 32 weeks, as compared to normotensive women.

Keywords: Pregnancy-induced hypertension, Gestational hypertension, Preeclampsia

14.94

RISK OF RETINOPATHY OF PREMATURITY IN NEWBORNS IN A TERTIARY CARE HOSPITAL IN KARACHI

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Objective: Retinopathy of prematurity (ROP) is a disease of premature infants. The worldwide incidence of ROP has been increasing steadily because of advances in neonatal care, especially in urban areas of developing countries. We assessed the risk of ROP and investigated its risk factors in a tertiary care hospital in Karachi

Method: We enrolled neonates (weighing \approx 2000 grams or having a gestational age of \approx 34 weeks) born or hospitalized in Aga Khan University Hospital Karachi between February 2010 and August 2011. Data were collected by a research medical officer on demographic variables (gestational age, gender) as well as clinical variables (supplemental oxygen, sepsis and respiratory distress syndrome, blood transfusion, phototherapy, severity of disease). An ophthalmologist carried out fundus examinations for all the subjects to ascertain the presence of ROP. Data were entered and analyzed using SPSS 19.0

Results: Between February 2010 and August 2011, a total of 122 infants were recruited in this ongoing study. The risk of ROP, assessed 4-6 week post birth, was 9.8%. All 12 infants who had ROP had a birth weight \approx 1300 grams or with a gestational age of \approx 29 weeks).

Conclusion: This preliminary analysis reveals that almost all cases of ROP in our setting were occurring among infants weighing \approx 1300 grams at birth or who had a gestational age of \approx 29 weeks.

Keywords: ROP, risk, neonates

14.95

FEASIBILITY, EQUIPMENT AND EFFECTS OF WORLD HEALTH ORGANIZATION (WHO) GUIDELINES FOR LOW BIRTH WEIGHTS INFANTS FEEDING IN PAKISTAN

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Objective: Birth weight is an important determinant of infant survival in developing countries. Babies weighing less than 2500g are at high risk of developing feeding problems. Interventions to improve feeding are likely to improve the immediate and longer-term wellbeing of infant and to have a significant impact on neonatal and infant mortality. The aim of this study is to evaluate the implementation of the guidelines on the knowledge and skills of mothers and health care providers

Method: Before and after design study, at a district and a sub district level hospital in Hyderabad. 120 babies were enrolled. 20 babies each in the weight category of 1000-1500, 1500-2000 and 2000 -2500grams respectively. 105 health care providers were also enrolled in the study. Initial baseline assessment includes: health care providers and mother's knowledge and skills of newborn feeding. Intervention phase involves training of health care providers and mothers and final end study evaluation phase testing the impact of training

Results: The mean gestational age was 35 weeks; mean birth weight were 1.7 and 1.8 in two groups respectively. Skills and knowledge of health providers were also evaluated by pre and post test assessment of the candidates. Improvement was seen in the knowledge and all components of the skills stations with p value $<$.001. However there was no significant difference in the knowledge and skill of the mother before and after the intervention

Conclusion: Implementing the WHO feeding guidelines can improve knowledge and skills of mothers and health care providers. Further operational research with larger sample sizes is needed to provide more robust estimates.

Keywords: Low birth weight, feeding guidelines, WHO

14.96

ROLE OF DIAZOXIDE IN MANAGING NEONATAL HYPOGLYCEMIA – A CASE SERIES

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Objective: Neonatal hypoglycemia is common in newborns, particularly on the first day of life. It is one of the most common problems seen in nursery and neonatal intensive care units, accounting to 3% to 29% of pregnancies. Our previous study identified 8% of neonatal hypoglycemia in AKU born babies therefore the aim of the study was to evaluate the role of

Diazoxide in the management of neonatal hypoglycemia.
Method: We retrospective reviewed twelve (12) neonatal cases treated with Diazoxide with definitive diagnosis of hypoglycemia in neonatal ICU of Aga Khan University hospital. Intravenous fluids along with hydrocortisone were started for hypoglycemia. Diazoxide 10mg/ kg orally was started for persistent hypoglycemia given until symptoms were resolved.

Results: Out of twelve babies, 9 were with term gestation, 6 were appropriate for gestational age, 4 intra uterine growth retarded and two large for gestational age babies. 83% required NICU care with sign and symptoms of sepsis. The hypoglycemic spell extended up to 30 days, mean insulin level was 10.45 and the mean duration of Diazoxide requirement was 23 days.

Conclusion: The use of Diazoxide in our neonatal population is found to be helpful in managing neonatal hypoglycemia and to avoid long term complications. Further studies are warranted to assess its efficacy amongst neonates.

Keywords: Case series, neonatal hypoglycemia

14.97 TRANSIENT HYPERINSULINEMIA OF INFANCY

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Objective: Hypoglycemia is a very common problem seen in the neonatal period, however hyperinsulinism (HI) is the most common cause of persistent hypoglycemia. We describe a case which represents the transient form of hyperinsulinemia in infancy.

Method: A male intrauterine growth retarded neonate was born near term. After initial stabilization, the patient appeared jittery with low blood glucose levels, which was managed with intravenous dextrose infusions. Hypoglycemia persisted and intravenous hydrocortisone was started. Insulin level was 14.6. Endocrine consult was generated and Diazoxide 10 mg/kg/day BID was started, after which hypoglycemia resolved and baby was subsequently discharged home on diazoxide.

Results: The exact mechanism of transient HI in various etiologies is not entirely understood. HI should be suspected in any infant with hypoglycemia who requires a glucose infusion of more than 8 mg/kg/min. Initial interventions for HI are conservative, and the first line of therapy is administration of adequate intravenous glucose. Diazoxide is drug of first choice followed by Octreotide. Partial or complete Pancreatectomy is considered as the final treatment option if medical therapy fails.

Conclusion: Hyperinsulinemic hypoglycemia can produce long-term central nervous system damage. Therefore all neonates with persistent hypoglycemia need an insulin level, and its appropriate management in order to decrease morbidity and mortality associated with neonatal hypoglycemia.

Keywords: Hyperinsulinemia, neonatal hypoglycemia

14.98 CONGENITAL CYSTIC ADENOMATOID MALFORMATION OF LUNG

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Objective: CCAM, congenital cystic adenomatoid malformation is rare disease. three types depending on size of the cyst. Sometimes spontaneously regress 15-66%, if not post natal resection is the answer. Early detection on anomaly scan and if not regress on follow up scan at 32 weeks, then postnatal confirmation by CT. CHEST, so early diagnosis, parents counselling and prompt surgical resection to avoid lethal complications.

Method: Patient came to Radiology department for anomaly scan as outside referral. Scan on TOSHIBA, MODEL XARIO, with 3.5mhz convex probe.

Results: Multiple cysts in right lung of >2 cm, did not regress on followup at 31 weeks, BABY delivered SVD in private hospital, shifted to NICU with respiratory distress, post natal x-ray chest and CT CHEST confirmed the diagnosis of CCAM, upper and middle lob rt. lobectomy done. H/PATH. confirmed CCAM with Muconium Aspiration.

Conclusion: Early detection of a congenital anomaly, follow up and parent counselling and early postnatal management avoids complications and helps a lot in women and child health worldwide.

Keywords: CCAM, ANOMALY SCAN, POSTNATAL CT CHEST

14.99 RISK FACTORS FOR ADVERSE OUTCOME IN LATE PRETERM BABIES

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Objective: Preterm delivery is one of the most important determinants of neonatal morbidity and mortality in developing countries. A broad range of neonatal complications have been documented in the growing literature related to late preterm infants. This study aimed to determine the adverse outcomes among late preterm infants, and to evaluate if the preterm infants are more prone to development of postnatal complications in relation to term newborn babies.

Method: Place and Duration of study: The study was conducted at the Pediatric Unit, AKUH during 1st June 2008 to 31st May, 2009. Method: The study included 100 late pre-term babies and 50 term-babies delivered during the study period. Data was collected on predesigned Proforma and included gestational age, birth weight, sex, and any complications/risk factors developed in the form of feeding difficulties, hypoglycemia, transient tachypnea, respiratory distress syndrome, temperature instability, presumed or confirmed sepsis, apnea, hypoglycemia, jaundice, and ventilator requirement. Patients' information was registered on that proforma, during the hospital stay as well as after 6 weeks. The data was sorted and analyzed on SPSS v. 16.

Results: Out of the 100 late pre-term babies, 97% survived during the first hospital admission, while 100% of the term babies survived. Hyperbilirubinemia requiring phototherapy remained the most common complication among the late preterm infants, being present in 48% and 14% in term infants. All cases of Intra-uterine growth restriction (IUGR) (n=23), Respiratory Distress Syndrome (n=16), and Presumed Sepsis (n=41) belonged to late pre-term infants. Feeding difficulties were reported in 18 % of late pre-termers, while it was present in only 2% of term babies.

Conclusion: The obstetric and neonatal care at the late preterm gestation presents many challenges to the health care team. The pediatrician has the task of caring for late preterm infant who may be seemingly healthy but is at higher risks than term infants for several neonatal morbidities, higher rates for readmissions, and higher neonatal and postnatal mortality rates. Thus, if properly identified, the risks can be handled more carefully, and complications can be prevented.

Keywords: late preterm, neonates, complications

14.100 PEDIATRIC ACUTE LYMPHOBLASTIC LEUKEMIA AT THREE HOSPITALS IN KARACHI- A PROSPECTIVE COHORT

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Objective: Acute Lymphoblastic Leukemia (ALL) accounts for nearly a third of cancer diagnosed among children = 15 years. The overall cure rate is around 80%, but the prognosis is poorer in developing countries. This study aims to recruit and follow over the period of five years incident cases of childhood ALL at three hospitals of Karachi.

Method: This study is being carried out at Aga Khan University Hospital, Children's Cancer Hospital and National Institute of Child Health in Karachi. Patient recruitment started in September 2009. Baseline socio-demographic, clinical and laboratory data was collected using a structured questionnaire. The patients were then followed through different phases of chemotherapy for development of toxicity, infections and other outcomes.
Results: So far 370 children with ALL have been enrolled. Mean age was 7.2 years. 30% were = 1 or =10 years. Two third were males. Nearly 50% were from Karachi. Fever and pallor was the major presenting sign (90% of cases). Hepatomegaly and splenomegaly was present in 70% of the patients. Mediastinal mass was present in nearly 12 % and CNS infiltration in 7 % of the patients. Mean WBC count was 48.3 *10⁹/ liter. 29% had WBC count > 50*10⁹/ liter. Upon immunophenotyping 83% were Pre-B ALL. Currently only 50 % of these children are alive and being followed.

Conclusion: Although the demographics and clinical characteristics of children with ALL are similar to those reported elsewhere but the outcome even at this early phase appears suboptimal.

Keywords: Childhood cancers, ALL, Leukemia

14.101 BURDEN OF STREPTOCOCCUS PNEUMONIA AND H.INFLUENZA IN PNEUMONIA AND MENINGITIS AMONG CHILDREN UNDER FIVE YEARS OF AGE

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Objective: Pneumonia and meningitis are major causes of death in children. H.influenza and strep pneumonia are two of the most common pathogens causing these diseases. We aimed to assess whether there was a change in the prevalence of these infections over the last decade.

Method: Data was gathered from various journals, indices and dissertations covering infections in the most densely populated cities in the country. This was then incorporated into tables and compared to previous data.

Results: In a study done in Karachi in 2006, 274 samples out of 791 children with LRTI's were found to be positive. 52 of these were found to be H.influenzae isolates whereas 29 were Streptococcus pneumonia. In another study, 84 samples out of 100 were positive. H. influenza was isolated from 12 and strep pneumonia from 67 samples. In a study done in Bahawalpur, there were 300 cases of meningitis out of which 65 were positive cultures. 21 samples were found to be strep pneumonia, whereas 26 were H.influenzae. In another study in Sindh, in 2006, out of 412 cases, 83 were positive out of which 32 were strep pneumonia and 48 were H.influenzae.

Conclusion: The results on the burden of pneumonia and meningitis infections caused by H.influenza and S.pneumonia are similar to the data from the previous decade. More work needs to be done on the prevention and cure of these potentially fatal infections.

Keywords: Pneumonia, meningitis, children

14.102 IMPACT OF MATERNAL EDUCATION ON COMPLEMENTARY FEEDING ON INFANT NUTRITIONAL OUTCOMES IN LOW MIDDLE-INCOME HOUSEHOLDS. A COMMUNITY BASED RANDOMIZED INTERVENTIONAL STUDY IN KARACHI, PAKISTAN.

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Objective: Malnutrition is a major preventable risk factor for disability and premature mortality in developing countries. Objective To evaluate the impact of maternal educational strategies (teaching sessions by trained lady health workers, verbal, pictorial and demonstrative) regarding appropriate complementary foods for infants on nutritional status of infants after 7½ months (30 weeks) of educational intervention

Method: The study was conducted at Bhainse colony (BC) - peri-urban setting of Karachi during Oct 2008 – Oct 2009. BC was divided into 10 geographically distinct regions; out of these ten areas intervention was randomly assigned to five areas. Study participants were the mothers who had an infant 2½ - 5 months old, and had not started complementary food or had

started within 7 days of enrolment. Mothers in the intervention group received three education modules teaching on complementary food at baseline, second and third visit. Outcome (weight, length and mid-upper arm circumference (MUAC) of infants) was measured at four time points; baseline, second, third and fourth visit (visits were 10 weeks apart).

Results: At the end of the study the mean weight of the infants was 350 grams more in the intervention group as compared to the control. Infants in the intervention group were 0.66 cm taller and their MUAC was 0.46 cm more as compared to the controls at the end of the study. There was a 5% reduction in the proportion of underweight and 10% less stunting in the interventional group as compared to the control group at the end of last follow up. However there was no difference in wasting between the groups at the end of the study.

Conclusion: For food secure population educational intervention on complementary foods to the mothers has a direct positive impact on linear growth of infants as they were heavier, taller and healthier as compared to infants of mothers who did not receive the special education modules on complementary foods.

Keywords: Complementary feeding, education intervention, linear growth

14.103

SOCIOECONOMIC DETERMINANTS FOR TOBACCO USE DURING PREGNANCY IN PERI-URBAN KARACHI, PAKISTAN.

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Objective: Tobacco use of any kind is associated with adverse maternal and neonatal outcomes and is an important modifiable risk factor. There is no data on tobacco use during pregnancy.

Method: This study sought to assess the prevalence of tobacco use among pregnant women in five low income peri urban settlements of Karachi, Pakistan. From January 2011 to April 2011 1209 pregnant women were enrolled in the last trimester of pregnancy. Responses were obtained related to use of tobacco anytime during pregnancy and socio demographic characteristics such as age of woman, woman and spousal education, ethnicity, parity, household characteristics and toilet use. Socio demographic factors associated with tobacco use were identified through logistic regression analysis.

Results: The overall response rate was 91.1% (1209). The overall prevalence of tobacco use was 18.4%. Among those only 13 (5.8%) gave a history of smoking tobacco while 216 women (96.9%) reported chewing tobacco anytime during pregnancy. Sindhi ethnicity was the strongest risk factor for any kind of tobacco use (OR 5.9; 95% CI 1.3-25.9). Women with increasing education were less likely to use tobacco (OR 0.89 per 1 year increase in education; 95% CI 0.85, 0.95). Moreover a small but significant association was seen with increasing parity (OR 1.1; 95% CI 1.05, 1.2).

Conclusion: There is a considerable burden of tobacco consumption during pregnancy. Smokeless tobacco use is more prevalent. Further attention is required to find

out consequences of tobacco use in pregnancy. Sindhi speaking women, those with lesser education, and higher parity require special focus.

Keywords:

14.104

ETIOLOGY OF SEPSIS IN YOUNG INFANTS IN LOW-INCOME COMMUNITIES OF KARACHI

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Background: Systemic infection in the newborn is the commonest cause of neonatal mortality. Sepsis is responsible for about 30-50% of the total neonatal deaths in developing countries. World Health Organization (WHO) estimates that globally, approximately 10% of all child deaths are attributable to neonatal sepsis or pneumonia. Neonatal sepsis is a high-risk disease and related mortality can largely be preventable by rational antimicrobial therapy. Blood culture is the gold standard for the identification of sepsis. Collection of blood cultures prior to antibiotic administration offers the best hope for identifying the organism that causes severe sepsis in neonates.

Objective: To determine the etiology of sepsis in young infants in low-income communities with high proportion of home births.

Study Design: Blood cultures were aseptically collected from babies with possible serious bacterial infection who were seen in our community study clinics in Karachi. Collected blood was injected into the Peds Plus bottle, and transported to the Paediatric Infectious Disease Research Lab under controlled temperature and monitored transportation conditions. Bottles received were incubated in the continuous monitoring BACTEC 9050 system within 2 hours of collection for 7 days. In order to determine the exact volume of blood obtained each bottle was weighed before inoculation and after inoculation in the laboratory using a well-calibrated and sensitive scale. Bottles with no growth after seven days were regarded as negative. Positive blood culture bottles were processed for Gram staining and sub cultured on appropriate microbiological media. Identification of bacteria done by biochemical and serological methods. Antimicrobial susceptibility of all isolates is determined by Kirby Bauer disk diffusion method according to Clinical Laboratory Standard Institute guidelines (CLSI).

Results: 850 blood culture samples were received, and 57 (6.7%) grew an organism considered a pathogen. Among 57, there were 10 Pseudomonas, 9 Acinetobacter, 6 Campylobacter species, 4 Escherichia coli, 4 Streptococcus pneumoniae, 3 beta-hemolytic streptococcus group A, 3 Enterococcus species 1 Streptococcus group D, 3 Staphylococcus aureus, 3 Klebsiella pneumoniae, 3 Salmonella species and 1 Clostridium perfringens.

Conclusion: Young infants in communities with a predominance of home births have an unusual spectrum of pathogens. Rapid transport is key to enhancing yield.

Keywords: Possible Severe Bacterial Infection, Blood Culture

15.2 PHYSICIAN SATISFACTION SURVEY ON CONTINUING MEDICAL EDUCATION

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Objective: This study aimed to assess physician satisfaction for continuing medical education (CME) events at Aga Khan University, Pakistan over three months.

Method: A survey to assess the quality of CME events was offered using a questionnaire based on the Multi-item Likert scale. The post-event feedback form was distributed to n=900 participants attending various CME activities. Descriptive statistics were performed on the responses obtained. A rating of 3 or more points was defined as satisfactory; rating lower than 3 was defined as unsatisfactory.

Results: From a total of 800 forms received, 728 were completely filled; these 81% were included in the study. More than 90% of the participants rated the CME activity as "satisfactory" (= 3 points) for appropriateness of the stated objectives of the session; content fitting the objectives; presentation at the level of understanding; facilitator-learner interaction; acquisition of new knowledge; time management; responses to queries, and administrative measures. Approximately 10% of the participants rated the CME activity as "unsatisfactory" (< 3 points) for the aforementioned variables.

Conclusion: Though, level-1 of Kirkpatrick's model does not guarantee learning and hence exhibits unclear picture of the effectiveness of CME. However, it was applied to assess physician satisfaction in this study as evaluation through other levels was quite challenging and is influenced by a large number of other factors. Moreover, this study was limited to a single university setting. This study would help CME providers plan improvements for future continuing medical education activities. This evaluation model would be a source of motivation for other professional bodies within the region to adopt it as a tool to assess physicians' satisfaction with CME events.

Keywords: Continuing Medical Education, Physician, Survey

15.3 CME THAT IMPACTS MOST PHYSICIANS: A SURVEY

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Objective: The purpose of this study was to objectively assess the best type of CME activity that made the most impact on the physicians' behavior in changing their practices and to derive future needs for planning effective continuing medical education (CME) activities.

Method: This paper presents a survey. A questionnaire was designed, pilot-tested and administered in a CME session to all the health physicians of a private medical university in Sind province of Pakistan. The questionnaire incorporated seven core items that assessed the impact of different types of CME activities on the physicians. The respondents rated the impact of CME

based on their competence, performance, patient care processes and management on a five point Likert scale. Respondents' responses in terms of type, committed time, usefulness, sponsorships and settings were also analyzed.

Results: A total of 194 health physicians completed the questionnaire (response rate = 100%), 56% of the responses were from female physicians. A majority of the respondents in their replies ranked local large-group lectures, symposiums and workshops higher than journal clubs, conferences and on-line CMEs. More than half of the respondents rated the impact of CMEs on a five point Likert scale as good or very good. This was in relevance to increase in their competence, performance, patient care processes and change in management style.

Conclusion: The data generated through the survey is subject to desirability bias and may over-represent the responses. The other limitation was the single university setting. The methodology can thus be adaptable by CME planners within the region to assess the impact of the current CME activities in improving physicians' competence and professionalism, and in designing effective academic activities for future. There is no study that demonstrates the impact of the types of CME on physicians in the Pakistani medical profession and hence is of high interest.

Keywords: Continuing medical education, physicians, Pakistan

15.8 CONTENT AUDIT OF DRUG ADVERTISEMENTS IN PAKISTAN

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Objective: There is evidence that irrational pharmacotherapy is increasingly encountered in developing countries due to unethical pharmaceutical promotion (1, 2). Anecdotal evidence suggests that information provided to physicians in drug advertisements is inaccurate. It is important to study the contents of drug advertisements as they influence healthcare providers' prescribing behaviour

Method: A sample of 120 drug advertisements was drawn by non-probability convenience sampling from among the stalls of 50 pharmaceutical companies participating in an exhibition in Karachi, Pakistan. 23 belonging to the NSAID drug group were selected and evaluated on whether they met guidelines for ethical advertisements as laid down in the Drugs Act, 1976.

Results: Only 5 out of the 23 advertisements met at least 14 out of 16 criteria for ethical advertisements as given in the Drugs Act, 1976.

Conclusion: Pharmaceutical advertisements subtly influence the prescribing behaviour of health providers and therefore affect the end user of these drugs, the patient. Prescription of irrational and/or harmful drugs is both unethical and dangerous. The competent authorities must actively monitor advertisements to ensure that they comply with the law, and impose penalties in cases of non-compliance. It is also important to teach our physicians how to analyse the contents of advertisements to enable them to meet their moral and professional obligations to their patients.

Keywords: Drugs, Pakistan, Audit

15.10

HOW SELF-EFFICACY AFFECTS THE PERFORMANCE OF LEARNER?

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Objective: The objective of this paper is to discuss the types of attribution that causes learners to make judgement (i.e. self efficacy) about academic success or failure or about a specific task.

Method: This paper discusses how self-efficacy fluctuates in different situations that learner encounters and how it can be enhanced and controlled.

Results: This paper projects how learners should engage themselves in the strategic, step-by-step learning and should attribute their academic success or failure with the presence or absence of strategic approaches.

Conclusion: All types of attribution based on which learners make their judgement (i.e. self efficacy), about academic success or failure will affect their capabilities to deal with different realities. This judgement influences learners to choose what to do, how much effort to be invested in the activity, how long to carry the phase of disappointment, and whether to approach the task anxiously or with assurance. This paper provides the background of the influence of locus of control on the performance and efficiency of the learner in this competitive community.

Keywords: self-efficacy, learners, attribution

15.11

CONTINUING MEDICAL EDUCATION AND PHARMACEUTICAL INDUSTRY

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Objective: The objective of this paper is to discuss the relationship between the continuing medical education providers (academia) and industries.

Method: This paper examines the importance of funding support by the industry for CME activities.

Results: The importance and provision of the funds from the pharmaceutical industry for CME promotion in our part of world is determined and not to be neglected. However, we submit this fact that the future of all continuing medical education depends on pharmaceutical support and the providers are heavily dependent on the pharmaceutical industry to remain in action.

Conclusion: Medical education and profession is regarded as a moral of enterprise based on a blind faith between the physician and the patient. The funding support by the industry should not bind or influence physician's prescription for any reason. To be trusted, medicine must be free of all such dependency; it should be accountable only to the society it serves and to its own professional standards. The relationship between the pharmaceutical industry and the academia is coming under

increased scrutiny, for which Pakistan is in dire need of National commercial support policy for defining the collaboration and transparency in the interactions. Proper compliance between the CME provider and the pharmaceutical industry would gain more respect and distinction between the two, and would lead to healthier and more honest relationships.

Keywords:

15.13

PREVALENCE OF MALNUTRITION IN CHILDREN OF LESS THAN 5 YEARS OF AGE IN A KACHI ABADI IN THE REHRI GOTH IN KARACHI, PAKISTAN.

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Objective: Background: Prevalence of stunting and wasting is 32.50% and 16.5% respectively in rural areas of Pakistan which is higher in comparison to the urban areas. In Pakistan malnutrition is not simply a health hazard but also a serious impediment to national development. There is no scientific data available on prevalence of malnutrition among children under five years of age in rural area of Rehri Goth, Karachi. The present study was designed to assess the prevalence of malnutrition and to identify the risk factor/factors specific to this particular community. *Objective:* The objective of this study is to determine the prevalence of malnutrition in children of less than 5 years of age in Rehri Goth through a 30-day cross sectional survey

Method: The 30- day cross sectional survey was undertaken in the month of January, 2011 at a local child health centre of Aga Khan University in Rehri Goth, Karachi. Various anthropometric measures, clinical and dietary information using a standardized questionnaire provided by the Department of Community Health Sciences, AKUH were collected. The responses were given by mothers of the children.

Results: Results: Out of 70, 24.3% were at/or below 5th centile, 12.9% were at 10th centile, 25.7% were on 25th centile and remaining 14.3%, 11.4%, 5.7% and 5.7% were on 50th, 75th, 90th and 95th centiles respectively. The average age for weaning was about 9-10 months, and the first solid food was banana in children followed by biscuit, rice and ready-made cereals. Average age at which children started walking was 13-15 months. 69.2% of the children had history of recurrent diarrhea and 70% of them had respiratory tract infections including seasonal allergic reactions

Conclusion: Conclusion: Proper health and nutritional guidelines should be introduced into the community in order to maintain high levels of nutrition in the pediatric age group. Early intervention and education of the community by a dietitian is advised for the community.

Keywords: Prevalence, malnutrition, children

15.14**AWARENESS OF THERMOLUMINESCENT DOSIMETER (TLD) IN RADIATION WORKERS & AVAILABILITY OF RADIATION PROTECTION DEVICES IN DIFFERENT ORGANIZATIONS**

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Objective: Increasing awareness of the risk of ionizing radiation exposure to health workers has led to numerous changes in practices, radiation doses of occupational personnel exposure from diagnostic x rays, therapeutic installations, and patients were measured using thermo luminescent dosimeters and the awareness of TLD should be adequate in radiation workers because of biological effects of ionizing radiation. A thermo luminescent dosimeter, or TLD, is a type of radiation dosimeter. A TLD measures ionizing radiation exposure by measuring the amount of visible light emitted from a crystal in the detector when the crystal is heated. The amount of light emitted is dependent upon the radiation exposure. On the other hand our survey also demonstrated the availability of radiation protection devices (shielding) in different organizations, because these devices are one of the basic requirement of the radiation workers.

Method: The authors develop questionnaire regarding basic knowledge of TLD & check list of the radiation protection devices which are available in their organization. Prospectively, radiation workers of different tertiary care hospitals (AKUH, Dr. Ziauddin Hospital, and JPMC and CIVIL Hospital) are evaluated.

Results: Out of 120 questionnaires that were sent out in two groups 100 (83.3%) filled out. The awareness level of TLD among radiation workers in group A was found to be 77% and 52 % in group B. The availability of radiation monitoring device was 95 % in both groups and the availability of radiation protection devices in Groups A were 83.5% and in Group B were 36 %.

Conclusion: The Lead aprons were available in both groups but rest of devices varies in private and government hospitals. Need to increase the awareness of TLD/film badge and the role of ALARA and LMP among the radiation workers. Awareness and training options are better for private than government hospitals.

Keywords: Radiation

15.15**IMPACT OF RADIOGRAPHER'S PERSONALITY TRAITS ON PATIENTS AND THEIR LEVELS OF SATISFACTION WITH THE RADIOLOGICAL SERVICES**

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Objective: Radiographers have much patient interaction, so they must possess excellent communication skills, a dependable personality with mature and caring nature. Radiologic services are offered in various settings such as CT, MRI, Nuclear Medicine,

General Radiography, Portable radiography, Mammography and ultra sonography. The purpose of this study is to evaluate the impact of radiographer's personality on patients and also measure the level of patients' satisfaction with radiological services
Method: The study was conducted in Radiology department of Aga Khan University hospital Karachi, Pakistan. Radiographers' personality profiles and level of patients' satisfaction with radiological services were collected by using questionnaire that were filled by patients or attendants accompanying them for the radiological procedure. Questionnaire were filled just after completed the exams.

Results: A total of 250 questionnaires were sent out of which 200 (80%) responded, 168 (84%) of them agreed on the impact of personality of radiographers, 149(74.5 %) responders showed their satisfaction on radiological services. The remaining 51 (25.5%) were unsatisfied due to lack of communication and patients' waiting time, radiographers attitude and their attire.

Conclusion: we found that patients not only focus on the technical skills but also personality of radiographer. The appearance, responsiveness an communication do have an impact on the patients and increase their satisfaction level. We should focus on appearance communication and responsiveness because they can increase their satisfaction level

Keywords: Radiographers, services

15.16**INTRAVENOUS CONTRAST EXTRAVASATION; FREQUENCY AND OUTCOME OF CONTRAST EXTRAVASATION INJECTED THROUGH POWER INJECTOR DURING C.T SCANS EXAMINATION**

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Objective: Extravasation is leakage of fluids, drugs, or solutions from a vein into the surrounding tissue during intravenous administration. It can occur during hand or power injection. Extravasations can produce mild symptoms such as pain and swelling and can result in severe symptoms such as limitations in extremity movement and even surgical intervention can be done. Faster flow rates protocols, e.g. cardiac CT work, biphasic scans can be a cause of contrast extravasations and these extravasations are causing increased morbidity.

Method: This retrospective study was carried out for examinations between 1st June 2008 to 30th may 2010, conducted in CT scan suite Radiology Department Aga khan University Hospital. The data was collected through extravasation data form and radiology information system (RIS) Aga khan hospital Karachi.
Results: Total number of contrast studies was 10920. The total patients suffered extravasations of contrast were 66, which consisted 0.6% of the total sample. Out of these 66 patients 30 (45.5%) were male and 34 (51.5%) were female. Children below 15 years consisted of 2 (3%) in numbers. the amount of extravasations were of 20- 30 ml in 80% of the patient. the reason behind the contrast extravasation was improper I.V

canulation and most of the patients had undergone chemotherapy.
Conclusion: International reference benchmark of contrast extravasation department of radiology university of Michigan health system 1 were 0.7%. Extravasations of nonionic iodinated contrast medium results only rarely in moderate or severe adverse effects, and these usually occur only when large volumes of contrast medium are injected through power injector. Good canulation and monitoring of patient during injection can result in reduced number of contrast extravasations.

Keywords: IV, CT scan, power injection

15.17

A CLINICAL AUDIT OF THE HEALTH CARE PERSONNEL'S COMPLIANCE FOR COMPLETING TRANSFUSION REACTION FORMS.

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Objective: The reporting of adverse transfusions reactions is an essential component of hemovigilance and allows a rapid and thorough investigation leading to a corrective action. If a blood transfusion reaction has occurred, a completely filled form along with EDTA blood sample and a sample of urine should be sent to the blood bank within 1 hour. This audit was conducted to assess the compliance of health personnel for sending completely filled blood transfusion reaction forms accompanied by the required samples. The sub-aim was to evaluate the frequency of reported transfusion reactions.

Method: The study was conducted for three months from 1st April 2010 till 30th June 2010. A proforma was made and 29 transfusion reactions were evaluated. Compliance was assessed by grading each form based on an arbitrary system. A compliance of 50% was considered as being acceptable.

Results: Majority of the forms (79.3%) were filled by other health care personnel (nurses and other paramedical staff). In 15 (51.7%), information regarding the location of the patient, the component and the amount transfused, the signs and symptoms were missing. Most of the forms (93%) were in legible handwriting. Only 20 blood bags, 19 urine samples and 23 EDTA samples were sent to the blood bank within 1 hour. All the forms had a compliance level of above 50%.

Conclusion: Even though all the forms had compliance above 70%, only 8 forms had a compliance of 100% and there is room for improvement. A re-audit will then be undertaken to assess the compliance after taking appropriate measures to educate the health care personnel.

Keywords: Transfusion, audit, compliance

15.18

A COMPARATIVE REVIEW OF NEONATAL HYPERBILIRUBINEMIA: G6PD MEDITERRANEAN VARIANT VS. G6PD REPLETE NEWBORNS

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Objective: There is a strong correlation between G6PD deficiency and neonatal hyperbilirubinemia with a rare but potential threat to devastating acute bilirubin encephalopathy. G6PD deficiency was observed in 4-14% of hospitalized icteric neonates in Pakistan and G6PD 563C-T is the most frequently reported variant in this population. The current study aimed at observing the hospital course of neonatal hyperbilirubinemia secondary to G6PD 563C-T mutation and comparing the same with G6PD replete babies.

Method: We reviewed medical records of 227 icterus babies [33 G6PD deficient and 194 G6PD normal] for clinical spectra and laboratory course during their hospital stay. G6PD variants were analysed in deficient babies through RFLP-PCR.
Results: G6PD 563C-T and 131 C-G were respectively observed in 21 (62%) and three (8%) babies. DNA of 10 (30%) newborns remained uncharacterized. In sharp contrast to G6PD normal neonates, babies with 563C-T variant had significantly lower enzyme activity (mean \pm 1SD; 0.3 ± 0.2 U/gHb vs. 13.9 ± 4.4 U/gHb, p-value 0.000) reaching higher peak values of mean total serum bilirubin levels (mean \pm 1SD; 16.7 ± 9.0 mg/dl vs. 13.9 ± 4.5 mg/dl, p-value 0.008) and sooner after birth (mean \pm 1SD 2.9 ± 1.6 vs. 4.4 ± 2.5 days p-value 0.008). No statistically significant difference was observed in mean weight, age at presentation, hemoglobin, reticulocyte count, TSH assay, hospital stay and in frequency of phototherapy or blood exchange in the two groups.

Conclusion: We concluded that G6PD 563C-T mutation carried a significant risk of early and moderate bilirubinemia in neonates. Since this variant is associated with very low enzyme activity, G6PD assay should be a mandatory neonatal screening in regions having a high frequency of G6PD Mediterranean.

Keywords: G6PD variants, G6PD Mediterranean, Neonatal Hyperbilirubinemia

15.21

FIBEROPTIC INTUBATION IN A PEDIATRIC PATIENT WITH SEVERE TEMPOROMANDIBULAR JOINT (TMJ) ANKYLOSIS: A CASE REPORT.

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Objective: The anesthetic management of children with craniofacial abnormalities presents a real challenge for the anesthesiologist. Awake fiberoptic intubation with topical anesthesia in anticipated difficult airway is regarded as the safest

approach. But patient's co-operation is essential so it is not an ideal option for children. In this case report, we are reporting the case of an eleven year old child who was a diagnosed case of bilateral temporomandibular joint (TMJ) ankylosis. *Method:* The child was scheduled for bilateral gap arthroplasty with left sided coronoidectomy under general anaesthesia Her mouth opening was severely reduced along with receding chin. We decided to proceed with awake fiberoptic intubation under regional anaesthesia with the presence of ENT surgeon in the operating room for emergency tracheostomy if required. The child became uncooperative in the OR, so inhalational induction was done with Sevoflurane in 100% oxygen. Sevoflurane is an ideal agent for inhalational induction and has an important role in management of difficult airway because the depth of anaesthesia can be rapidly altered and the patient can be awakened if airway cannot be controlled.

Results: Our case was successfully managed.

Conclusion: We conclude that adequate sedation along with topical airway anaesthesia is essential for successful fiberoptic intubation in pediatric age group.

Keywords: temporomandibular joint (TMJ) ankylosis, Fiberoptic intubation , sevoflurane

15.22

EXPERIENCES OF NURSES CARING FOR PROLONGED-STAY PATIENTS IN POSTANESTHESIA CARE UNIT AT THE AGA KHAN UNIVERSITY HOSPITAL, KARACHI.

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Objective: The role of the postanesthesia care unit (PACU) is to provide short term monitoring of patients following surgery, until recovery from the anesthesia. However, transfer of patients from the PACU to their designated units may be delayed due to various reasons. The percentage of prolonged-stay (> 2hours) patients in the PACU has progressively increased from 18% to 27% per month, from 2007 to 2009, at the Aga Khan University Hospital (AKUH). The purpose of the study is to explore the experiences of PACU nurses caring for prolonged-stay patients in PACU at AKUH, Karachi.

Method: A qualitative descriptive-exploratory study aimed at exploring the experiences of six nurses working in the PACU at a tertiary care hospital was employed. The data was collected using semi-structured interview guide.

Results: The data were grouped into categories and subcategories, and an overarching theme was derived from content analysis. The content analysis generated three categories: (1) organizational factors; (2) general effects; and, (3) recommendations. An overarching theme that weaved through the data was 'factors impacting quality patient care'.

Conclusion: The major recommendations by the participants of this study were: (1) ensuring the establishment of a separate

PACU for critical patients; (2) relieving nurses of the many indirect tasks and assigning these duties to the support staff so that the PACU nurses can spend more time in direct patient care and (3) assigning a dedicated team comprising an anesthetist and surgical doctor, exclusively for the PACU.

Keywords: Experiences, postanesthesia, prolonged-stay

15.23

COMPETENCE OF HEALTH CARE PROFESSIONALS IN CARING OF HEPATITIS C PATIENTS: BLESSING AND DISTRESSING

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Objective: Background: As a chronic disease, Hepatitis C impedes patients' physical, psychosocial, financial, and emotional wellbeing throughout their illness. Competence of health care professional, especially their communication skills and attitude towards Hepatitis C may help to ease or add to the burden of this disease for patients and their families. Although few studies are available about the interactions of health care professionals with hepatitis C patients and caregivers, little is known about this phenomenon in the developing countries including Pakistan. *Objective:* This poster will particularly focus on the competence of health care professionals from the perspective of patients and caregivers.

Method: Method: Using descriptive exploratory design, data were collected through in-depth interviews, from eight caregivers and 10 patients of hepatitis C. Interviews were tape recorded and transcribed verbatim; manual content analysis was performed for extracting themes and categories.

Results: Findings: Data was organized into three categories i.e. knowledge, skills, and attitude. All the categories were subsumed under the theme of 'Blessing with Adversity'.

Conclusion: Conclusion: Findings of this study reveal that appropriate understanding of hepatitis C is critical for health care professionals of Pakistan, not only to alleviate patients and caregivers suffering but also to reduce the prevalence of hepatitis C.

Keywords: Competence, health care providers, hepatitis C

15.25

IMPLEMENTATION OF MSBOS (MAXIMUM SURGICAL BLOOD ORDERING SCHEDULE) AND IMPACT OF PHYSICIAN'S EDUCATION ON BLOOD UTILIZATION.

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Objective: MSBOS for the institution was designed in 2000 through blood utilization committee when it was observed that transfusion practices were without scientific reasons. The objective of the study was: i) To observe the impact of MSBOS and that of physician's education on utilization of blood. ii) To compare C/T (cross-matched to transfused) ratio prior to and after implementation of MSBOS.

Method: This was a retrospective study conducted at Aga Khan University Hospital. Data was retrieved through ISD. The variables analysed included number of elective surgeries performed, number of transfusion done and number of red cells cross matched and transfused (C/T ratio). These variables were measured in 2000 and then again in 2010. Patient's and physician's identification were kept confidential.

Results: In 2000, the C/T ratio observed for C-section, TURP, total knee replacement and CABG were 32, 22, 11.42 and 4.77 respectively. In 2010, total no: of C-section performed were 416 out of which 43 were transfused blood. In CABG out of 370 surgeries, 303 patients were transfused, in TURP 4 out of 155, in laproscopic cholecystectomy 9 out of 440 and in total knee replacement 6 out of 40 were transfused. The C/T ratio in majority of these surgeries was between 0-1.

Conclusion: Significant impact of implementation of MSBOS was seen with marked reduction in the utilization of blood and the C/T ratio. This is an indirect evidence of the improvement in the transfusion practices of physicians.

Keywords: MSBOS, CT ratio, surgeries

15.26

MANAGEMENT AND OUT COME OF ESOPHAGEAL ATRESIA WITH AND WITH OUT TRACHEOESOPHAGEAL FISTULA IN THIRD WORLD COUNTRY. 10 YEARS EXPERIENCE.

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Objective: The study aimed to show the results of tracheoesophageal fistula with and without fistula, management in third world country like Pakistan.

Method: A retrospective study of 10 years duration from January 2001 to December 2010 was conducted. Cases included, all cases born at our hospital and operated for esophageal atresia and excluded children who have operated outside our hospital or children in which we haven't done any surgical intervention.

Results: There were 28 neonates enrolled. 18 males and 10

females. 7/28 had suspicion of esophageal atresia antenatally. Commonest antenatal finding was polyhydromnias with small stomach. 17/28 (57%) children were full term neonates. The mean birth weight was in range of 1.2 kg to 4.0 kg. 2 children had right sided aortic arch. 6/28 of neonates operated on 3rd day of life. Most common type of fistula was type C 25/28 (88%) followed by type A 2/28 (7%) and type E 1/28 (4%). All of them had three stage repair. Majority of neonates had contrast study done on 7th postoperative day; there was only one case of anastomotic leak postoperatively, managed conservatively. 4/28 neonates had anastomotic narrowing (18%) which did not require dilatation. Our mortality rate was (7%).
Conclusion: Preoperative birth weight and gap between proximal and distal pouch is a strong indicator of prognosis of. A good NICU care will lead to good postoperative results.

Keywords: Congenital tracheoesophageal fistula, neonates, NICU

15.27

BOMB BLAST INJURIES IN CHILDREN, ARE WE PREPARED TO TAKE THE CHALLENGE?

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Objective: In Pakistan, suicide bombing besides victimizing military personnel, civilians including children, is becoming a relevant and massive health problem and the human and economic costs of the injuries are tremendous. The spectrum of paediatric injuries seen after a bomb blast is poorly documented. Objectives: The aim of this study is to describe the spectrum of injuries and their management in children in suicide bombings in Pakistan.
Method: A study was conducted in which all children younger than 14 years, who were injured during the suicidal blasts from December 2009 to June 2010 in Karachi, Pakistan who presented at our hospital, was included.

Results: Total 181 casualties reported, 31 of them were children. 23 patients had shrapnel injuries involving the exposed body parts including cornea. 8 patients had injuries on their unexposed body. Major injuries are two patient had Intra abdominal pallets one had Injury to small gut other injuries are six children had Intra muscular pallets one had Intra articular pallets in knee, six had Eye involvement two had Injury to pinna and one child has wrist drop. Twelve children had minor injuries. Mean hospital stay was 11 days.

Conclusion: The patterns identified by our study are different from those in adults and could be used to better equip our hospitals for management of such injuries in case of an adverse event, such as a bomb blast in the city. The challenge is to provide appropriate treatment in spite of the potential severity of injuries.

Keywords: Bomb blast, blast wave, minor injuries

15.28 SUCCESSFUL MANAGEMENT OF GIANT OSTEOSARCOMA OF THE CHEST WALL

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Objective: Primary sarcomas constitute a large group of tumors that occur in the lung, mediastinum, pleura, and chest wall. Osteosarcoma is an example of a sarcoma that has an incidence of approximately 5.6 / 1,000,000 children less than 15 years of age. They are usually osseous in origin and 60% of the cases present between the ages of 10 and 30. Primary osteosarcomas arising from the chest wall are a rare occurrence. Appropriately placed biopsies along with the use of radiology is essential for the diagnosis of osteosarcoma of the chest wall, and hence differentiate it from Ewing's sarcoma, rhabdomyosarcoma, chondrosarcoma, PNETs, other sarcomas and metastasis from a range of primary malignancies.

Method: We report a case of a 13 year old female who presented with complaint of a progressively increasing large swelling in the left breast along with a history of weight loss. A CT scan was done which showed a bulky, lobulated calcified mass involving the left breast and measuring 12x7 cm. The entire tumor along with the left lung, the 2nd to 7th ribs, the pericardium, and the posterolateral portion of the diaphragm was resected and sent for histopathology. Reconstruction of the chest wall defect was done with prolene mesh and latissimus dorsi flap. On histopathology an intramedullary osteosarcoma of the giant cell rich type of most probable rib origin was reported.

Conclusion: Osteosarcomas commonly involve the metaphyses of long tubular bones, especially the distal femur, proximal tibia or proximal humerus. The chest wall is an uncommon site for primary sarcomas and represents 6% to 7% of all cases, as was seen in our patient. For treatment of the patient, surgical removal of the primary tumor generally occurs after treatment with neoadjuvant chemotherapy, which is followed by postoperative chemotherapy. Primary chest wall tumors are generally invasive, often invading through the full-thickness of the chest wall and extensive excision with clear margins is mandatory. These patients subsequently need bone and soft tissue reconstruction.

Keywords: Osteosarcoma, Chest wall tumor

15.29 OUTCOME OF SURGICAL REVASCULARIZATION FOR LOWER EXTREMITY ARTERIAL TRAUMA

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Objective: To determine the outcome of surgical revascularization for lower extremity arterial injuries (LEAI) at tertiary care hospital and to identify risk factors associated with limb loss.

Method: All patients who underwent emergency revascularization for limb and life threatening arterial injury of the lower limbs, between 1st January, 2003 and 31st December, 2009 at Aga

Khan University Hospital, Karachi were included and analyzed.

Results: Forty three patients underwent surgical revascularizations. All patients were male, with median age of 28 years (6-60 years). The mechanism of trauma was penetrating in 67% of patients. The most frequently injured vessel was the popliteal artery (49%), followed by superficial femoral artery (34%), common femoral (9%) and crural arteries (7%). Fifty one percent of patients had associated fractures of long bones. Injured vessels were mainly repaired with either interposition vein graft (49%) or polytetrafluoroethylene graft (39%). End-to-end anastomosis was done in 12% of patients. Fasciotomies were performed in 67% of patients. The limb salvage rate was 79%. The mortality rate was 7%.

Conclusion: All patients presenting with LEAI were young males. Combined venous and orthopedic injuries were associated with higher observed limb loss. Aggressive approach to salvage limb with severe arterial injuries in the absence of life threatening situation should always be considered especially in the younger patients.

Keywords: Lower limb, arterial injury, limb salvage

15.31 POSTOPERATIVE ANALGESIA FOR CAESAREAN SECTION: COMPARISON OF PATIENT CONTROLLED ANALGESIA WITH CONTINUOUS INFUSION USING PETHIDINE

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Objective: Introduction: Management of postoperative pain after caesarean section (C/S) requires a balance between pain relief & undesirable side effects of drugs and technique. Various studies using continuous opioid infusion could not identify ideal dose to provide adequate analgesia without supplemental bolus doses or side effects to maintain an adequate level of analgesia during rest and activity. PCA devices are now widely used in clinical practice, and are among the most recommended techniques for the control of moderate to severe postoperative pain. We hypothesized that PCA could result in lower pain scores, less side effects, more patient satisfaction and reduction in breakthrough pain requiring rescue analgesia

Objectives: In order to improve conventional postoperative pain management after caesarean section, which in our hospital setting is continuous narcotic infusion, we compared it with patient controlled analgesia (PCA).

Method: Method: 120 patients after written informed consent were enrolled in the study after an uneventful elective caesarean section under spinal anaesthesia. All patients at 120 minutes after institution of spinal anaesthesia received 0.5mg/kg bolus of pethidine. Depending upon the randomization by sealed envelope method, group P received PCIA with 0.15mg/kg bolus pethidine with 10-minute lockout & group C received continuous pethidine infusion at a rate of 0.15mg/kg /hr. All patients received tablet paracetamol 1 gram three times a day and diclofenac suppository 100mg twice a day during the study period.

Results: Results: The verbal pain score, need for rescue analgesia, incidence of nausea and vomiting was significantly lower (p value <0.001) in PCA group as compared to continuous infusion

group at 6, 12 and 24hrs in the postoperative period. Ninety eight percent of the patients were satisfied with pain management and wanted the same form of analgesia for future surgeries in the PCA group as compared to 70% ($p < 0.001$) in Group C. *Conclusion:* Discussion: PCA enables patient's participant in pain relief and usually results in improved analgesia. However these devices are expensive and material costs per patients are usually higher compared with conventional analgesia. In our study we observed better pain control, less need for rescue analgesia for breakthrough pain, less incidence of nausea and vomiting and greater patient satisfaction. *Conclusion:* Since in our part of the world we do not have preservative free narcotic to use by intrathecal route, we as care giver can improve postoperative pain management by using PCA instead of continuous narcotic infusion in patients undergoing caesarean section.

Keywords: Cesarian section, postoperative pain, PCIA

15.33 OBSERVATIONAL STUDY TO ASSESS THE EFFECTIVENESS OF POSTOPERATIVE PAIN MANAGEMENT OF PATIENTS UNDERGOING ELECTIVE CAESAREAN SECTION

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Objective: Introduction: The study was designed to assess the post operative pain management strategy, its effectiveness and safety in patients undergoing caesarian section. *Method:* Method: Patients having elective caesarean section from December 2008 to May 2009 were included. On the day of surgery, we recorded patient's demographics, postoperative pain orders and analgesia regime. On first postoperative day, anaesthesia team assessed the pain by visual analogue scale (VAS), noted any complications and patient satisfaction. *Results:* Discussion: Pain during and after caesarean section is the greatest concern of women followed by nausea and vomiting 1. There is evidence that pain services affect morbidity and duration of hospital stay 2. In our observational study, we observed that postoperative pain management regimen is mostly started and followed by the obstetric team at our university hospital. Although the postoperative pain management was adequate in terms of patients' safety, it was not effective according to the goal set by Joint Commission on Accreditation of uniformly low pain score of no more than 3 out of 10 both at rest and with movement 3.

Keywords: C- Section, pain score, post-operative pain

15.34 TECHNIQUE OF ANAESTHESIA FOR DIFFERENT GRADES OF CAESAREAN SECTION: A CROSS SECTIONAL STUDY

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Objective: Introduction: Regional anaesthesia (RA) for caesarean section (CS) is the preferred option when balancing risks and

benefits to the mother and her foetus. The Royal College of Anaesthetists audit guidelines suggest that 85% of emergency CS should be conducted under RA and the conversion to general anaesthesia (GA) should be less than 3 % for emergency, and less than 1% for elective surgery.

Objective: (1) The percentage use of regional anaesthesia (RA) and failure rate of RA for different grades of caesarean section (CS) has become a marker of quality for obstetric anaesthesia service. (2) The objective of our prospective observational study is to find out the technique of anaesthesia used in different grades of CS, reasons for choosing general anaesthesia (GA) and failure rate of RA in our hospital setting.

Method: This prospective cross sectional study was carried in the obstetric unit of Aga Khan University Hospital from 1st January 2010 to 31st May 2011. The anaesthetist performing the procedure filled out the data collection proforma. Suggested Indicators were percentages of Grade 1-4 CS done under RA and GA, % of failed regional, % of failed regional in different grades of CS.

Results: Total of 407 patients having CS was reviewed for five months of study period. The technique chosen was GA in 49% ($n=201$) and RA in 51 % ($n=206$) of patients. There was no significant difference between the use of GA and RA for grade 2-4 CS with a slight increase margin of difference for grade 1 CS (63% GA vs 37% RA). Another finding was a high rate (44%) of elective CS done under GA. Patient preference (45%) was the most common reason for choosing GA. Fourteen patients (6.7%) required conversion from regional technique to GA; eleven patients had grade 1-3 CS and three patients had grade 4 CS.

Conclusion: Our rate of regional technique for CS ranges from 37 % -49% for grade 1-3 CS and 45% for elective Grade 4 CS, which is very low compared to the recommended international standard (1). *Conclusion:* In order to meet the international standards for best practice, guidelines should be made in consultation with the obstetrician and nursing staff regarding use RA for different grades CS. Patient education regarding the use and benefits of RA needs to be enforced.

Keywords: C-Section, General Anaesthesia, Spinal Anaesthesia

15.35 OVARIAN TORSION SURGICAL MANAGEMENT OPTIONS AND OUTCOMES IN CHILDREN

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Objective: The aim of this study was to see the outcomes of different surgical techniques on the management of ovarian torsion

Method: The medical records of all children with ovarian torsion admitted to the AKUH on both the pediatric surgery and gynecology services between 2000 and 2010 were reviewed retrospectively. Information concerning patients' demographics, duration of onset of symptoms, Pain and torsion site, diagnostic modality, time lapse from presentation to hospital until surgery, intra operative and postoperative complications, length of stay, and a review of pathology reports were obtained.

Results: There were total of 15 patients, with Median age was 11 years (range, 1 day of life to 14 years). In 43%, torsion occurred on right ovary ($n = 10$), and in 21%, torsion occurred

on the left one (n = 5). History of lower abdominal pain was almost invariably present in all patients (R>L) 78% of cases, vomiting was synchronous with pain onset in only few patients, altered menstrual cycle with menorrhagia in very few. Fever was rare and followed the initial discomfort by several hours, 2 patients having an antenatal diagnosis of ovarian cyst, (torsion of ovary alone was present in 9 patients, tubal torsion in 3 patients, both ovary and tubal torsion in 2 patients, 2 of these patients developed torsion on contralateral side at the interval of 3 months and 9 months, ovarian tumor found in few patients these were, benign serous cyst adenoma, benign cystic teratoma, benign papillary cyst adenoma, dermoid cyst, Abdominal US obtained in all children showed adominopelvic mass. CT scan was done in 3 patients, tumor marker levels were unremarkable Median delay between the first symptoms and surgical intervention was 3 days. Of these 15 patients Laparotomy was performed in 4 cases and laparoscopic procedures in 11 (73%) cases, 5 patients underwent cystectomy and untwisting, 10 patients underwent oophorectomy, patients were followed up for few months but most of them are symptom free, No intraoperative complication noted in any of these patients except wound infection occurred in 1 patient, there was no mortality in the series

Conclusion: Outcomes of ovarian torsion cystectomy and untwisting are also as good as salpingoophorectomy & conservative surgery is safe option to save the permanent loss of ovary

Keywords: Ovarian torsion, untwisting, lower abdominal pain

15.36 FREQUENCY AND FACTORS LEADING TO UNCONTROLLED BLOOD PRESSURE AMONG ELDERLY HYPERTENSIVE PATIENTS VISITING FAMILY PRACTICE CLINICS.

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Objective: To determine the proportion of elderly hypertensive patients, visiting family practice clinics with uncontrolled BP and to determine the factors leading to uncontrolled BP amongst these individuals.

Method: Data on socio-demographic status and risk factors leading to uncontrolled BP were extracted through a questionnaire, which was administered after an informed consent. BP readings were recorded with an aneroid sphygmomanometer. **Results:** Sample size was of 196 elderly patients. Proportion of patients with uncontrolled BP was 60%. 57% of the male patients had uncontrolled BP. Statistically significant relation was present between uncontrolled BP and lack of health education (P-0.00), obesity (P-0.001), presence of diabetes mellitus (P-0.05). Patients who were adherent to medications had well controlled BP (P-0.008).

Conclusion: More than half of the elderly hypertensive patients had uncontrolled BP. Male patients were more likely to have uncontrolled BP. Factors leading to uncontrolled BP were being obese, lack of health education, co-morbid illnesses like diabetes mellitus and being non adherent to medications.

Keywords: Elderly, uncontrolled blood pressure, adherence

15.37 EXPRESSION AND LOCALIZATION OF THE G $\beta\gamma$ ACTIVATED AND CALCINEURIN INHIBITED ADENYLYL CYCLASE ISOFORMS IN RAT ARTICULAR CHONDROCYTES

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Objective: Articular cartilage is an essential component of synovial joints. Chondrocytes are the only cells present in the articular cartilage. Development and homeostasis of articular cartilage must involve different signaling cascades. cAMP mediated signaling is archetypical in mammalian cells. Therefore, in the articular chondrocytes, cAMP mediated cascades may play an essential role. cAMP is an important 2nd messenger molecule in G- protein mediated transduction cascade. Adenylyl cyclase (AC) is the affecting enzyme in this cascade and generates cAMP from ATP. Nine mammalian transmembrane (tm) AC isoforms, each with differential modulation, individual pharmacology and tissue specificity properties, have been identified. Furthermore, AC isoforms are classified in four groups based on regulatory properties.

Method: Expression and localization of sub groups of adenylyl cyclase, stimulated by G $\beta\gamma$ units of G-proteins (AC2, 4, 7) and calcineurin inhibited (AC9) were studied by using RT-PCR and immunohistochemistry techniques

Results: All G $\beta\gamma$ stimulated and calcineurin inhibited AC isoforms were found to be expressed and localized in articular chondrocytes; expression of the AC isoforms in different age groups, though not uniform, was observed to be increasing as the chondrocytes grew older.

Conclusion: These findings suggest for an active role of the G $\beta\gamma$ stimulated and calcineurin inhibited AC isoforms in developing and adult articular chondrocytes

Keywords: Articular chondrocytes, adenylyl cyclase, cAMP signaling

15.38 AN EXPLORATORY STUDY OF CHILD REARING PRACTICES OF FATHERS AND LANGUAGE DEVELOPMENT OF THEIR CHILDREN

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Objective: Background: Parenting practices influence early childhood development (ECD) outcomes. Parents' sensitivity and responsiveness are important factors to understand the child's signals such as hunger or pain. In traditional families, child-care is usually the mother's responsibility, however, due to changes in society mothers are also working outside of the home to overcome poverty and the role of the father is changing. Responsive care giving by both parents helps improve child feeding and care for sick children. Therefore, ECD activities such as psychosocial stimulation and responsive care-giving with a focus on greater involvement of fathers can help improve

children's development. The aim of this study was to explore the father's child rearing practices and association with child language development in urban slums of Dhaka city, Bangladesh.

Method: This was a cross sectional study. Our sample comprised of 112 children and their parents living in 3 urban slums of Dhaka. We measured socio-economic status of family, child rearing practices of both parents, quality of stimulation that the child receives at home using family care indicators and a language inventory to assess comprehension and expression of words of children aged 10-24 months. We conducted t-test analysis to assess any differences of parenting with respect to child sex and parental educational status. We also conducted correlation analysis to measure if child rearing activities of parents were related to children's language development. Finally we conducted multiple regression analyses to determine factors that predicted language development of the children.

Results: There were no differences between girls and boys, neither was any difference between less or more educated parents in terms of their child rearing practices. There was a significant relationship of children's language development with fathers' parenting ($r=0.43$, $p<0.001$) as well as that of mothers ($r=0.59$, $p<0.001$). Multiple regression analysis showed that father's child rearing activities predicted language expression of children ($B=0.33$, 95%CI: 0.1, 0.6, $p<0.001$), however, its effect on language comprehension was washed out after mother's child rearing entered the equation. Maternal child rearing practices predicted language comprehension ($B=0.5$, 95%CI: 0.25, 0.7, $p<0.001$).

Conclusion: To understand the role of father in cultural context and design interventions to address the sensitivity, responsiveness and engagement of the father towards child rearing practices is an important dimension in ECD and this study shows that socioeconomic status, age of the child and child rearing practices of both parents affect a child's language development.

Keywords: ECD, Parenting practices, language development

15.39

MEDICAL ETHICS IN CLINICAL RADIOLOGY: STATUS OF BREAKING-BAD-NEWS AMONG RADIOLOGISTS AND TRAINEES IN DEVELOPING WORLD.

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Objective: Being a physician is a tough job in itself, breaking bad news to a patient is even tougher. Bad Ranging from merely communicating a diagnosis to the information of demise to the patient's family, breaking bad news can be an intimidating task for any physician. Since not much has been looked upon radiologists' perspective in delivering bad news in the developing countries, our study aims to bridge this gap. We aimed to understand the national consensus of breaking bad news to the patients by Pakistani radiologists and trainees.

Method: To collect the national data, we surveyed the radiologists and trainees attending the 26th National Radiological Conference in October 2010 in Karachi, Pakistan. Self-administered

questionnaires were given to all registered participants of the conference and consent was obtained.

Results: The overall response rate was 76% (228/300). The respondents included residents (51%), private practicing radiologists (28%), academic radiologists (13%), and other trainees (8%). Most of the academic radiologists communicated with their patients. The daily frequency of breaking bad news by residents was noted highest when practicing in public teaching hospitals (71%). For severe abnormalities such as malignancy, 50% residents, 55.2% of the academic radiologists and 74% of the private practicing radiologists were very uncomfortable in disclosure of results. For normal results, 56%, 59% and 49% of the respective groups were willing and comfortable in disclosing the results. First-year residents were more likely to communicate with patients than their senior colleagues. Residents were more likely to be interested in obtaining further training to deliver bad news than radiologists (64% vs. 51%; p -value:0.048).

Conclusion: Radiologists and residents trained in private hospitals communicated frequently with patients. Academic radiologists were less reluctant in disclosure of abnormal results to patients. Differences in frequency of communication with patients, and disclosure of normal to abnormal imaging results have been observed.

Keywords: Radiology, breaking-bad-news, radiologists

15.40

PEDIATRIC ENDOTRACHEAL INTUBATIONS FOR AIRWAY MANAGEMENT IN THE EMERGENCY DEPARTMENT

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Objective: To determine indications, type of medications used and immediate complications of pediatric intubations in emergency department

Method: A retrospective chart review was done on all pediatric patients (0-14 years) who required endotracheal intubation for airway management in the Department of Emergency Medicine at the Aga Khan University from January to December 2009. Data was collected on a preformed questionnaire for age, gender, indications, drugs used and complications of pediatric endotracheal intubations done in emergency department. Dead on arrival patients, and those intubated elsewhere were excluded.

Results: Total 83 pediatric intubations were done during the study period. Indications for endotracheal intubations were respiratory failure in 51(61%), unresponsiveness in 18 (22%), cardiac arrest 08 (10%) and trauma in 06 (07%) cases. Co-morbid conditions were present in 28 (34%). Out of 83 endotracheal intubations, drugs were used in 47 (57%) cases. Sedation and neuromuscular blockade were used in 42 (51%) cases, 4 patients received sedation only and 2 cases received relaxation without sedation and in 36(43%) cases intubation were done without drugs. Drugs used for sedation/induction were ketamine in 22(2%), midazolam in 14 (17%), Propofol in 7 (8%), and etomidate in 3(4%) cases. Neuromuscular blockades used were Rocuronium in 27(32%) cases, succinylcholine in

11(13.5%) cases, and Atracurium in 5(6%) cases. Complications were noted in 16(19%) cases.

Conclusion: Respiratory failure was found to be the main presenting complaint. Drugs for sedation and relaxation to facilitate endotracheal intubation were underused.

Keywords: Intubation, airway, rapid sequence intubation

15.41

ROLE OF REGIONAL, CULTURAL AND GENDER DIFFERENCES IN BREAKING-BAD-NEWS IN CLINICAL RADIOLOGY: EVIDENCE FROM A DEVELOPING COUNTRY.

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Objective: How a physician discloses the news has proven to have a great impact on the patient's satisfaction and ability to cope up with the issue. It is not always easy and comfortable for a physician to deal with a multiethnic, multicultural society in a medical setting – communication being a major obstacle. Moreover, social issues in developing countries, particularly Pakistan, issues such as gender discrimination, poverty and political unrest etc. makes this issue even more difficult to deal with. Not much has been studied if preferences to break bad news among radiologists and trainees can be influenced by difference in gender, and different locales and cultures within the same country.

Method: To understand the national perspective, we conducted a survey via self-administered questionnaires among the radiologists and radiology trainees attending the 26th National Conference of Radiology in Karachi, Pakistan on 29-31st October 2010. The trainees included radiology fellows, residents and radiographers etc. The conference is held annually by the radiological Society of Pakistan (RSP), with participants from all over Pakistan. The overall response rate was 76% (228/300).

Results: We found that radiologists and trainees located in Sindh and Khyber Pakhtunkhwa were more likely to communicate with their patients than their colleagues practicing in Punjab and Baluchistan who responded 'never' when inquired about how often they communicate with their patients. This may indicate inter-cultural variations existing among all four provinces of Pakistan. Radiologists and trainees located in 'rural areas' of Sindh were more likely to have prior experience in delivering bad news in their career than ones located in other regions of Pakistan. Participants located in 'urban' Karachi, 'rural' Sindh, Islamabad, and Rawalpindi were more likely to be interested in obtaining further training to deliver bad news. Female radiologists and trainees were more likely to communicate 'most of the times' with their patients. In contrast, male participants were more likely to report 'never' when asked about their frequency of communication with their patients.

Conclusion: To conclude, differences in geographical origin and culture influence the radiologists' and trainees' perception of breaking bad news in Pakistan. Significant differences exist with respect to gender among radiologists and radiology residents and trainees.

Keywords: Radiologists, Breaking-bad-news, Pakistan

15.42

CARRIER DETECTION FOR β -THALASSEMIA TRAIT IN GENERAL PAKISTANI POPULATION- A WAY FORWARD

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Objective: Pakistan is home to a population of over 170 million with a frequency of 6% to 13% for Beta-thalassemia trait. The objective of this study was to determine the frequency of β -Thalassemia minor in subjects with no family history of haemoglobinopathy

Method: One ninety two subjects were screened for β -Thalassemia minor at Fatimid Foundation to mark the Thalassemia day on May 8th, 2010. Subjects were self-recruited and were attracted for free screening due to advertisement through national media. Subjects with indexed cases of beta thalassemia major were excluded from the study. Participants were interviewed regarding their marital status and screening of partners. 5 ml EDTA venous blood samples were collected from all individuals for complete blood counts and peripheral smears review. Hemoglobin electrophoresis was performed for cases with mean corpuscular volume <76 fl, mean corpuscular haemoglobin <27 pg. Haemoglobin A2 level >3.5% was considered diagnostic for beta-thalassaemia trait

Results: One ninety two subjects (119 males and 73 females) with median age as 27 years (range: 18-70 years) were screened for β -Thalassemia minor. 112 subjects (58.3%) were married with 30 subjects tested previously for Thalassemia minor. 21 subjects (10.9%) were engaged and prior to data collection only one of the fiancé's partner was screened for Thalassemia trait. There were 33 couples who participated in the study to get their pre-marital screening done. The mean hemoglobin was 12.6gm/dl (Range: 7.3 - 16.9gm/dl) for all the participants. MCV <76 fl and MCH <27pg was seen respectively in 39 (20%) and 36 subjects (19.1%). Hypochromic, microcytic red cells and target cells were seen in 41 subjects (21.3%). Of these 41 subjects, HbA2 levels >3.5% were observed in 22 subjects (53.6%), estimating an overall frequency of 11.3% for beta Thalassemia trait.

Conclusion: This study showed high prevalence of β -thalassemia minor in general Pakistani population with no family background for thalassemia. It showed that strategies for carrier detection would fail if only families with indexed cases are targeted. Large prospective studies are needed to evaluate the true burden of beta Thalassemia trait.

Keywords: β -thalassemia trait, pre-marital screening, Pakistan

15.43

FREQUENCY AND OUTCOME OF GRAFT VERSUS HOST DISEASE AFTER STEM CELL TRANSPLANTATION: 6 YEARS EXPERIENCE

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Objective: Graft versus host disease (GvHD) is a complication of stem cell transplant and carries a significant morbidity and mortality. The objective of this study was to evaluate the frequency and outcome of graft versus host disease after stem cell transplantation in haematological disorders in Pakistan.
Method: All patients who presented in bone marrow transplant clinic with a potentially curable disease were included in the study. Pre-transplant workup of the patient and donor included a complete blood count, evaluation of liver, kidney, lung, infectious profile, chest, paranasal sinus roentgenograms and dental review. Mobilization was done with G-CSF 300µg twice daily. The conditioning regimens included Busulfan/Cyclophosphamide, Cyclophosphamide /ATG/ Fludarabine and Cyclophosphamide/Total Body irradiation. GvHD prophylaxis was done with Methotrexate 15mg/m² on day+1 followed by 10mg/m² on days +3, +6 and cyclosporine. Grading was done according to the Glucksberg classification
Results: A total of n=126 transplants were done from April 2004 – September 2010. Out of these n=81 were Allogeneic transplants and n=45 were autologous. In Allogeneic transplants n= 23 were females and n=58 were males. The overall frequency of graft versus host disease was 35% (n=28). Acute GvHD was present in n=12 patients while n=16 had chronic GvHD. Grade II GvHD was present in n=11 (14%) and grade III GvHD was seen in n=10 (12.3%) patients. According to age groups, n=7 pediatric patients had GvHD while n= 21 patients were adults. GvHD was seen in n=3 patients with Acute Lymphoblastic Leukemia, n=6 with Acute Myeloid Leukemia, n=4 with Aplastic Anaemia, n=5 each with Chronic Myeloid Leukemia and β Thalassemia Major. In n=21/28, GvHD was biopsy proven. GvHD skin was present in n=15 patients followed by gut (n=4) and liver (n=4). N=4 patients had combined GvHD of skin and gut. The mortality in acute and chronic GvHD was 2.4% and 1.2% respectively
Conclusion: The frequency of graft versus host disease in this study was 35% which is lower compared to international literature. Skin was the most frequently affected organ. The decreased incidence can be attributed to lower diversity of histocompatibility antigens in our population.

Keywords: GvHD, Allogeneic transplant, Cyclosporine

15.44

LEAVING AGAINST MEDICAL ADVICE FROM EMERGENCY DEPARTMENT OF AGA KHAN HOSPITAL: REASONS AND OUTCOMES

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Objective: Internationally, Leave Against Medical Advice (LAMA) rates have been shown to be between 1% and 2%. Psychological and social factors also play an irrefutable role in patient's behaviour. If we are to improve health care and take the patient to its core, we need to identify the problems they are facing with the hospitals. Hence, in this study we quantify the frequency, demographic and clinical characteristics of patients LAMA from Emergency Department (ED) of Aga Khan University Hospital. We also studied the reasons predisposing such decisions by these patients and/or their attendants and patient's outcome.

Method: We adapted a descriptive, cross sectional study design at ED of Aga Khan University Hospital. Calculated sample of 82 was approached for LAMA patients during February of 2011. Trained team collected data through file reviews and telephonic interviews. Descriptive analysis was done with the help of SPSSv.19.

Results: A total of 151 patients went LAMA from ED in the concerned month. Seventy one cases consented to participate and were included in analysis. Almost half did not have proper documentation in file regarding reason behind their action. Significant triage categories such as P1 (35%) and P2 (34%) also went against doctors' advice. Financial (30%) and domestic (10%) issues were main reasons identified in LAMA form. Majority, 62% left when offered in-hospital admission. Most, 42% mentioned that ED personnel tried to counsel them. Three of these patients passed away within 2 months. Most (38%) simply took patient back home. On specifying the reason behind the decision 50% accepted financial problems, 27% thought that patients were fine and 15% were dissatisfied with the care.
Conclusion: Three percent patients go LAMA from Aga Khan University Hospital, Emergency Department when offered in-hospital admission. Common reasons included financial and domestic issues. Three patients had adverse outcome.

Keywords: Leave against medical advice, reasons, outcomes

15.46

MISSING THE BOAT: ODDS FOR THE PATIENTS WHO LEAVE ED WITHOUT BEING SEEN

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Background: Left without being seen (LWBS) patient is a well recognized indicator of emergency department overcrowding.

The aim of this study was to define the characteristics of LWBS patients, their rates and factors associated from Emergency department(ED) of tertiary care hospital of Pakistan
Methods: A total of 38,762 patients visited ED during study period. Among them 5,086 patients left without being seen. Variables included in the analysis were age, sex, presenting complaints, month, time, shift, day of arrival and leaving. Rates have also been calculated of the following variables among the patients who left and who were seen in the ED

Results: Thirteen percent of patients LWBS from ED. Males and adult patients are more likely to leave. Low acuity patients (P3) were seven times more likely to leave. Rate of leaving was 20% in the night shift. The rate of leaving was 19.8% during ED diversion vs. 9.8% when not on diversion. Mean waiting time in pediatric patients was 154 minutes and for adult patients was 171 minutes before leaving. Before leaving 32.7% patients have waited for more than 180 minutes as compared to the patients who were seen in ED.

Conclusion: Age, low triage acuity, night shift, prolong waiting time found to have direct association with LWBS. ED diversion status was associated with high LWBS rates. LWBS is indirect marker of ED overcrowding. Strategies should be aimed to decrease the waiting time and provision of additional facilities for these patients to avoid bad outcome.

Keywords: Emergency department, left without being seen, Pakistan

15.47

QUANTIFICATION OF 24 DIFFERENT SEQUENCES IN ALPHA GLOBIN GENE CLUSTER BY MULTIPLEX LIGATION DEPENDENT PROBE AMPLIFICATION IN PAKISTANI POPULATION

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Objective: To detect deletion/duplications in alpha globin gene cluster in Pakistani population.

Method: To determine the spectrum of molecular variations in alpha gene, 30 EDTA blood samples were selected based on their normal hemoglobin and hypochromic microcytic indices with normal HbA₂ levels or on basis of fast moving Hb on HPLC. CBC was performed on Coulter 750H and hemoglobin variants were detected on high performance liquid chromatography. DNA was extracted through Qiagen kit and subjected to MLPA technique using SALSA kit P140-B2 HBA (Amsterdam, Holland). Accordingly specific probes were added to the samples and were amplified and quantified which were able to sequence nucleotides 130 to 409 of alpha globin gene.

Results: Of 30 samples, deletion 3.7 was observed in four samples (13.3%) and Constant Spring mutation was seen in one(3.33%). Deletion 4.2, SEA, Med 1 were not observed in any samples. The patients with 3.7 deletions showed following demographics and hematological parameters with equal male to female ratio, mean age :24.2 years , mean: Hb 11.6 gm/dl, mean Hct:37.5 %, mean MCV: 67.5 fl, mean MCH: 20.8 pg, mean Hb A: 97.6%, mean Hb A₂:2.35% and Hb F: 0%. One male patient with Constant Spring mutation with age: 14 years, Hb:5.5 gm/dl, Hct: 20.3 %, MCV: 60.4 fl, MCH:16.5 pg, Hb A:98.6%, Hb A₂: 1.4% and Hb F: 0

Conclusion: This is the first description of MLPA technique for alpha gene analysis in Pakistani population. Deletion of 3.7 and Constant Spring mutation were observed. Larger studies will reveal the entire spectrum of alpha thalassemia.

Keywords: Alpha thalassaemia, constant spring, MLPA

15.48

DETECTION OF ABNORMAL HAEMOGLOBIN VARIANTS IN PAKISTANI POPULATION USING HPLC

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Background: There are many naturally occurring, genetically determined variants of hemoglobin and more than 750 have been described to date. Collectively, the clinical syndromes resulting from disorders of hemoglobin synthesis are referred to as "hemoglobinopathies." Hemoglobinopathies are relatively common in Asian and African countries. Cation-exchange high performance liquid chromatography (HPLC) is favored over hemoglobin electrophoresis as a reliable method for the initial screening of hemoglobin variants due to fast through put, accuracy, precision and cost effectiveness.

Objective: To estimate the frequency of abnormal hemoglobin variants in Pakistani population utilizing high performance liquid chromatography (HPLC) in a tertiary care centre
Method: All blood samples submitted to the clinical laboratory of The Aga Khan University hospital during August 2010 to September 2010 were prospectively analyzed through chromatography for various haemoglobin variants. All age groups and both sexes were included in the study while those subjects with the history of blood transfusion within last 90 days were excluded. Study variables include age, sex, haemoglobin, haematocrit, red blood cell count, mean corpuscular volume, mean corpuscular haemoglobin and various haemoglobin variants.

Results: A total of 1248 samples were received during the study duration out of which 165 were excluded because of prior history of blood transfusion. In the remaining 1083 specimens, 736 (68%) had normal haemoglobin types while 347 (32%) had abnormal haemoglobin variants. The relative frequency (along with the total number of samples in our study) of different abnormal haemoglobin variants is as follows: Thalassaemia minor 18% (195); thalassaemia major 9.9% (107); haemoglobin D trait 1.1% (12); sickle/β thalassaemia 1% (11); haemoglobin D disease 0.7% (8); sickle cell anemia 0.5% (5); haemoglobin E trait 0.4% (4); sickle cell trait 0.2% (2); haemoglobin D/β thalassaemia 0.1% (1); SD disease 0.1% (1); and haemoglobin E disease 0.1% (1).

Conclusion: Haemoglobinopathies were detected in a significant number of samples (32%) tested for haemoglobin variants during our study. Thalassaemia minor was the most common abnormal haemoglobin variant followed by thalassaemia major and Hb D trait. Large scale studies in general population are needed for exact estimation of the frequency of abnormal haemoglobin variants in Pakistani population.

Keywords: Haemoglobin variants, high performance liquid chromatography (HPLC).

15.49

HIDDEN ICEBERG OF UNSEEN CHALLENGES: LEFT WITHOUT BEING SEEN

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Background: Overcrowding in emergency department (ED) is an emerging problem. It reduces patient satisfaction as well as increases the number of patients that leave without being seen (LWBS) by a physician. Determining the reasons for patients leaving, their subsequent outcomes, and preventive strategies is important. Data from developing countries like Pakistan is lacking in this aspect. **Objective:** 1) To study the factors associated with the decision of leaving the emergency department without being evaluated? 2) To determine that whether patients are able to obtain appropriate medical care after leaving? **Methods:** This study is a retrospective study of patients, who left the ED after triage without being seen. Information of patients presenting to ED from 15th September 2011 to 15th October 2011 will be collected. Emergency Department ERMS system will be used to collect data. The record will be reviewed to assess the demographic and clinical characteristics of patients including, age, sex, triage priority level, presenting complaints, vitals, ED diversion status, shift of the day and the day of week. Telephonic survey to the patients after getting informed consent over the telephone will be done; surveyor asks questions according to predesigned questionnaire. All efforts will be made to maintain the patient confidentiality. All the variables will be analyzed using SPSS version 19.0. Descriptive analysis will be done on the patient demographics.

Results: Result to be incorporated after data collection and analysis

Impact: This baseline information will be critical in developing evidence based interventions aimed at improving the health care management of such patients and consequently reducing the morbidity and mortality resulting from this phenomenon.

Keywords: Emergency department, left without being seen, Pakistan

15.50

CHALLENGES OF INTERNALLY DISPLACED PEOPLE (IDPS) IN A TEMPORARILY SET COMMUNITY.

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Objective: Internally displaced persons (IDPs) represent a population who are forced to leave their home environment and reconcile in a new community. Unlike refugees, IDPs do not cross over the internationally recognized boundaries of a country. There are numerous reasons because of which internal displacement of people occur. Natural hazard is one of them. During July 2010, Pakistan faced a natural calamity in the form of floods causing destruction at a huge level. As a result of these floods, a lot of people migrated from their home towns and villages and settled into a new area forming provisional

communities. An attempt was made to identify the challenges of these IDPs in their communities.

Method: We selected a temporarily set IDP community named as Sindhabad, located near Highway Sabzi Mandi, Karachi. The total population of this community was approximately 1800. A survey was done to explore the difficulties of these IDPS in this regard.

Results: We identified 9 most highlighted challenges that internally displaced people face when they move into a new community for settlement. The biggest challenge for them is to prevent waterborne diseases and was prevalent in whole community (100%). Illiteracy (96%), lack of immunization facility (86%), substance abuse (85%), unemployment (75%), and maintaining environmental hygiene (66%) were some other major challenges that these IDPs faced. Minor challenges along with these were lack of antenatal care & malnutrition (30%) and availability of family planning services estimated up to 27% of population.

Conclusion: From this survey, it was concluded that the internally displaced persons face challenges in terms of maintaining their hygiene, sanitation, unemployment and illiteracy in a temporary settlement. They also have concerns regarding their health. The result of this survey may be generalized as the challenges faced by all IDPs whenever they settle into new communities as these factors affect the activities of daily lives of every individual.

Keywords: Internally displaced people, challenges, temporary community

15.56

FACTORS AFFECTING COMPLIANCE WITH STANDARD PRECAUTIONS AMONG NURSING AND ALLIED HEALTH STAFF AT A TERTIARY CARE HOSPITAL IN KARACHI'

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Objective: Standard precautions have been promoted widely to protect patients and health care workers from health care associated infections. Partially followed standard precautions, increases the risk of infection transmission. The aim of this study was to measure the level of Compliance with Standard Precautions (CWSP) and to explore the factors associated with CWSP among nursing staff at a tertiary care hospital in Karachi.

Method: Following a cross-sectional study design, 279 nursing staff, including nurses, midwives, technicians, and nursing assistants from the Aga Khan University Hospital (AKUH), Karachi, participated in this study. The data was collected using the Health Care Worker's Questionnaire (Gershon et al., 1995; Kermod et al., 2005).

Results: The overall compliance rate with standard precautions at AKUH was 44.1%. However, variations were found from unit to unit; the Coronary Care Unit had the highest (90%) and Surgical Units had the lowest rate (30.8%). Variations were also found among different components of the standard precautions as well as for various items within specific components. With regard to the factors affecting CWSP, safety climate, co-workers' support, knowledge about blood borne virus transmission an

d standard precautions were positively associated with the staff's compliance. Whereas, experience of staff, workplace stress, and risk taking behaviour were negatively associated with the staff's compliance.

Conclusion: These findings imply that decreased workplace stressors, a supportive work environment, promoting a safety climate, enhanced knowledge, and increased commitment of staff towards standard precautions are the key factors to improve individuals' CWSP.

Keywords: Standard precautions, compliance, factors

15.57

THE IMPACT OF USING DYNAMIC INVENTORY MANAGEMENT SYSTEM IN INCREASING OPERATIONAL EFFICIENCY IMPROVING END USER SATISFACTION AND REDUCING INVENTORY CARRYING & DISTRIBUTION COSTS.

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Objective: There wasn't any automated inventory management system at Radiology, AKUH. Issues of non-availability and expiry of core, expensive medical surgical supplies occurred, directly impacting patient care. In 2008 – 09 huge losses were incurred by Radiology due to dead stock and near expiry items which had heavy carrying costs associated. Greater loss was when items had to be disposed off, returned to vendor or sterilized through Central Sterilization Services Department (CSSD) for reuse. A dire need was felt to establish systems where minimum reorder levels could be defined and its purchasing / re-ordering could be managed. Secondly the system also was no system to track expiry information and reordering levels was available. It also served for identification of substitutes available. *Method:* Using the PDCA methodology this project was initiated on January 14 and was concluded on May 10, 2010. RD Prefix was initiated after the launch of PeopleSoft when Distribution centre functions were centralized and brought under the Materials Management Division (MMD). The Medical Surgical Supplies used in radiology were segregated area wise, piloted in Vascular Interventional Radiology (VIR). Total 79 items were under review to be shifted to reordering through automated system. Inventory studied was categorized in 'running items, 'No consumption in 3 months' and 'No consumption in 6 months'. Consumption trends were studied and new consumption criterions were established. A separate list of identified critical / red alert items was made so their reordering levels could be separately defined and critically monitored. Average monthly consumptions were extracted from the system and studied. The MRP (minimum reorder point) was calculated considering Average Monthly Consumption, lead time & safety stock. On Feb 23 MMD completed this activity in coordination with Radiology and shifted RD non-consign items to Fixed MRP PeopleSoft functionality and subsequently reordering would start automatically. On May 10, 2010 Consignment Delivery Module was initiated, with these system in-place real-time transactions and replenishments were possible for all the consignment based Medical Surgical Supplies. This system is capable of self learning

and adjusts MRP levels according to the consumption patterns of Medical Surgical Supplies.

Results: Approximately 100% fill rate was achieved. Optimum level of inventory is maintained at all times. This system has improved inventory turnover time and expiry information tracking. Identification of duplicate item, dead and slow moving stock items has become easy. It has also minimized of stock out situation. Better procedure planning in line with availability medical surgical supplies. Improved communication system e.g. pre alerts, expiry alerts, minimum stock levels etc. Real-time transactions, replenishment and inventory management As this was piloted in VIR Section; marked improvement resulted in the utilization of Medical Surgical Supplies as against 2009 (-100%) and in the first quarter of 2010 (+6%), Second quarter (+12%) these savings were realized despite positive gains in volume and revenue.

Conclusion: Reduction in purchasing and inventory carrying cost. Connect inventory control and purchasing process with trends of consumption to help reduce cost implications, improve cash flows and ensure the right amount of stock is available. Gain visibility in the inventory process. Effectively balance availability and usage of the medical surgical supplies with its consumption levels. Track items and their expiry dates through a system to minimize at hand inventory. Viewing of updated inventory levels for decision making, reordering and timely identification of dead stock. With the integrated order, inventory and distribution process; as well as efficient tracking of inventory, manual data entry is reduced and inventory orders are placed in a timely fashion.

Keywords: Inventory management, vascular interventional radiology

15.58

STUDENTS' PERCEPTIONS OF CLINICAL TEACHING AND LEARNING STRATEGIES: A PAKISTANI PERSPECTIVE

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Objective: The complexity of the health care environment is increasing with the explosion of technology, coupled with the issues of patients' access, equity, time efficiency, and cost containment. Nursing education must focus on means that enable students develop the processes of active learning, problem-solving, and critical thinking, in order to enable them to deal with the complexities. This study aims at identifying the nursing students' perceptions about the effectiveness of utilized teaching and learning strategies of clinical education, in improving students' knowledge, skills, and attitudes.

Method: A descriptive cross sectional study design was utilized using both qualitative and quantitative approaches. After Ethical Review Committee approval data were collected from 74 students, using a questionnaire that was developed for the purpose of the study and analyzed using descriptive and non-parametric statistics.

Results: 62% of the participants perceived demonstration as the most effective strategy in improving their skills, and 50% of the

participants perceived reflection as improving their attitudes; whereas, 68% and 55% of the participants respectively perceived PBL and CM as the most effective strategies in improving their knowledge. Students' responses to open-ended questions also revealed that the above mentioned strategies are effective in improving their learning outcomes.

Conclusion: It is recommended that demonstration, reflection, and CM should be continued to be used as frequently as used before. However, the use of PBL approach needs to be incorporated more frequently. It would be valuable to validate the findings through triangulation of the study to increase the generalizability of the study findings.

Keywords: Student nurses perspectives, teaching and learning strategies, clinical education

15.59

ANALYSIS OF DELETIONS AND DUPLICATIONS IN DYSTROPHIN GENE BY MLPA

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Objective: Duchene muscular dystrophy (DMD) is one of the most prevalent muscular dystrophy in the world. It is characterized by rapid progressive muscle degeneration, leading to paralysis and death. DMD is caused by mutations, mainly deletions and duplications, in the dystrophin gene located at Xq21.2. The incidence of DMD in males is 1 in 3500, whereas females present as carrier. In this study deletions and duplications were screened in blood samples of DMD patients for confirming their diagnosis.

Method: Overall, 20 blood specimens from male patients were analyzed by a commercially available MLPA kit, which can detect deletions or duplications in all 79 exons of the dystrophin gene. Ligation and amplification steps were carried out in the ABI 9700 thermal cycler followed by separation of Cy5 labeled amplified fragments by capillary electrophoresis using Beckman Coulter genetic analysis system.

Results: Exon deletions in dystrophin gene were detected in 8/20 patients. All patients were less than 10 years of age. Their average CPK value was 6878 IU/L (range 2975-12779). The symptoms included muscular weakness, low endurance, enlargement of calf and deltoid muscle. Exons 12, 17 and 19 were deleted in one patient, whereas exons 45-50 were deleted in two patients. Exons 51-55 were deleted in one patient. Single exon deletions were observed in four patients.

Conclusion: MLPA is a rapid, reliable and cost effective technique for the detection of DNA rearrangements among DMD male patients.

Keywords: DMD, MLPA, Mutation

15.60

RESIDENT'S PERSPECTIVE OF ATTENDING'S IN-PATIENT ROTATION IN INTERNAL MEDICINE: COMPARING TWO WEEKS WITH FOUR WEEKS OF CLINICAL SERVICE

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Objective: To assess the perspective of Internal Medicine trainees on 4 weeks compared to 2 weeks rotation of faculty in terms of teaching and evaluation of residents and interns. We also aim to highlight the views of trainees on patient care.

Method: A cross-sectional study was conducted on a total of 50 postgraduates (interns and residents) rotating in Internal Medicine, who were asked to fill in a structured, self-designed questionnaire. Most of the responses required a rating in a scale of 1-5 (1 being poor and 5 being excellent).

Results: All respondents felt that management of patients and teaching of trainees was better done in 4 weekly rotations. An interesting observation was that ownership of patient and patient satisfaction was far superior in 4 weeks rotation as compared to 2 weeks ($p < 0.001$). The overall level of comfort between faculty and their team members was better in 4 weekly rotation ($p < 0.001$). Respondents also felt that teaching activities are given more justice in 4 weekly rotations.

Conclusion: This study highlighted better satisfaction of post graduate trainees with respect to teaching and evaluation of trainees as well as patient care in 4 weeks compared to 2 weeks of faculty rotation.

Keywords: Internal Medicine, Faculty, Residents

15.61

REPORT OF A RARE β -THALASSEMIA MUTATION -90 (C-T) FOR THE FIRST TIME IN PAKISTANI FAMILY

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Objective: Introduction β -thalassemia is one of the most common and widely studied autosomal single-gene disorder in Pakistan. Approximately 5% of the Pakistani population carries β -thalassemia trait and every year over 5000 new children are born with the disease. A possible solution to this problem is prenatal diagnosis. In 1995 AKUH introduced prenatal diagnosis of β thalassemia and so far more than 400 families have consulted the laboratory for this test. Fetal sampling also known as chorionic villus sampling (CVS) and amniocentesis can be used as source of fetal cells for DNA analysis.

Method: Method: The Amplification Refractory Mutation System was used to screen for the β thalassemia mutations. For unknown mutation, DNA sequencing was attempted by capillary electrophoresis using Beckman Coulter genetic analysis system.

Results: Case Report A 29 years old pregnant female consulted the AKUH laboratory for the screening of β -thalassemia

mutations. The couple also reported history of an affected child in their family. The expecting mother was booked for CVS collection at 12 weeks of gestation. In addition, blood samples were drawn from both parents.

Conclusion: Discussion This is the first report from Pakistan, which describes the presence of a point mutation at position -90 in the promoter region of the β -globin gene by using DNA sequencing. In summary, mutation scanning using DNA sequencing technique plays an important role in the identification of rare and unknown β -thalassemia mutations.

Keywords: β thalassemia , mutation, DNA sequencing

15.62

EFFECT OF THE MENSTRUAL CYCLE PHASE ON POSTOPERATIVE PAIN PERCEPTION AND ANALGESIC REQUIREMENTS

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Objective: To determine the effect of the menstrual cycle phase on pain perception and analgesic requirements following total abdominal hysterectomy in pre-menopausal women

Method: It was a prospective cohort study conducted at a university teaching hospital. Sixty women with regular menstrual cycles undergoing total abdominal hysterectomy were recruited and divided into 'follicular' and 'luteal' groups according to their menstrual history. A standardized anesthesia technique was employed. Postoperative pain was managed with intravenous patient controlled analgesia using tramadol and intravenous morphine was used for rescue analgesia. Pain was assessed for 24 hours and analgesic consumption was noted. *Results:* Pain scores on the recovery room and ward six and 24 hours postoperatively were similar in the groups at rest and on coughing. Pain scores at rest twelve hours postoperatively were significantly higher in the luteal group ($p = 0.043$), while they were similar on coughing. The tramadol requirement was not different significantly in the two groups. The number of patients requiring rescue analgesia and the amount of morphine used was also similar.

Conclusion: There was no difference in pain scores or analgesic requirements between the two groups except for rest pain at 12 hours which was significantly higher in the luteal group. As pain was assessed at thirteen different time points, a significant difference seen only at one point could be due to random chance. We suggest that future research should concentrate on studying this issue in patients of relatively younger age groups with more pronounced hormonal variations during the cycle.

Keywords: Menstrual cycle, postoperative pain, pain perception

15.64

AUDIT OF EMERGENCY DEPARTMENT DEATHS TO DETERMINE THE FACTORS AFFECTING THE DECISION TO RESUSCITATE

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Objective: Emergency Department (ED) is the gateway of our health system. ED outcomes such as mortality reflect the severity of presenting illness, underlying disorders as well as quality of the care that has been provided. There is limited knowledge of factors influencing the code decision of the patients who die in the ED. The study is conducted to provide an insight about the characteristics of the patients expired in ED and to determine the factors affecting the decision to resuscitate and/or code status.

Method: This was a retrospective study based on audit of Morbidity and Mortality log of the Department of Emergency Medicine, Aga Khan University Hospital from June 09 -June 2011. All patients who died in the ED or brought dead were included. Details about demographics, co-morbidities, primary and associated diagnoses, presence of shock and ED length of stay was recorded. Data was analyzed using SPSS version 16. A multiple logistic regression model was used to determine the strength of association between code status and other variables. *Results:* Total ED visits were 95,693 with 1201 deaths during study period. There were 47.1% dead on arrival and 53% were those who expired in ED. Of those who expired, 91% were adults and 60% were males. Mean age for this group was 52.7 years. About 46% patients were full code and presence of shock as well as acute coronary syndrome had a protective effect. Age, comorbidities, severe head injuries were positively associated with a DNR status whereas sex and ED length of stay had no effect on code status.

Conclusion: Age, chronic conditions and severity of the present illness has significant impact in deciding the code status of patients who die in the ED.

Keywords: Emergency department, death in ED, pakistan

15.65

ASSESSMENT OF MEDICAL SURGICAL NURSES' SHIFT HANDOVER PRACTICES AT A TERTIARY CARE HOSPITAL IN KARACHI, PAKISTAN

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Objective: Shift handover plays a significant role in maintaining continuity, safety, and quality of patient care. This study aimed to assess the compliance of nursing shift handover practices with respect to the ISBAPARRST (introduction, situation, background, assessment, problem, action, response, recommendation, scan, and thank you) tool. It also aimed to determine the differences in the level of compliance with regard to the participants' demographic and professional characteristics, the nursing shifts, and the day of the week.

Method: The shift handover practices of 43 nurses, working at one medical and one surgical unit of a Tertiary Care Hospital (TCH) in Karachi, Pakistan, were observed, utilizing a descriptive cross-sectional study design. The ISBAPARRST tool was adapted by the researcher from the TCH's shift report policy, shift handover tool, and evidence based literature. The tool's content validity and Inter-rater reliability was also ensured. **Results:** The study findings divulge that the mean duration of individual patient handover was 1.69 (+0.983) minutes. From a total of 129 observations, 88.4% of the observations showed that the practices were 'partially compliant' as they scored less than 60% on the ISBAPARRST tool; whereas, 11.6% observations showed that they were 'compliant' as they scored 60%-80% on the tool. This study also highlighted significant differences in the level of compliance with regard to nursing shifts ($p < 0.001$) and the day of the week ($p = 0.008$). **Conclusion:** The study results highlight the need for improving the compliance of shift handover practices to ensure patient safety; and suggest recommendations for administration, nursing education, and research.

Keywords: Nursing shift handover, Assessment of nursing handover, Evidence based handover protocol

15.66
FIRST REPORT OF A RARE β -THALASSEMIA MUTATION -90 (C-T) IN A PAKISTANI FAMILY: A CASE REPORT

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Objective: β -thalassemia is one of the most common and widely studied autosomal single-gene disorder in Pakistan. Approximately 5% of the Pakistani population carries β -thalassemia trait and every year over 5000 new children are born with the disease. A possible solution to this problem is prenatal diagnosis. Since 1995, more than 400 families have consulted AKUH laboratory for this test. Fetal sampling also known as chorionic villus sampling (CVS) and amniocentesis can be used as source of fetal cells for DNA analysis. **Method:** The Amplification Refractory Mutation System was used to screen for the β thalassemia mutations. For unknown mutation, DNA sequencing was attempted by capillary electrophoresis using Beckman Coulter genetic analysis system. **Results:** Case Report A 29 years old pregnant female with history of an affected child consulted the laboratory for prenatal diagnosis. The expecting mother was booked for CVS collection at 12 weeks of gestation. In addition, blood samples were drawn from both parents. The mother's mutation Codon 8/9(+G) was confirmed by ARMS PCR, but father's mutation remained unresolved. He was confirmed to be a carrier of -90(C-T) by DNA sequencing. Although, CVS was tested negative but the affected child was found positive for -90 (C-T) mutations. This is the first report from Pakistan, which describes presence of a point mutation at position -90 in the promoter region of β -globin gene. In summary, DNA sequencing technique plays an important role in the identification of rare and unknown mutations.

Keywords: β -thalassemia, Mutation

15.67
MULTIDIMENSIONALITY OF CRITICAL THINKING: A HOLISTIC PERSPECTIVE FROM MULTIDISCIPLINARY EDUCATORS IN KARACHI, PAKISTAN

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Objective: Critical thinking (CT) is a phenomenon of worldwide importance and is a desired outcome in higher and professional education. Development of CT is considered a primary responsibility of educators; however, educators find it challenging to foster learners' CT if their own CT understanding is not well developed. Limited research is available on multidisciplinary educators perceptions of CT. The goal of the study was to identify: 1. What are the perceptions of CT among educators from the disciplines of nursing, medicine, and education in higher education in Karachi, Pakistan. 2. What are the differences and similarities in the perceptions of CT among educators from the three disciplines?

Method: Using a qualitative approach, a descriptive exploratory design was used. 12 faculty members from nursing, medicine and education discipline were recruited as study participants using purposive sampling. Data was collected through semi structured interviews. Content analysis revealed the theme of multidimensionality of CT.

Results: The findings revealed that faculty has unique and diverse perceptions of critical thinking that influence their teaching practices in the classroom. The study findings also indicated that although the educators were from various disciplines, their perceptions of critical thinking were analogous.

Conclusion: Holistic and combined efforts by multidisciplinary faculty of higher education institutions in Pakistan are needed to train teachers and help them operationalize their perceptions of CT, before expecting faculty to adopt a true CT culture in their classrooms and promote learners' CT.

Keywords: Faculty perceptions, multidisciplinary education, critical thinking

15.68
ASSOCIATION BETWEEN DELETION OF SMN1 AND NAIP GENES IN PATIENTS SUSPECTED OF SPINAL MUSCULAR ATROPHY

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Objective: Spinal muscular atrophy (SMA) is an autosomal recessive disorder, characterized by degeneration of anterior horn cells of spinal cord leading to symmetrical limb paralysis. Its Incidence rate varies between 1 in 6,000 to 1 in 10,000 live births. SMA gene has been mapped to chromosome 5q11.2-q13.3. Approximately 95% of SMA patients show SMN1 gene deletion. Moreover, 45% SMA patients also carry deletion of exon 5 of Neuronal Apoptosis Inhibitory Protein gene (NAIP) To determine frequency of SMN1 and NAIP deletion in SMA patients.

Method: In this study, blood samples from 84 patients having

clinical features common to SMA were collected for SMN1 and NAIP analysis. PCR and restriction assay was performed to establish deletion of exon 7 and 8 in SMN1 gene and exon 5 in NAIP gene.

Results: A total of 84 cases including 37 (44%) females and 47 (56%) males were examined. Their mean age was six years. Out of 37 female samples, 9 were positive for NAIP gene deletion, whereas in two patients SMN1 gene was deleted but NAIP was normal. Sixteen samples from male patients were positive for deletion of both SMN1 and NAIP. While in three male patients only SMN1 was deleted. Occurrence of homozygous SMN1 deletion was highest (85%) in patients belonging to the age group 1-5 years followed by NAIP exon 5 deletion (15%).
Conclusion: Our data show that combined deletion of SMN1 and NAIP genes was most frequent in SMA patients of age group 1-5 years.

Keywords: SMA, Deletion, Exon

15.69

HAIR DYE POISONING AND RHABDOMYOLYSIS - A CASE REPORT

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Objective: Hair dye ingestion is a rare cause of toxicity in Pakistan. There are several case reports from India with variable presentations of hair dye toxicity. We are presenting case report of a patient who had accidental ingestion of hair dye.
Method: This is the case of a 55 years male who presented with accidental hair dye ingestion. Around 2 hours after the ingestion, he developed acute respiratory distress with facial edema and plethora along with stridor. He underwent emergent tracheostomy in nearby hospital after which he was transferred to AKUH ER. Vitals showed BP 133/82 mmHg P 67 /min, RR 23 /min, SaO₂ 96% on tracheostomy mask, T 37 C. General examination was unremarkable except for oral ulcers. On systemic examination, he had tender right hypochondrium. In the ER he was managed for trachietis along with aspiration pneumonitis and chemical oesophagitis. He was transferred to the special care unit where he was found to have decreased urine output. He was subsequently catheterized and was noticed to have red colored urine. Lab workup revealed acute kidney injury hence suspecting rhabdomyolysis. Initial BUN 17 mg/dl Cr 1.5 mg/dl raised to BUN 67 mg/dl Cr 4.4 mg/dl. Electrolytes revealed K 5.3 mmol/L BIC 18.5mmol/L. CPK was sent which was 39863 IU/L and Phosphate 7.8 mg/dl. Patient was aggressively hydrated and urine alkalization with IV bicarbonate infusion was started. However in view of oliguria and worsening azotemia, nephrology consult was generated and he was placed on hemodialysis. After few sessions of hemodialysis his urine output improved and renal functions stabilized. On discharge his condition had improved significantly without any requirement for long term hemodialysis.

Conclusion: Hair dye toxicity can be fatal if not recognized early. There is no antidote available. Rhabdomyolysis is a complication and needs to be managed aggressively in order to prevent long term morbidity.

Keywords: hair dye, poisoning, rhabdomyolysis

15.70

TITLE: PERCEPTIONS OF “CARING” IN NURSING EDUCATION BY PAKISTANI NURSING STUDENTS: AN EXPLORATORY STUDY

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Objective: ABSTRACT Background: Caring is considered to be a highly abstract concept. Nurturing a caring attitude in nursing education is important as this is the first place for students to learn about the most significant values and essence of their profession. Aim: The aim of the study was to describe the concept of caring from the perspective of nursing students.
Method: Methodology: An exploratory research design was utilised for this study. Eight senior nursing students from one government institute (College of Nursing) in X country were recruited as study participants. Data was generated through in-depth one-to-one interviews and analysed using Creswell’s six-step guide for qualitative data analysis. The interviews were tape recorded and a “member check” technique was used.
Results: Findings: The study results found the themes of caring as a mothering relationship, helping attitude, limit setting, communication, and a source of empowerment and development.
Conclusion: Conclusion. The study findings are meaningful as they identify the types of behaviours that lead to positive academic experiences in students. The study recommends including a course on “the concept of caring” in the first year of RN and BScN programmes, so that from the very beginning nursing students can acquire the concept of caring.

Keywords: Caring, nursing students, nursing education

15.71

ACUTE MDMA TOXICITY WITH MULTIORGAN FAILURE: CASE REPORT FROM A TERTIARY CARE CENTER IN PAKISTAN

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Background: MDMA/Ecstasy is an under-reported cause of toxicity in Pakistan. Most of the current data available on MDMA toxicity is from western countries. Drug Abuse Warning Network (DAWN) data have shown a steady increase in emergency department (ED) visits from MDMA abuse. However MDMA abuse is becoming an emerging problem in developing countries as well. We are presenting a case report of a patient with severe MDMA toxicity in a tertiary care hospital in Pakistan.
Case Presentation: 25-year male presented with altered sensorium and low GCS 8/15 in the ED. Attendants gave history of first time intake of two tablets of MDMA/ecstasy following which patient became unresponsive. On examination he was tachypneic, tachycardic, had hyperthermia T 42 C and generalized skin hyperemia. Systemic exam showed positive findings of bilateral equal, dilated and reactive pupils. Also he had brisk reflexes and bilateral upgoing planters. EKG showed sinus tachycardia. Blood tests revealed raised TLC 24.5 x 10⁹/L BUN 15mg /dl Cr 2.3 mg/dl Na 145 mmol/L K 6.3mmol/L Cl 104mmol/L Bicarb 7.1 mmol/L. pTT 11.6 seconds and aPTT 40.95 seconds with INR 1.10. ABG showed Ph 6.8. CPK 4320

IU/L. Urine toxicology reported positive amphetamine 1008 (cut off 1000). Patient was immediately assessed to have severe MDMA toxicity with potentially life threatening manifestations of malignant hyperthermia, severe metabolic acidosis, acute renal failure, low GCS, rhabdomyolysis and raised pTT. Early aggressive management was started. Rapid sequence intubation was performed. Resuscitation done with IV fluids and broad spectrum antibiotics and Alkanization of urine with IV Bicarbonate. Electrolyte imbalance was treated. Repeat labs showed BUN 16 mg/L Cr 1.9 mg/dl. Patient was transferred out due to unavailability of bed in ICU then. On follow up patient had recovered well without manifesting long term morbidity of potentially fatal complications he had presented with.

Conclusion: Acute severe MDMA toxicity can manifest with multi-organ failure. Earlier diagnosis along with aggressive treatment will prevent significant morbidity and near fatal complications.

Keywords: MDMA, toxicity, DAWN

15.72

A TEN-YEAR ANALYSIS OF RESEARCH ARTICLES OF THE AGA KHAN UNIVERSITY PUBLISHED IN PEER-REVIEWED JOURNALS

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Background: Assessment and evaluation of research conducted in a research-based University has a significant impact on the scientific performance of an institution. One of the major indicators used by universities to assess research impact is the quality of papers published in peer-reviewed journals. This provides a clue to the area where research is moving towards. Objective: To analyze journal articles published by different entities of AKU during past 10 years.

Method: The AKU Research Office has been maintaining publications record mainly of the Karachi campus since 1999.

Other publications across AKU campuses in Pakistan, East Africa and United Kingdom, were collected over the years and collated for reports.

The process consisted of following levels:

- Level 1 Publications search using EndNote software (for PubMed), Google Scholar and PakMedinet, Scopus, and AKU Library's online database resources (e.g. SciDirect, Springer Link, Cambridge Journals, Mosby's Nursing Consult, Wiley Inter Science, etc.).
- Level 2 Validating and verifying entries: Comparison with information provided by departments
- Level 3 Editing database for uniformity of information and including impact factors.
- Level 4 Categorization: Indexed journals, National/International, Impact Factor.
- Level 5 Categorization: Types of articles, departments, Entity.

- Level 6 Identifying thematic areas for each publication.
- Level 7 Analyzing database entry using EndNote's subject bibliography option.

Results: The overall analysis revealed that although the number of research articles had increased in number over two decades, but no significant changes could be attributed to thematic research.

The percentage of indexed journal papers over 10 years have increased and has seen to be plateaued over the last 5 years. The overall AKU publication averaged to be 400, of which 80% are published in peer-reviewed journals.

Conclusion: Health sciences, predominantly being the largest faculty, hence the highest percentage belonged to the Medical College with 25% in maternal/neonatal and child health, 50% in infection and immunity and 25% research papers related to non-communicable diseases. However, there is some overlap in these themes which could not be analyzed at this point.

Note: Book published in the last seven year is around 30 in number. Most of them pertain to teacher education and maternal/child health, and a few related to Muslim civilization.

Keywords: Publication assessment, thematic research, online library, research office

15.73

ROLE OF PROFICIENCY TESTING (PT) IN EDUCATION AND QUALITY IMPROVEMENT IN A DEVELOPING COUNTRY.- EXPERIENCE FROM A TERTIARY HOSPITAL CLINICAL LABORATORY

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Objective: Analysis of quality assurance results of CAP surveys received in hematology section of Aga Khan University Hospital, compare it with the results of other participating laboratories and use data from CAP surveys as a tool to improve quality and train staff members in a tertiary care hospital, thus improving patient care.

Method: A retrospective study was conducted for data collection of CAP (College of American Pathologist) survey. Results of two years i.e. 2009 and 2010 were taken in to consideration. Selection criteria included all CAP survey received during this time period. These surveys were Automated differential and Blood cell morphology survey (FH6- 3surveys per annum), Blood parasite survey (3 surveys per annum), Erythrocytes sedimentation rate (2 surveys per annum), Glucose 6 phosphate dehydrogenase enzyme survey (2 surveys per annum), Viral markers (3 surveys per annum), Glycohemoglobin survey (2 surveys per annum), Hemoglobinopathy survey (2 surveys per annum) and Reticulocytes count (2 surveys per annum). These survey received through CAP were analyzed by pathologist and technologist working in the hematology section of Aga Khan University Hospital, the results were compiled and then sent to CAP. After receiving the results, they were shown in departmental meeting and quality

improvement control committee meeting (QICC).
Results: Total number of 8 surveys were received from CAP (College of American Pathologist) for analysis during 2009 and 2010 with 1050 parameters. Among these surveys our results were 99.6%. 4 results was unacceptable by the CAP. In some surveys (like hemoglobinopathy, blood parasite and automated differential and blood cell morphology survey) a part of survey was sent as educational challenge which was not graded and it was only meant for learning and educational purposes.
Conclusion: The aim of proficiency testing, known as External Quality Assessment (EQA) is to provide laboratories with a means by which they can objectively assess and demonstrate the reliability of the results produced by their technologists and the analytical methods employed. True quality improvements may take place in response to proficiency testing failure. We conclude that our results are compatible with the results of CAP (College of American Pathologist) External Quality Assurance Schemes like CAP (College of American Pathologist) are an excellent way of monitoring long term QC and are a very useful tool for planning any future strategy to improve quality.

Keywords: Proficiency Testing, Quality Improvement, Education

15.74

EFFECTIVENESS OF HOME HEALTH CARE PROGRAM IN REDUCING HOSPITAL STAY AND CONTINUITY OF QUALITY NURSING CARE AT PATIENT'S DOORSTEPS

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Objective: The Aga Khan University Hospital Home Health Care (HHC) services were established to provide health care facility to patients after their discharge from hospital. This study was done to explore overall utilization of HHC by the patients who need visits for IV medication and dressings at their homes. After providing HHC facility at their homes, overall hospital stay was decreased.

Method: Exploratory descriptive study was done based on data available for both procedures i.e. Wound dressing and IV medication January 2010 to September 2011 in HHC registration record system.

Results: Analysis of the data for each quarter shows that after availing services of HHC, early discharges have been done to vacant 645 beds in hospital for the year 2011. This has helped in reducing the In-Hospital patient's load by reducing the average length of stay (3 days) for mentioned procedures. Exemplary variation has proven the recognition of HHC services throughout the country, thus helping AKUH in providing quality care at patient's doorsteps.

Conclusion: HHC an emerging health care facility. Current data revealed that its intensity of need is increasing with passage of time, where investment and its expansion is required in achieving hospital goals and mission in terms of decreasing unneeded hospital stay and hospital bed availability to other patients.

Keywords: Home health care, dressing and IV, hospitalization

15.75

MONITORING OF CRITICAL LABORATORY RESULT REPORTING THROUGH COMPUTERIZED SYSTEM: ADVANCEMENT TOWARDS QUALITY IMPROVEMENT.

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Objective: To review the outcome of critical result reporting after implementation of computerized monitoring through integrated laboratory management system.

Method: The study was conducted at the Clinical Laboratories of The Aga Khan University, Karachi, Pakistan. It was a retrospective study. Data of previous 26 months i.e from May 2009 to June 2011 was taken into consideration. Certain rules were designed with the help of information technology personnel and incorporated in the system. The rules were: 1. Critical tests and their ranges were identified by each section of Clinical Laboratory. 2. Critical high and low values were incorporated in the system. 3. According to these values, the system gave flagging of critical low values as bold blue and critical high values as bold red. 4. An icon of informing critical results was made available at the result entry option so that the proper documentation of informing the results should be possible. 5. The data incorporated in the system through that icon was compiled by the system and a report was printed out next morning by the respective section. Every section of the laboratory reviews the previous day data of critical results and identifies the root cause, if the results were not communicated. At the end of the month, every section compiles this daily data into a monthly report. A quarterly report of critical results informed was then prepared by every section and percentage of critical results not informed was calculated. This quarterly report was collected from each section of clinical laboratory and then compiled to represent the overall performance. Initially the target for reporting critical values was set as 98.0% which was then raised to 99.0% so as to be more competitive.

Results: During the study period, a total of 58421 results found to be critical which is 0.6% of the total volume of tests received in the designated period. The results that were effectively communicated were 98.94%. However, 1.06% results could not be reported. We will statistically analyze the data and share in the final poster presentation.

Conclusion: Introduction of a computerized system for monitoring the critical value reporting proves to be very effective. Information technologies always help in providing best care to the patients which is the aim of a hospital who believes in quality care.

Keywords: Critical results, Computerized system, Quality Improvement

15.77

DEMOGRAPHIC AND INJURY CHARACTERISTICS OF TRAUMA VICTIMS PRESENTING TO A TERTIARY CARE CENTER IN PAKISTAN

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Objective: Monitoring traumatic injury and care is essential to improve trauma outcomes. We describe patient and injury characteristics of trauma victims presenting at our institution
Method: We reviewed the records of all adult (age >15 years) trauma patients admitted between January 1998 and August 2010 that met the trauma team activation criteria. Information on demographics, injury characteristics, injury severity, hospital procedures and outcomes were collected and descriptive analysis was performed.

Results: A total of 1,227 trauma incidents were reviewed. 86% of patients were male and 80% were below 45 years of age. Traffic accidents accounted for majority of cases (61%) followed by firearm injuries (18%). 6% patients suffered blast injuries. 33% patients had been transferred from another health care facility. The mean injury to ER time was 4.2 hours (\pm 5.5 hours). Extremity injury was present in 54% of patients followed by injuries to the face (38%) and head (36%). 77% patients had an RTS score of above 7 and the Injury severity score was low (0-15) in 55% patients. Surgical intervention was required in 38% of patients and 31% of the total required admission to the intensive care unit. The mean length of hospital stay was 2.3 days (\pm 5 days) with 31% of patients requiring stays of greater than 6 days. Complications occurred in 11% of patients and 6.4% of patients died

Conclusion: The pattern and presentation of injury has been described. Our patients suffer great delays in receiving care. This needs to be addressed to improve trauma outcomes.

Keywords: Trauma, delays, injury

15.78

INCIDENCE OF HEMATOMA AFTER FEMORAL ARTERY PUNCTURES IN PATIENTS UNDERGOING DIAGNOSTIC OR INTERVENTIONAL ANGIOGRAPHY

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Objective: The purpose of this audit is to assess the incidence of hematoma after femoral artery puncture in patients undergoing diagnostic or interventional angiography.

Method: This prospective audit was carried out over a period of 4 months from January 1st 2009 to April 30th 2009. All patients undergoing diagnostic or interventional angiography via femoral route were included in this study. Patients who were heparinized during the procedure or disoriented patients who were unable to follow the instructions were excluded from the study. Predisposing conditions like CLD, uremia, coagulopathy

and hypertension were also considered during evaluation.
Results: Eighty two patients were evaluated in this audit including 57 males and 25 females. Age ranged from 9 to 80 years. In 68 cases 5 FR sheath was used for the procedure and in 11 cases 6FR sheath was used. Seven and 8 FR sheaths were used in 2 and 1 patients respectively. Sheath removal and puncture site compression was given by senior faculty in 7 patients, by VIR fellow in 51 patients, by residents in 14 patients and by trained nurses in 10 cases. Arterial puncture site hematoma was found in 1 patient in which 5 FR sheath was used and compression was given by a resident. The other predisposing factors like CLD, uremia, coagulopathy and hypertension were not related to hematoma formation.

Conclusion: We observed a very low incidence (1.21%) of arterial puncture site hematoma in patients undergoing diagnostic or interventional angioplasty. The frequency is far less compared to published data and practice standards guideline.

Keywords: Hematoma, Puncture Site, Angiography

15.79

DO WE NEED TO IMPROVE? CUSTOMER SATISFACTION SURVEY IN ULTRASOUND SUITE

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Objective: The purpose of this study is to determine the level of customer (i.e. patient) satisfaction in the ultrasound suite as regards to the staff at reception, staff in the ultrasound suite and the radiologist attending them in the ultrasound room.
Method: We conducted a cross sectional survey in department of radiology, Aga Khan University hospital Karachi from July 01, 2009 to July 31, 2009. The information was collected through a designed questionnaire by a third party volunteer after informed consent. The questionnaire initially assessed service satisfaction at the reception, in the ultrasound suite and the radiologist attending them in the room. The indicator for quality of service given included promptness, attention, caring attitude, clarity of instructions given and self introduction by the doctor and the staff attending them.

Results: Our overall interpretation derived from patient's given response presented that 47% rated service as very good, 37% rated as good, 13% rated ok, 1.9% percent rated service as poor and only 0.1% rated in very poor, there was on 3% difference in customer rating very good, which means 44% responded very good in overall satisfaction rating where as 47% was rate when calculated rating in general.

Conclusion: Based on our survey its was observed that customer showed overall satisfaction but in general we identify few concerns through which we could further improve our standards of service, with specific focus on our first point of contact that is at reception.

Keywords: Ultrasound, customer satisfaction

15.80**DOES EVERY SECOND COUNTS IN EMERGENCY IMAGING? CAUSES OF DELAYS IN PORTABLE X-RAYS IN EMERGENCY DEPARTMENT EVALUATED**

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Objective: The objective of this study is to evaluate the causes of delay in performance of portable x-rays in a tertiary care hospital's emergency department.

Method: This was Observational study conducted at emergency department of Aga Khan University Hospital. The data collection was from the date 23rd November 2009 to 28th November 2009. The study included all patients in whom portable x-rays were performed in emergency department. Rests of the portable x-rays performed in wards were excluded.

Results: Out of 100 patients, 18% patients were not ready for x-ray, in 9% patients dresses were not changed for x-ray, 6% patients were busy in I.V Cannulation, and 3% patients had other procedures (sampling) going on in 15% patient's radiology request forms were not ready. In 66% x-ray cases, ER support staffs were not available to help the radiographer for patient handling and placing of x-ray cassettes.

Conclusion: In our limited experience we observed that there was insufficient support from emergency staff in facilitation of performance of portable x-ray; Also patient's radiology order request forms were not made by requesting physicians in advance as well as patients are not ready for x-rays because of the other procedures going on same time.

Keywords: Portable radiography

15.82**A CASE OF VOGT-KOYANAGI -HARADA**

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Objective: Vogt-Koyanagi-Harada syndrome or Uveoencephalitis is a rare systemic disease of melanocyte-containing organs. It is characterized by granulomatous panuveitis with exudative retinal detachment. The eye symptoms are often accompanied by skin and neurologic manifestation. The diagnosis of this condition is based on the revised criterion set by an International Committee on Nomenclature. The standard treatment involves topical and systemic steroid therapy. Non-responsive cases are treated with immuno-suppressants. We report a case of this rare disease and its management.

Method: A 26-year-old male was diagnosed with VKH in an eye clinic in Sydney, Australia. He presented there with bilateral red eye. And decreased vision—right more than the left. On examination he was found to have bilateral uveitis with right serous retinal detachment. A series of blood tests were done to rule out other causes of uveitis. He was put on (oral) systemic (120 mg / day) and topical steroids.

Results: Post-treatment OCT showed resolution of exudative RD. Amsler Grid showed wavy lines and post-treatment FFA also showed positive response to treatment. The audiogram showed sensorineural hearing loss in the high frequency range

The dose of steroid was increased to 60 mg/ day and tapered over 3 months. His best corrected vision in the right improved to 20/20 from 20/40. His near vision is N/6 in both the eyes. Hearing improved and metamorphasia also decreased slightly. The only remaining complaint has been the glare during night driving He is on maintenance dose of steroids 5 mg/day for 3 weeks. He was referred to a skin specialist but had no skin signs.
Conclusion: High dose systemic steroid therapy with proper tapering resulted in good visual prognosis in this case.

Keywords: VKH, steroids, vision

15.84**TRENDS IN ACUTE POISONING: 22 YEARS EXPERIENCE FROM KARACHI, PAKISTAN**

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Objective: Poisoning is a serious public health problem worldwide. Studies from low and middle income countries reveal a different spectrum of poisoning as compared to high income countries. The magnitude of poisoning is not only increasing worldwide but also getting new dimensions. The reasons for these changing trends are socioeconomic patterns, new development of drugs and chemicals, agricultural modernization, green revolution in various regions and easy access to over the counter drugs. This study is being conducted to determine trends in patterns of poisoning if any over a period of 22 years in an emergency department of tertiary care hospital of Karachi Pakistan.

Method: Medical records of patients admitted at Aga Khan University Hospital from January 1989 to December 2010 with a provisional diagnosis of poisoning from Emergency Department, were reviewed. Data regarding demography, information of substance causing poisoning, clinical presentation and management was collected of 671 cases and analysed using SPSS v19 for descriptive statistics.

Results: In the past 22 years, 3214 cases of toxicity were admitted in our institute. Male female ratio was almost equal. Ingestion was the most common route. Prescription medication, insecticide and kerosene oil were the commonly ingested poisons. In 83% cases ingestion was from a labelled container. Patients' home was the common place of incident. Majority, 56% cases had to be managed in a critical care area of the emergency. Most were admitted in hospital but were later lost to follow up.
Conclusion: In the past two decades we treated a large number of poisoning cases at the Emergency Department of Aga Khan University Hospital. The nature of agent involved is prescription medication taken at home by these patients.

Keywords: Acute poisoning, experience, Karachi

15.85

ASSESSING PATIENT SATISFACTION WITH RADIOLOGICAL SERVICES IN A LARGE TERTIARY CARE HOSPITALS OF KARACHI.

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Objective: To determine the level of patient's satisfaction with radiological reception and services, to document areas of dissatisfaction and to develop appropriate recommendations for the Department. *Introduction:* The quality of health care should be measured increasingly include patient's satisfaction which is one of the important dimensions. However a single explanation of why surveys of patient's views have a suddenly become such a visible & regular aspect of the health care organization. This survey considers some of the potential problems & strategic questions involved in surveys of patient's

satisfaction & analyzing a survey of patient's views. *Method:* All patients scheduled (or unscheduled) for any diagnostic or interventional procedure in different reception areas of the Departments of several tertiary care hospitals including AKUH, LNH, ZMU, JPMC, Abbasi Shaheed, Civil hospital were eligible for the survey conducted over the months of September in 2010. Patients completed a semi-structured self-administered questionnaire during their reception stay and during and after their procedure. During the survey period 68 numbers of patients were eligible; 8 numbers of patients were refused. The group surveyed consisted 25 numbers of females & 35 numbers of males.

Results: We surveyed 20 patients in each hospitals and their level of satisfaction are as follow. Reception 90% satisfied, 10% were not 60% satisfied, 40% were not radiographer 80% satisfied, 20% were not 63% satisfied, 37% were not

Conclusion: Our survey "accessing patient's satisfaction with radiological services in large tertiary care hospitals of Karachi" showed that most of the patients were satisfied with the radiology facilities & services.

Keywords: Patient satisfaction, tertiary care

15.90

PRACTICES OF WRITTEN FEEDBACK IN NURSING DEGREE PROGRAMMES IN KARACHI

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Background: Good academic writing skills, is a key to success for students. Without good academic writing skills students find it challenging to fulfill the requirements of their studies in higher education. Written feedback is known to assess and develop students' academic writing skills. However, many factors may affect the practices of written feedback and its utilization. The study aimed at identifying students' perceptions about written feedback in the nursing degree programmes in Karachi.

Method: A descriptive exploratory design was used in this study. The sample consisted of 379 students from nine nursing institutions. The data was collected through a modified Assessment Experience Questionnaire by Gibbs and Simpson. The data was analyzed for descriptive statistics.

Results: Variations were found in the practices of written assignments, provision of assessment criteria and provision of written feedback. 80% of the students reported receiving written feedback, with or without oral feedback. However, 20 % of them received only verbal feedback. Only 40% students reported receiving feedback on regular basis. Assignment guidelines were not always in a written form, were ambiguous and the feedback not reflective of the guidelines.

Conclusion: The findings have implications for teachers, students and institutions similar to the context of this study. Teachers need to be aware of the role and impact of written feedback on students' learning and develop competence for giving effective feedback. Finally, institutional commitment and policies are needed to promote the practices of effective written feedback.

Keywords: Higher education, written feedback, quality of feedback

15.91

TO DETERMINE THE MEAN INDUCTION DOSE OF PROPOFOL WITH KETAMINE-PROPOFOL AND MIDAZOLAM-PROPOFOL CO-INDUCTION.

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Objective: To determine the mean induction dose of propofol with ketamine-propofol and midazolam-propofol co-induction. *Method:* After approval from institutional ethical review committee (ERC) and written informed consent, a total of 60 patients with American society of anaesthesiology (ASA) physical status I and II, aged 20-50 years, of either sex, undergoing daycare surgeries requiring general anaesthesia were included in this study. The patients were randomly allocated into two groups; group A and group B. patients in group A received ketamine-propofol and those in group B received midazolam-propofol for induction of anaesthesia. During preoxygenation, all the patients received pethidine 0.8mg/kg followed one minute later by co-induction agent, either 0.3mg/kg ketamine or 0.03mg/kg midazolam. Injection propofol was given 10mg every five seconds until patient stops counting and does not respond to a reminder to continue counting. The level of sedation and alertness was targeted to an observer's assessment of alertness/sedation score of 2.

Results: Mean induction dose of propofol between two groups was compared by student's T test. The mean induction dose was 53.67 (30-120) mg in group "A" patients and 52.33 (30-110) mg in group "B" patient. The difference between the mean inductions doses of propofol were statistically insignificant (P-value of 0.78). Mann Whitney test was also used to compare the mean induction doses of propofol between two groups. The difference in mean induction doses of propofol was statistically insignificant (P-value of 0.57).

Conclusion: There is no difference in the mean induction dose of propofol in ketamine- propofol and midazolam- propofol co-induction.

Keywords: Co-induction, ketamine-propofol, midazolam-propofol

15.92

GENETIC RISK SCORES ARE ASSOCIATED WITH DIABETES RELATED TRAITS IN SOUTH ASIANS AND PROVIDE TOOLS FOR MENDELIAN RANDOMIZATION STUDIES.

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Objective: To test the hypothesis that genetic variants associated with diabetes related traits in Europeans would explain a similar proportion of phenotypic variance in a Pakistani population.
Method: We used individuals from the Control of Blood Pressure and Risk Attenuation Trial (COBRA) in Karachi, Pakistan. Individuals were aged 40 years or older. A total of 81 single nucleotide polymorphisms (SNPs) associated with either fasting glucose, BMI, blood pressure or triglyceride levels were genotyped. We tested individual SNPs and weighted genetic risk scores against the relevant metabolic trait. We next performed Mendelian randomization tests using an instrumental variables approach between pairs of metabolic traits.

Results: Combining information from multiple genetic variants showed that fasting glucose variants, BMI variants, triglyceride variants, systolic blood pressure variants and diastolic blood pressure variants explain 2.9%, 0.7%, 5.5%, 1.2% and 1.8% of the variance in those traits respectively. These effects are consistent with those observed in Europeans. Using a Mendelian randomization approach we observed evidence that genetically influenced raised triglyceride levels do not causally affect type 2 diabetes risk ($p=0.0003$ for a difference between observed and instrumental variables correlations), and that genetically influenced raised glucose levels do not causally affect triglyceride levels ($p=0.03$).

Conclusion: Genetic variants identified in Europeans are associated with diabetes related traits in South Asians with comparable effect size and can be used in Mendelian randomization studies.

Keywords: Genetic risk scores, Mendelian randomization, diabetes

15.93

COST-EFFECTIVENESS OF COMMUNITY-BASED STRATEGIES FOR BLOOD PRESSURE CONTROL IN A LOW-INCOME DEVELOPING COUNTRY

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Objective: Evidence on economically efficient strategies to lower blood pressure (BP) from low- and middle-income countries remains scarce. The Control of Blood Pressure and Risk Attenuation (COBRA) trial randomized 1341 hypertensive subjects in 12 randomly selected communities in Karachi, Pakistan, to 3 intervention programs: (1) combined home health education (HHE) plus trained general practitioner (GP); (2) HHE only; and (3) trained GP only. The comparator was no intervention (or usual care). The reduction in BP was most pronounced in the combined group. The present study examined the cost-effectiveness of these strategies.

Method: Total costs were assessed at baseline and 2 years to estimate incremental cost-effectiveness ratios based on (1) intervention cost; (2) cost of physician consultation, medications, diagnostics, changes in lifestyle, and productivity loss; and (3) change in systolic BP. Precision of the incremental cost-effectiveness ratio estimates was assessed by 1000 bootstrapping replications. Bayesian probabilistic sensitivity analysis was also performed.

Results: The annual costs per participant associated with the combined HHE plus trained GP, HHE alone, and trained GP alone were \$3.99, \$3.34, and \$0.65, respectively. HHE plus trained GP was the most cost-effective intervention, with an incremental cost-effectiveness ratio of \$23 (95% confidence interval, 6–99) per mm Hg reduction in systolic BP compared with usual care, and remained so in 97.7% of 1000 bootstrapped replications.

Conclusion: The combined intervention of HHE plus trained GP is potentially affordable and more cost-effective for BP control than usual care or either strategy alone in some communities in Pakistan, and possibly other countries in Indochina with similar healthcare infrastructure.

Keywords: Community-Based Strategies, Blood Pressure, Cost-Effectiveness

15.94

MAINTAINING QUALITY: WHAT WE CAN DO IN MALARIA DIAGNOSIS AND HOW TO DO MICROSCOPY IN A TERTIARY HOSPITAL CLINICAL LABORATORY.

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Introduction: Malaria is a serious, sometimes fatal disease resulting from infection with Plasmodium species transmitted by the bite of Anopheles mosquitoes. Clinical diagnosis, where malaria suspected is based on the history, symptoms and clinical findings which must be confirmed by a parasitological laboratory diagnosis. Microscopy is still the gold standard for laboratory confirmation of malaria. Thick and thin films are used for diagnosis of malaria. In many developing countries, microscopy is not reliable and many practical issues can lead to the misdiagnosis of malaria. In addition to microscopy, other methods have been developed recently for detection of malaria parasites for e.g "Rapid Diagnostic Tests" (RDTs) and Polymerase chain reaction (PCR). Aga Khan University Hospital is a JCIA and ISO certified tertiary care hospital which participates in several external quality assessment programmes for example NEQAS (national external quality assessment service), CAP (College of American Pathologist). Our experience has shown that several factors contribute to lowering of quality standards and their correction is a quality improving exercise. •Insufficient training and supervision •Microscopes and reagents quality •Methodology errors in slide staining. •Artifacts •EDTA storage changes leading to distorted morphology.

Method: This was a prospective study conducted from January 2011 till August 2011. All malaria films were examined by two observers junior and senior technologist. Examination of thin smears for identification of species and thick smears for estimation of parasitemia was done. A minimum of 200 oil immersion fields were examined in thick film which took about 5-10 min for an experienced observer but longer for a less experienced observers. The findings of both observers were reviewed by the parasitologist and results compared.

Results: Total no of slides observed for malarial parasites by technologist were 16880, out of these 950(5.6%) parasites were missed by junior technologist because of inexperience in microscopy while 160(0.9%) parasites were missed by senior technologist because of poor quality slides. All slides were then reviewed by the parasitologist, technical and diagnostic errors were analysed and corrective action undertaken. This ensure that diagnostic patient care is not compromised.

Conclusion: Microscopy remains the GOLD standard. Training and Quality assurance practices are essential in a modern laboratory. Most common causes of missing malaria are poor staining (artifacts) and untrained staff. This can be minimized by workshops, training of staff, preparation of good quality slides and more participation in external quality assurance programs. To maintain quality, a multifaceted approach is required and constant improvements should be implemented.

Keywords: malaria, diagnosis, practical issues

15.95

PERCEPTION AND ATTITUDE OF KARACHI RESIDENTS ABOUT ORGAN DONATION AND TRANSPLANTATION: A PILOT QUALITATIVE ANALYSIS

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Objective: Organ donation to save a life is a voluntary act and it comes from within the general public and their spirit of philanthropy and helping the community in need. The shortage of organs for transplantation is a problem locally due to lack of awareness and motivation among the people. The purpose of this on-going pilot study is to gather information about the perception and attitude of the residents of Karachi, Pakistan regarding pros and cons of organ donation and transplantation.

Method: Adapting a qualitative study design we conducted fifteen in-depth interviews from August to October of 2011 at Pakistan Medical Association, Karachi. The study participants were invited from a local mall. Young adults from ages 18 to 25 years and elders from ages 26-45 years were included. Data was entered in roman Urdu and translated before analysing in Nvivo v2.

Results: Five main themes have been preliminary identified from our data set. 'General Concept of Organ Donation', 'Portal of Information', 'Misinformation', 'Religious Views' and 'Future Directives'. People are aware of the concept of organ donation especially after its mention in newspapers and through friends. Most were of the opinion that it is limited to kidneys and 'may be' done for liver. According to the participants the cities involved are Karachi, Islamabad and Lahore. They realize that our society is conservative and it is a rare phenomenon. A decision to arrange for a donor for one's relative would involve many aspects such a sentiments, humanity and lack of involvement of people in time of need.

Conclusion: Even though our analysis is not complete at the moment but we can conclude that the main study of this project will definitely give us insight to this controversial topic. People realize the constraints of our society but are still waiting to be empowered by the educated class.

Keywords: Transplantation, Karachi, Ethics

15.97

IMPROVE PRIORITY SETTING FOR EMERGENCY AND ADD-ON CASES BY INTRODUCING COLOR CODE SYSTEM IN OPERATING ROOM

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Objective: In an eleven operating room (OR) setting having block scheduling system only one OR is designated for emergency and elective add-on cases. Prioritization of emergent, urgent and semi-urgent cases was not finely distinguished resulting into decreased patient and healthcare personnel satisfaction and increased NPO time. The purpose of this quality circle was to ensure streamline utilization of emergency OR by formulating

guideline for proper classification of emergency cases. This will result in having defined guidelines for emergency, urgent and semi-urgent cases.

Method: A Juran's Continuous Quality Improvement project was done, a multidisciplinary team reviewed the old existing system (black & red color coding), collected data regarding accommodating cases within one hour and identified that 59.98% cases took more than one hour to arrive into OR resulting in wastage of precious OR time. The team formulated a new guideline for prioritization of emergency cases on its nature of emergency by giving color codes i.e. red, orange and blue.

Results: The new guideline resulted in proper accommodation of cases within the defined time frame hence increasing patient satisfaction and decreased patient's NPO time.

Conclusion: This strategy of classification of emergency cases is a useful tool in running an emergency OR in a tertiary care hospital where influx of emergency cases is very frequent.

Keywords: Operating room, emergency classification

15.98

'THE ONE TRULY SERIOUS PHILOSOPHICAL PROBLEM': ETHICAL ASPECTS OF SUICIDE

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Objective: Suicide is a major global public health problem with an estimated one million deaths every year. It is one of the most personal yet one of the most complex acts anyone can perform, as it goes to the very core of the concept of human existence and the meaning of life. .

Method: Review of the literature

Results: The philosophical debate on suicide has spanned centuries with no clear answers. Juxtaposed within the various perspectives that suicide can be studied from is the ethical perspective that brings into sharp focus the conflict between personal autonomy and societal responsibility towards suicidal individuals. Mental health professionals find themselves in the midst of this conflict as they are assumed to have the responsibility to prevent suicide in their patients, while patients' responsibility towards themselves is frequently overlooked.

Conclusion: Mental health professionals need to be aware of the ethical concerns that arise in the care of suicidal patients.

Keywords: Suicide, ethics, philosophy

15.99

MEDICATION HANDLING BY OR TECHNICIAN

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Objective: According to the international patient safety goals, medication handling is an important component. In Operating Room (OR) setting, intra-operative medication handling included taking orders, preparing and administration during surgery was done by OR Technicians (unlicensed assistants). They are the

main workforce in our tertiary care hospital, whose basic education had no curriculum of medication handling in their diploma syllabus. The OR management identified and started working on this crucial issue.

Method: After multiple meetings with nursing management, Nursing Education Services (NES) and medical director, a list of all medications was prepared and found high consumption of anticoagulants, antibiotics, irrigation fluids, local and topical anesthesia and ophthalmic medications. A medication handling course was organized by OR management in collaboration with NES in hospital and senior technicians were trained. The module included the education on name of medication, its indication, contraindication, dosage, methods of preparation and checking five rights while handling medication. OR techs were also enforced to label medication in intra-operative phase with the help of sterilized labels.

Results: By December 2010, most of the senior OR Technicians (criteria: having at least 3 years experience) were certified by Nursing Education services for the basics of medication handling in OR. The passing criterion was 85%. No junior technician was allowed to prepare medication. Certified staff/Nurse was always made available for fulfilling this requirement.

Conclusion: The clause has been included in medication handling policy of the hospital. By December 2010, all almost all senior OR technicians are certified. The next round of certification will include the remaining technicians' training and development, starting in the mid of year 2011.

Keywords: medication handling, OR Technician

15.100

PREDICTED STRUCTURE-FUNCTION ANALYSIS OF HUMAN PROMININ-1 (CD133): A FUNCTIONAL STEM CELL MARKER

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Objective: Human CD133 (prominin-1 or PROML1) is a 120 kDa N-glycosylated pentaspan membrane protein expressed on the surface of normal and cancer stem cells (cancer-initiating cells), progenitor and a variety of epithelial cells. The underlying mechanism of CD133 function is not fully unraveled. However, recent reports have suggested its role in repressing stem cells differentiation and enhancing proliferation capacity of cancer stem cells. These findings have established CD133 as an authentic stem cell marker and opened new avenues for targeting CD133 in differentiation induction therapies of specific malignancies. This study focuses on analyzing human CD133 nucleotide and protein sequences for deducing its predicted structural-functional dynamics.

Method: Gene and protein sequences were retrieved from NCBI, Ensembl and Swiss-Prot. BLAST searches were performed on these sequences. Conserved domain architecture was determined by Conserved Domains Database (CDD). Similarity, multiple sequence alignment, phylogenetic relationships and functions were revealed by Clustal W2 and Ensembl.

Results: The transcribed region of CD133 spans 122kb and contains at least 37 exons. Alternative splicing of these exons

resulted in 7 functional human CD133 isoforms which are expressed in tissue dependent manner. Homologues of CD133 are found to be expressed in various metazoans species with maximum homology with chimpanzee (98% identity), cow (53%), dog (65%), chicken (51%), mouse (60%), rat (60%), worm (14%), zebra fish (39%), fruit fly (15%) and mosquito (16%) were evolved distantly. However, no CD133 like protein was observed in bacteria, yeasts and plants. Conservation of CD133 nucleotide and amino acid sequence is low indicating differences in structures but transmembrane domain is conserved among all homologues suggesting a few similar functions. Such as putative binding of CD133 with β -actin & cadherin like other proteins and is predicted to be involved in intracellular protein trafficking.

Conclusion: Human prominin-1 nucleotide and protein sequence share similarity with other metazoan species and is predicted to be involved in intracellular protein trafficking.

Keywords: CD133, stem cells, alternative splicing

15.101 THE ETHICS OF PHARMACEUTICAL-PHYSICIAN RELATIONSHIP

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Objective: Pharmaceutical companies and physicians have a well established symbiotic but mutually exploitative relationship. Drug companies operate in a world of high risks but potentially high gains as well. Recouping large investments made in new drug research and development and maximizing corporate profits depend on persuading the medical community to prescribe as much of their specific medications as possible. That persuasion takes many forms including sponsoring conferences attendances, underwriting symposia, all expenses paid trips for self and spouse for drug launches abroad, free drug samples, and expensive gifts. Promotional activity has a single intent: to drive market share by influencing physicians' prescribing habits

Method: Literature review

Results: There is good evidence that despite doctors' denial, drug-marketing techniques do affect doctors' prescribing practices. In Pakistan this is complicated by the fact that there is little regulation, either of medical practice or drug prescribing and dispensing and companies and physicians are free to behave as they deem fit. Also, as most health care in Pakistan is out-of-pocket, patients end up paying for the promotional activities that physicians take part in.

Conclusion: The ubiquity and expense of these efforts raise difficult ethical questions for physicians and the public. Accepting gifts or other inducements from drug companies constitutes a conflict of interest and raises other ethical issues such as probity as well as institutional integrity. It also has ethical implications for doctors, as it affects the trust required in the doctor-patient relationship.

Keywords: Ethics, pharmaceuticals, physicians

15.102 THE PREVALENCE AND CUMULATIVE INCIDENCE OF INTRA-ABDOMINAL HYPERTENSION (IAH) IN THE MIXED ICU POPULATION: A PROSPECTIVE COHORT STUDY

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Objective: To determine the prevalence and cumulative incidence of intra-abdominal hypertension (IAH) in the mixed ICU population at AKUH.

Method: The study was conducted for four months i.e. April-July 2011 on adult patients admitted in ICU, on mechanical ventilation and with an indwelling urinary catheter. After seeking ethical review committee approval & informed consent from relatives of the patient, trans-vesicular pressure was measured twice daily after retrograde filling of urinary bladder with 50 ml normal saline. Primary endpoint was intra abdominal hypertension and it was defined as IAP >12mmHg on two consecutive readings. All the patients with IAH detected at any time during ICU stay were included in prevalence pool, while patients who developed IAH after normal initial pressure at the time of admission were included in incidence pool. All these patients were followed up till discharge from ICU or death. *Results:* Total 83 patients were enrolled in the study; 60% from medical ICU and 40% from surgical ICU. Mean age in years \pm SD was 47 \pm 17.5 with male preponderance (66%). IAH was detected in 15/83 (18%) at the time of admission, while three developed during ICU stay; hence the incidence and prevalence was 3.6% and 21.7%, respectively. During follow up, in-ICU mortality was higher in patients with IAH as compared to those without IAH rest (44.4% vs. 27.6%, p-value-0.14), while incidence of difficulty in weaning and failed extubation was also insignificant.

Conclusion: This prospective cohort study was undertaken to determine the burden of IAH at a mixed ICU in a tertiary care hospital in developing country. We found high prevalence of IAH, whereas the incidence was low. A higher mortality was noted in patients having raised intra-abdominal pressure, though this did not reach statistical significance.

Keywords: Intensive Care, Intra Abdominal Hypertension, Cohort study

15.103 INCREASING THE ADVERSE DRUG REACTION REPORTING

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Objective: Adverse drug reaction is expected to occur from almost every therapeutic agent, and its reporting is an essential tool for the patient safety. Several studies concluded that 6.7% of hospitalized patients have a serious ADR with a fatality rate of 0.32%. Trigger drugs are those drugs that signal a possible ADR and increase the detection of reportable events. Trigger drugs can intimidate the occurrence of ADRs. Aga Khan

University Hospital (AKUH) is a 545 bed, tertiary care teaching hospital of Pakistan. The average reported ADRs in the hospital were around 110 ADRs per year which is fairly an under-reported figure.

Method: Trigger drugs were identified and utilized as a clinical quality indicator. The National Coordinating Council for Medication Error Reporting and Prevention (NCC- MERP), Institute for Health Care Improvement (IHI) guidelines for trigger drugs were reviewed for implementation plan. The trigger drugs included were antihistamines, steroids, antidotes, diuretics and antiemetics. It was then approved by the Pharmacy & Therapeutics Committee of the hospital. Daily consumption report of trigger drugs was run through Computerized Physician Order Entry (CPOE). All the patients identified through daily drug search were followed individually; the concerned physician or nurse was contacted for every patient to gather the information about the possible occurrence of an ADR.

Results: ADR capturing via trigger drugs enhanced the overall ADR reporting by 45%. A 60% fraction of the total reported ADRs were via trigger drugs.

Conclusion: Trigger tools can help to identify and document the ADRs. Enhance reporting of ADRs results in better resolution of the therapy related issues and improved patient care.

Keywords: ADR reporting via trigger drugs, Enhancing the patient safety via increasing the ADR reporting

15.104

OPTIMIZING THE IV FLUIDS VIA IMPLEMENTING THE STANDARDIZED IV DILUTION CHARTS OF CRITICAL NICU DRUGS

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Objective: Aga Khan University Hospital (AKUH) is a Joint Commission International accredited teaching hospital. Neonatal Intensive Care Unit (NICU) of AKUH is equipped with the modern facilities where a neonatal clinical pharmacist is engaged with multidisciplinary clinical rounds. Fluid management becomes a challenging task in babies with multiple IV infusions. The kidneys of the newborn have a limited capacity; fluid overload can cause multiple complications. Around 25 – 30 % of NICU babies usually receive therapy of one or more infusions simultaneously. More commonly used infusion drugs include morphine, atracurium, dopamine, dobutamine, epinephrine, alprostadil etc. The data showed that there was often need to intervene for the dilution volume of the infusions in order to improve the patient safety.

Method: Based on literature support, charts of dilution and administration were prepared of the critical NICU drugs. These charts, after the approval of P & TC, were introduced into the practice. Special nursing sessions were arranged to facilitate the understanding of the charts and these charts were then pasted on the various patient care areas in the NICU, displaying the information about drug dosage, dilution, diluent, maximum/minimum concentrations, based on weight along with pre-calculated infusion rates. This was also incorporated into

pharmacy software as a part of medication management process. *Results:* After the implementation of these dilution charts, an overall 40% reduction was observed in the need to adjust the dilution volumes of the infusion drugs. These charts helped in standardizing the practices.

Conclusion: The dilution charts of NICU critical drugs facilitated in the better fluid management of the neonates. It also resulted in nursing time savings, reducing the tedious calculations, patient costs savings and ultimately enhancing the patient safety.

Keywords: NICU Drug Dilution, Standardization of NICU Medication Usage Practices

15.105

BEYOND QUALITY: WHY HEALTHCARE ORGANISATIONS NEED TO INVEST IN ETHICS

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Objective: Management (TQM), Continuous Quality Improvement (CQI) and International Standardization for Organisations (ISO) in healthcare systems have led to substantial improvements in patient care. Despite this, there remains a general dissatisfaction with the care provided and patients' complaints have continued to grow

Method: Review of relevant literature.

Results: Quality concepts are mostly derived from the service and manufacturing industries, that deal with inanimate products such as soaps or washing powder. On the other hand healthcare organisations deal with diseased and distressed human beings. The role of ethics in the care of the ill therefore becomes critical. While quality is about meeting certain standards, ethics is about internalizing values, in particular the core values of compassion and caring, fundamental to the medical and nursing professions. These core values are under threat in today's highly commercialized world where the bottom line has become revenues and profits. In this model patients become commodities to be bartered and exchanged, bought and sold. Healthcare organisations that move away from an ethics-driven model to a more business-driven one face greater patient dissatisfaction. *Conclusion:* Healthcare organisations that invest in ethics to complement quality initiatives in their processes lead to better patient care and greater patient satisfaction. Therefore, healthcare organisations must strive to become ethical organisations and not simply quality ones.

Keywords: Ethics, Quality, Healthcare organisations

15.106

RATIONALIZING THE USE OF LINEZOLID THROUGH ANTIBIOTIC STEWARDSHIP PROGRAM IN A TERTIARY CARE HOSPITAL IN PAKISTAN

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Objective: Rationalizing the use of antibiotics which are considered last resort against organisms resistant to first line

agents has remained the top priority of antibiotic stewardship programs in healthcare institutions. The problem is particularly important in developing countries where more discrepancies have been reported.

Method: Rational use of antibiotics is the dashboard clinical indicator of the hospital in which the Pharmacy Department conducts retrospective drug utilization reviews (DUR) of the selected restricted antibiotics. When Linezolid was added in the formulary, hospital's Antibiotic Subcommittee (ABSC) approved its utilization criteria. It was listed as restricted antibiotic as being the only drug available for treating Vancomycin Resistant Enterococcus (VRE). Staff was made aware regarding the criteria through hospital's published Antibiotic Guideline, flyers, computer alerts, educational sessions and through clinical pharmacists assigned in wards. DUR was conducted 6 months after the formulary addition. After reviewing data, ABSC further posed mandatory ID/Micro consults irrespective of the C/S reports of a patient. Pharmacy would dispense Linezolid only when a verbal endorsement is given by ID/Micro directly to pharmacy.

Results: DUR revealed good compliance i.e. 94% to Linezolid utilization criteria. Areas of improvement were noted along with degree of compliance was also determined in different clinical departments. Major areas of improvement included: Prescribing Linezolid without ID/Micro approval, concomitant Vancomycin usage, Interrupted therapy, monitoring for hematological side effects of Linezolid (Thrombocytopenia) and baseline + periodic CBC monitoring

Conclusion: Antibiotic restriction was successfully implemented by involving various stakeholders and modalities as listed in methodology section.

Keywords: DUR, Linezolid, rational

15.107

ATTITUDES AND PRACTICES OF THE TEACHERS IN PROMOTING SOCIAL AND EMOTIONAL DEVELOPMENT OF THE PRESCHOOLERS

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Objective: Teachers can play a significant role in developing social and emotional aspect of young children. children who develop warm, positive relationships with their kindergarten teachers are more excited about learning, more positive about coming to school, more self-confident, and achieve more in the classroom than do children who experience more troubled or conflicted relationships with their teachers. Therefore, the following study will identify various attitudes and practices of preschool teachers to promote social and emotional development of the preschool children between the age of 2-5yrs old. This study will contribute positive effects on teachers and organization to understand and formulate various techniques and strategies to promote social and emotional development in preschool children who are the future generation of our country. Moreover, this study will highlight the challenges and strengths of the current practices of teachers in the schools and facilitate the system improvement overall at the organizational level.

Method: A qualitative research methodology will be used. The

study design will be descriptive exploratory. • *Study setting* This study will be conducted in one of the private preschool school of Karachi. Duration of the study would be three months approximately i.e. from August to December. Purposive sampling of 6-8 teachers will be done for the interviews until saturation is achieved. Moreover, it is combined with the 6-8 classroom observations with the same teachers from whom interviews are taken. 6-8 female teachers of any age group, both gender, both trained and untrained with at least 2yrs of experience working in one of the private school of Karachi. Semi structured Interview guide will be formulated and used for the interview. Classroom observations will be done through a guided observation sheet. *Results:* Results are awaited. will be compiled by Dec 2011. *Conclusion:* This study will provide a better understanding of various practices, techniques and training programs which can facilitate parents and teacher to promote social and emotional development of children and prevent/ control social and emotional problem in children.

Keywords: Preschoolers, social and emotional development, teachers

15.108

EXTRAMURAL GRANTS SUBMISSION PROCESS AT AKU, REVIEW AND SIGN OFF: MEETING THE EXPECTATIONS OF GRANTORS

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Background: Grant awarding bodies receive and review grant applications submitted by faculty from universities with an expectation that the submissions have been reviewed and authorized by the institutions. Whilst this was and is a hope of the grantors, the process followed at AKU in the recent past fall short of faculty either directly submitting applications or the institutional signoff was undertaken in the absence of a proper review. To address this gap, AKU via the Research Office (RO) put in place the "Extramural Grant Submission Process" in June, 2009 with an aim to assist investigators in getting the required approval.

Objectives:

1. To establish a system that complies with the expectations of grant awarding bodies.
2. To ensure that all grant applications and contracts follow the institutional grant submission process.

Method: This process followed a mixed methods design to capture the perspectives of multiple stakeholders. It consisted of nine complementary phases:

- Phase 1 Literature Search - Examined the requirements of 5 granting agencies related to institutional signoff
- Phase 2 Analysis of processes followed by international research institutions
- Phase 3 Formulation of the process and the Checklists
- Phase 4 Consultations with Entity Heads/Deans /Directors
- Phase 5 Approvals by University Research Council, Academic Council and Board of Trustee of AKU

- Phase 6 Awareness sessions for administrative officials and departmental managers
- Phase 7 Pilot-testing of the process for 6 months
- Phase 8 Revisions based on the feedback from the users.
- Phase 9 Developed FAQs during the entire exercise, which also led to the establishment of a Helpdesk

Result: The process was developed and implemented successfully with a noticeable increase in submissions of applications to the RO for final review and sign off

Conclusion: This process is a major paradigm shift at AKU for researchers and entity heads. This puts AKU on leading position and provides a model for other institutions to follow. National agencies like Higher Education Commission and Pakistan Science Foundation are appreciative of the robustness and diligence of the process AKU has implemented.

Keywords: eSubmissions, eGrants, checklist, sign-off

15.109

HOMOLOGY ANALYSIS OF VITAMIN D BINDING PROTEIN (GC) USING BIOINFORMATICS TOOLS

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Objective: The vitamin D binding protein (Gc) gene is present on chromosome 4. It is 42.5 kb long and contains 13 exons. Its protein has 458 amino acids. There are three major forms due to variations at codons 432 and 436 in exon 11 which result in Gc1 fast (Gc1F), Gc1 slow (Gc1S) and Gc2. Gc1-1 has higher, Gc1-2 has intermediate and Gc2-2 has lower affinity for its substrates 25(OH) D and 1, 25 (OH)₂ D. In this analysis, we were interested to find functional diversity among different genera if it existed.

Method: Gc sequences of Homo sapien (Human) Bos taurus (Cow), Xenopus tropicalis (Frog) and primates were obtained from NCBI. Alignment were performed using Clustal W, T-coffee, MUSCLE and Ensembl.

Results: The nucleotide homology was 95-99% among three Human variants, 84% with cow and 59% with Frog. Protein homology was 100% at protein level among human variants but decreased to 80% with cow and 41% with frog. Phylogram showed that Xenopus tropicalis Gc had evolved separately. Ensembl analysis also indicated high similarity among human, gorilla, chimpanzee and orangutan

Conclusion: The nucleotide sequence alignment showed varied homology but such trend was not observed at protein level indicating the involvement of synonymous amino acids leading to conservation of function. Further, post translational modifications also play an important role in evolutionary conservation of this protein among primates. Gc was closely related between Human, cow and primates but was evolutionary distinct from frog Gc. Indicating possibility of functional versatility other than described so far

Keywords: VDBP, vitamin D, bioinformatics

15.110

POSTOPERATIVE ANALGESIA FOR MAJOR ABDOMINAL SURGERY – PRACTICE TRENDS AND PATIENT SATISFACTION

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Objective: To determine the practice trends in the management of postoperative pain for major abdominal surgeries at Aga Khan University Hospital and to determine the effectiveness of the analgesic strategies employed and patients' satisfaction with them.

Method: All patients undergoing major abdominal surgeries procedures were selected from the operation list. The patients' age, sex, weight, ASA status and duration of surgery was recorded. The patients were followed up in the recovery room and twice daily for three days. Principle mode of analgesia, co-analgesia and complication related to analgesia modality were noted and patients' satisfaction assessed. Proportions were calculated for all categorical variables and frequencies were generated for the side effects

Results: Data was collected on 100 patients. Epidural Analgesia was used in 61%, PCIA in 25% and opioid infusion in 14%. Patients receiving opioids had a higher incidence of nausea and vomiting. Sedation was not seen with opioid infusions or PCIA. 99/100 patients were happy with their analgesia modality

Conclusion: Patients receiving epidural at higher levels had better analgesia

Keywords: postoperative pain management, abdominal surgery, practice trends

15.111

SIGNIFICANCE OF PREOPERATIVE HEMOGLOBIN AS A SCREENING TEST IN CHILDREN UNDERWENT MAGNETIC RESONANCE IMAGING (MRI) IN GENERAL ANAESTHESIA.

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Objective: The use of magnetic resonance imaging is growing exponentially. In most of the pediatric patients undergoing magnetic resonance imaging, general anesthesia is required. Routine preoperative screening tests consume patient's time, discomfort and financial resources. In our institute we have a large number of children undergoing MRI scanning requiring general anaesthesia. They are assessed in preoperative clinic and as per our guidelines hemoglobin is done in each patient. In this survey we wanted to observe the impact of preoperative hemoglobin level done in planning and conduct of general anaesthesia.

Method: After approval from departmental research committee, all pediatric patients of 1 to 14 years of age who had MRI under general anaesthesia were included. Children less than 1 year of age and procedures done without GA or sedation were excluded. The medical records numbers of all these patients were obtained from MRI section of radiology department and their files were retrieved from medical record room.

Results: A total of 174 pediatric patients had MRI under general anaesthesia were included in this survey. Average hemoglobin of the patients was 11.28 ± 1.51 mg/dl. Low hemoglobin was observed in few patients, but it was not significant. There was no evidence that the decision to cancel or postpone the case by anaesthetist or any other perioperative management had occurred as a result of preoperative low Hgb.

Conclusion: On the basis of this study, we can recommend that children who do not have any clinical features of anemia can safely undergo MRI in general anaesthesia.

Keywords: Screen test, pre-operative test, MRI

15.113

PREVALENCE OF WORKPLACE VIOLENCE TOWARDS NURSES AT THE GOVERNMENT AND PRIVATE HEALTHCARE

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Objective: This study aims to identify the prevalence and characteristics of physical and psychological violence experienced by nurses working in all the In-patient units and the Emergency Departments of two private and two government healthcare settings in Karachi, Pakistan.

Method: This cross-sectional study included 458 nurses from selected healthcare settings in Karachi, Pakistan. A simple random sampling method was used for the study. The instrument used for collecting the data was jointly developed by International Labour Office (ILO), International Council of Nurses (ICN), World Health Organization (WHO), and Public Services International (PSI). The primary investigator and the research assistant interviewed the participants to complete the study tool.

Results: The present study found that workplace violence was prevalent among 82% of the nurses. The reported prevalence of physical violence was 16.4%, verbal abuse 77.1%, bullying/mobbing behavior 33.8% and 10% for sexual violence. Prevalence of workplace violence was found to be higher in the private healthcare settings, among young female nurses with less work experience. These nurses specifically belonged to the Medical Surgical units, Intensive Care Units, and Emergency and Psychiatric departments. Most of them were working in shift duties. The most common perpetrators of physical violence towards nurses were found to be patients and their relatives, and for psychological violence it was patients' relatives and healthcare staff.

Conclusion: This pioneer study is an attempt towards the implementation of one of the World Health Organization's (WHO) goals, that is, a violence free healthcare environment. The study also put forward some evidence based recommendations; based on the findings, for the government, the nursing services, nursing educators, and for future research.

Keywords: Workplace violence, prevalence, Nurses

15.114

NEEDLE STICK INJURY: CONTROL AND PREVENTION IN RADIOLOGY

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Objective: To review the data of health care worker receiving the needle stick injury in radiology department and to identify the personnel predominantly involved, the causes of injury and to suggest preventive measures for rectifiable causes.

Method: The study was conducted at Radiology department of Aga Khan University hospital from January 2000 to May 2010. We reviewed the data of around 10 years for personnel receiving NSI, the section of radiology where major injuries have been reported, whether the patients were infected with any known blood borne pathogens. The reason for injury and looked into any identifiable cause which can be corrected or is preventable.

Results: A total of 55 health workers reported NSI amongst whom 38 were male and 17 female. 13 were from angiography department, 15 from general radiography, 15 from fluoroscopy and IVP section, 10 from ultrasound and one each from nuclear medicine and MRI departments. Major cause was cannulation in 13 cases. 8 were due to stitching etc in angiography procedures. 5 were due to recapping syringes. 4 were during fluoroscopic procedures, 6 were during ultrasound guided procedures, 4 received injury during disposing / handling bin, 3 had injury while shifting or handling of patient from bed, 5 got pricked while cleaning / handling after the procedure, 2 got pricked handling linen, 2 got injured while retrieving needle from biopsy gun, in 3 cases cause could not be retrieved from data. In 35 cases fortunately the patients were not infected with any known or diagnosed infection however in 10 cases they were infected with either hepatitis B, C or HIV. In 10 the patient's status is not known.

Conclusion: The data shows that all personnel involved in patient care may be at risk and should take proper recommended care. Steps should be devised looking into the major area of injuries to prevent these further in radiology department.

Keywords: Needle stick injury, Radiology, prevention

15.115

LEVEL OF UNDESTANDING REGARDING COMPUTED TOMOGRAPHY SCAN AMONG NURSING STAFF AT A TERTIART CARE CENTER.

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Objective: CT scan is a modality of Radiology. CT scans are special x-ray tests that produce cross-sectional images of the body using x-rays and a computer's has become a commonly performed procedure. Scanners are found not only in hospital x-ray departments, but also in outpatient offices. CT scans have already allowed doctors to inspect the inside of the body without having to operate or perform unpleasant examinations. CT scanning has also proven invaluable in pinpointing tumors and planning treatment with radiotherapy. The examination does not hurt but some people find it uncomfortable to lie in the tunnel.

As there is little room inside the tunnel, people who suffer from severe claustrophobia sometimes have problems with CT scans. People get slightly nervous because of the whirring noise the machine makes while working

Method: This study was conducted in different wards of Aga Khan University Hospital (AKUH). This is Cross sectional study design. The data collection had been started from the date 20/9/20011 till sample size was complete. All nurses working in wards were included in the study. Rest of all staff was excluded. We had used the questionnaire as resource to collect the information from staff. Record information from staff as having adequate knowledge of CT scanning if they can differentiate CT scan from other scans (e.g. nuclear medicine, ultrasound, MRI), know that oral or intravenous contrast media may be used, are aware of aspects of patient preparation Record also whether staff knows that a CT scan involves x rays.
Results: According to our survey 97% nurses visited in Radiology department and 98% knew the location of CT scan, among them 91% knows the abbreviation of CT scan.26% nurses knew that it is X-ray scan 20% knew how the images are produced. 97% staff have knowledge that the pregnant ladies are restricted from the CT procedures, 71% staff knew that patients will have an injection during the scans when required.72% knows that patient has to drink contrast agent according to procedure.55% can give the clinical indication for CT procedures.66% said that CT is sometimes contraindicated. 46% staff knew that which conditions should be known before the CT scan25% knows which scans require fasting before the test.

Conclusion: Ward nurses have quite some knowledge regarding preparation and procedures of CT scan however shortcomings are outlined through similar studies which can be used for more focused teaching sessions.

Keywords: CT scans, X-ray, work noise

15.116 TO EVALUATE THE AWARENESS OF NURSES REGARDING MRI SCAN

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Objective: Magnetic resonance imaging, or MRI, is a way of obtaining very detailed images of organs and tissues throughout the body without the need for x-rays or "ionizing" radiation. Instead, MRI uses a powerful magnetic field, radio waves, rapidly changing magnetic fields, and a computer to create images that show whether or not there is an injury, disease process, or abnormal condition present. For this procedure, the patient is placed within the MR scanner—typically a large, tunnel or doughnut-shaped device that is open at both ends. MRI provides good contrast between the different soft tissues of the body, which makes it especially useful in imaging the brain, muscles, the heart, and cancers compared with other medical imaging techniques such as computed tomography (CT) or X-rays. Unlike CT scans or traditional X-rays, MRI uses no ionizing radiation

Method: This study was conducted in different wards of Aga Khan University Hospital (AKUH) from August 2011 to September 2011. This is a Cross sectional study. The data

collection was done by filling of simple questionnaires regarding knowledge of MRI especially regarding about those which are asked by the patients and the preparation of the procedure. All level nurses working in wards were included in the study. Rest of all staff was excluded.

Results: We included 100 ward nurses in our study. According to the study 99% nurses had visited MRI scan room and knew about the location of MRI scanner. Among all of them 88% staff knew what MRI stands for. 79% have knowledge that the MRI images produced by electromagnetism. 86% have knowledge that patient has to lie along enclosed tunnel .84% knew that some patients are restricted for MRI scanner. 63% staff knew that with metallic implant MR scans can't be done. 65% said that patients will have contrast injection sometimes during the scan.. 81% staff said that it can't be used for pregnant ladies
Conclusion: It is seen that although staff has overall adequate information about the MRI however knowledge of few technical aspect may further need to be explained so that they can play a better role in communicating with the patient.

Keywords: MRI, awareness

15.117 TREATMENT OF NON-VARICEAL GASTROINTESTINAL HEMORRHAGE BY TRANSCATHETER EMBOLIZATION

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Objective: To determine the yield of mesenteric angiography, technical success of hemostasis, clinical outcome and complications of transcatheter embolization for the treatment of non-variceal gastrointestinal hemorrhage.

Method: Retrospective review of 200 consecutive patients was done who underwent mesenteric arteriography for non-variceal gastrointestinal hemorrhage between March 1996 and February 2011. Selective embolization was attempted in 114 patients to obtain hemostasis with help of microcoils, polyvinyl alcohol particles and gelfoam. Main outcome measured were yield of mesenteric angiography, technical success rate (target vessel devascularization), clinical success rate (cessation of bleeding without further endoscopic, radiologic, or surgical intervention), and complications in terms of rebleeding and ischemia.
Results: Of 200 angiographic studies, 114 (57%) correctly revealed the bleeding site, rest were negative. 47 patients had upper gastrointestinal bleeding and 67 had lower gastrointestinal bleeding. In 112 patients (98%) technical success was achieved, with immediate cessation of Bleeding. Clinical success was achieved in 71 out of 81 patients (86%) with more than one month follow up. Thirteen patients rebled, and two had bowel ischemia. Six patients underwent surgery for complications.
Conclusion: Mesenteric angiography and embolization is a highly successful and relatively safe procedure for the diagnosis and treatment of GI hemorrhage. In our series it has diagnostic yield of 57% with 98% technical success rate. Only 1.7% patients had post embolization ischemia

Keywords: Gastrointestinal Hemorrhage, Embolization, , treatment

15.118
ENHANCING THE CREATIVE POTENTIALS OF
EDUCATIONAL LEADERS

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Objective: The research study was carried out in a private university with course participants of Master's in Education (M.Ed) having a major in educational leadership and management. The purpose of the study is to enhance the creative potentials of educational leaders. Creativity invites the mind to think in diverse directions to make something novel which can improve our living standards with the changing times. Striving for effectiveness, efficiency and quality in every aspect of our life draws our imagination towards the need of creativity in a leadership role as well because leaders lead the minds and act as change agents (Kaufman, 2005). According to Lagari (2010) the chairman higher education commission Pakistan, all leaders need to enhance creativity to facilitate 'out of the box' solutions. When you think there are no answers to a problem or an issue, then there are likely to be more possible answers for a creative leader.

Method: In order to enhance this emerging need of creativity for educational leaders the study was conducted with action learning as the methodology which will enrich the creativity of educational leaders (as education is the key to progress). The tools to collect the relevant data were semi-structured interviews, observations and focus group discussions. The process of data collection had three phases; in the first phase semi-structured interviews took place on the basis of which the participants were given some worksheets to enhance their creative potentials. The worksheets included activities for idea generation, lateral thinking, re-layering, etc. The second phase included focus group discussions (action learning phase) in which all three participants shared their professional life problems and explored alternative solutions. In the last phase semi-structured interviews were conducted, once again, to find out the application of participants' learning worksheets and the action learning phase.

Results: The findings and analyses revealed that in order to face the challenges of the 21st century, leaders need to equip themselves with creative thinking skills. It also emerged from the interviews that the educational system which participants have gone through has hindered their creativity.

Conclusion: educational leaders need to enhance their own creative potential so that they can inculcate this aspect in teachers and students.

Keywords: Creativity, creative potentials, educational leaders

15.119
DOMESTIC INJURIES CAUSING NON PERFORATING
EYE INJURIES

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Objective: Nonpenetrating ocular trauma is a very common entity in the emergency departments. Tragically most of the trauma cases take place at home. We present four cases that

presented to ER at AKUH with non penetrating eye injuries, discuss their management and the preventive measures that can help lessen the load on the emergency eye departments worldwide.

Method: Case series We present four cases in which the patients suffered ocular injuries in domestic settings and their healing was quite remarkably fast thus signifying the regenerative power of the corneal epithelium. However, the injuries could have been prevented by some simple safety measures.

Results: All of our casualties originated in the domestic setting. However, most of our patients showed remarkably quick healing with little or no visual impairment.

Conclusion: The proportion of ocular trauma cases coming from domestic settings is increasing e.g while cooking and frying in the kitchen, working in the garage or garden. Through our case series, we want to bring this fact to light . Hence, the need for awareness programmes on ocular hazards at home. We recommend Eye safety campaigns organised by government and non-governmental organisations

Keywords: Non penetrating injury, ocular , domestic

15.121
FACULTY AND STUDENT PERCEPTIONS REGARDING
TEACHING AND LEARNING OF CLINICAL SKILLS IN A
FIVE YEAR UNDERGRADUATE MEDICAL PROGRAM IN
PAKISTAN

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Objective: To explore the perceptions and views of medical students and faculty regarding clinical skills education at the Aga Khan University with respect to Importance of clinical skills Teaching and Learning (T&L) during pre-clinical and clinical years Barriers to clinical skills T&L. Opinions on how clinical skills T&L can be enhanced. Pedagogical aspects of clinical skills T&L

Method: Within qualitative studies, a case study methodology will be chosen to study the perceptions of students and faculty in depth, regarding clinical skills teaching and learning Qualitative questionnaires will be filled by the medical students of all five years of MBBS and interviews will be held for the faculty involved in clinical skills teaching. The data will be compiled, coded and themes will be identified by the primary investigators. The analysis will then be done on NVIVO software

Results: The results of the study will identify perceptions of the faculty and medical students regarding clinical skill teaching within the undergraduate medical curricula.

Conclusion: This study will serve as a guide for what may be possible barriers to effective teaching and learning of clinical skills and generate valuable suggestions for improvement as well.

Keywords: Clinicals skills, teaching and learning, medical school

15.122 ESTABLISHMENT OF HEPATITIS C VIRUS GENOTYPE 3A REPLICON SYSTEM

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Background: Hepatitis C Virus is a major public health concern affecting 170 million people across the globe. In Pakistan, the HCV prevalence in adults is 6%, with Genotype 3 (GT3) reported to be the most prevalent (75-90%), among which subtype 3a is being the most common. Chronic infection occurs in 50–80% of GT3 cases, eventually leading to cirrhosis and hepatocellular carcinoma. In the absence of a productive viral culture system, the underlying mechanism of hepatocellular injury, viral replication and therapeutic targets are only partly understood. This obstacle has been partially overcome by the development of replicon systems; which are the only available tools allowing the study of HCV replication and development of anti-HCV therapies. Even though efficient RNA replication systems have been developed for genotype 1a, 1b and 2a, a replicon system for subtype GT3a is much needed.

Objective: To develop HCV GT3a sub-genomic replicon system (spanning ~ 9.6Kb in size) from serum samples of HCV GT3a patients.

Methodology: Total RNA was extracted using the Trizol reagent from serum samples of 3 patients. cDNA synthesis was carried out using specific primers for conserved 5'UTR region followed by Nested PCR amplification. PCR products were visualized by ethidium bromide 2% agarose gel electrophoresis.
Results: The Nested PCR amplification resulted in 297bp fragment for 5'UTR.

Future Perspective: PCR amplifications for HCV non-structural (NS) genes (*NS3*, *NS4* and *NS5-3'UTR*) is underway which will be followed by cloning into expression vector. GT3a subgenomic replicon will be transfected into Human Hepatoma cell line (Huh-7). Neomycin-resistant clones will be isolated, expanded and analyzed for expression of viral RNA, and proteins (NS3, NS4a/b and NS5a/b).

15.123 AKU CANCER TISSUE BANK: QUALITY ASSESSMENT OF STORED BIOLOGY SAMPLES

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Introduction: Cancer Tissue and Data Bank is an AKU-based core facility initiated with the intention to provide biological material including tissues, DNA and RNA and data for cancer studies. The primary responsibility of this bank is to ensure confidentiality of patient's information and maintain a repository of tissue quality for analytical studies. This project has now completed 10 years and maintains a sizeable number of biological

material stored at -70°C. This study aims to assess the quality of stored tissues and their extracted DNA and RNA and determine their suitability for various prospective studies like mechanism and trends of disease, identification of cellular components that may lead to the early detection or better prognosis of the disease.
Objective: To evaluate the quality of stored samples for their usefulness in research aiming to study cellular and molecular changes of various cancers.

Methodology:

- Data of archival cancer tissues (n=841) was screened and categorized according to "The Canadian Tumour Repository Network (CTRNet) standards.
- Rating of 20 samples comprising of (a) DNA n=12 and (b) RNA n= 8 was done using scale of 1 to 10 (where, 1 being low quality sample and 10 being good quality) on the basis of:
 1. Purity using Nanodrop-1000.
 2. Integrity on 0.7% Agarose Gel electrophoresis and
 3. PCR amplifications of housekeeping genes i.e. β globin for DNA and β -actin or GAPDH for RNA

Results:

- Status of screened tissues were categorized as follows:
 - a. Golden ----- 56 (6.65%)
 - b. Silver ----- 560 (66.5%)
 - c. Bronze ----- 139 (16.5%)
 - d. Test ----- 86 (10.2%)
- Out of 20 samples, 12 were of category ≥ 9 and 7 were of 6 category. Only one sample was of low quality i.e. 4.

Conclusion:

Samples in CTB are of good quality and suitable to be used in cancer research.

15.124 IMPROVING QUALITY OF LIFE IN PATIENT WITH LYMPH EDEMA WITH HOME BASED INTERMITTENT PNEUMATIC COMPRESSION - A PILOT STUDY AT AKUH

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Background: Lymph Edema following treatment of breast cancer continues to remain a major issue affecting quality of life in survivors. Risks of lymph edema development are increased with advanced disease, extent of surgery especially with adjuvant radiotherapy with ablative breast procedures.

Objective: To study the effectiveness of intermittent pneumatic compression in lymph edema patient.

Methodology: This study was conducted at the Aga Khan University hospital from October 2010-Sept 2011. Data was retrieved from a manual record sheet which was maintained during patients visit in the clinic.

Result: The comparison of pre and post intervention with intermittent pneumatic compression for 28 patients in approx 15-20 visits revealed that 32% shown reduction in their midarm & mid forearm measurement by 1cm, 32% by 2cm, 10% by 3cm, 3% by 9 cm & finally 21 % showed no difference in their measurement.

Conclusion: These results suggest that mostly non interventional supportive measures have been used to avoid / reduce lymph edema. Mechanical pneumatic compression devices were found to be effective if used by patients on regular basis.

15.125

LEVEL OF SELF-PERCEIVED MENTAL STRESS AND THEIR ASSOCIATED DEMOGRAPHIC AND LIFESTYLE FACTORS IN PRIMARY CARE CLINICS IN TWO LARGE CITIES OF PAKISTAN

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Background: Psychological stress poses a serious threat to physical and mental health world-wide. This study was undertaken to find the prevalence of self-perceived mental stress level and to find the factors associated with mental stress amongst adult attendees in Primary Care Clinics in two large cities of Pakistan.
Methods: We conducted a cross-sectional study in four Primary Care Clinics in two large cities of Pakistan. In all, 641 adults were interviewed for this study. Level of stress was asked as perceived by the individual along with their demographic and lifestyle information. Chi-square test was used to identify the demographic and lifestyle factors associated with mental health.
Results: Overall, 73.3% of the study participants reported to have mental stress. Factors found to be associated with high of mental stress were increasing age (16-29 years = 65.8%; 30-59 = 74.6%; >59 = 90.4%; $p < 0.01$) and no/ less level of education (>12 years of schooling = 50.0%; 6-12 years of schooling = 65.4%; 0-5 years of schooling = 89.5%; $p < 0.001$). Physical inactivity was significantly associated with self-perceived level of stress as lifestyle factor among study participants (physically active = 62.1%; physically inactive = 76.2%; $p = 0.002$).
Conclusion: This study identified that a large proportion of adults reported self-perceived mental stress level. Primary Health Care Providers should screen all high risk patients for mental stress and other related conditions. Multi-faceted and comprehensive interventions are recommended to design and implement in this regards.

15.126

FIRST REPORT FROM SOUTHERN PAKISTAN ON ALLELIC VARIANTS OF PLASMODIUM VIVAX CIRCUMSPOROZOITE PROTEIN AND MEROZOITE SURFACE PROTEIN I

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Background: *Plasmodium vivax* is the prevalent malarial species accounting for 70% of malaria cases in Pakistan. However, basic data on *P.vivax* genotypes is lacking from Pakistan. Studies have shown that for *P.vivax*, polymorphic genes coding for circumsporozoite protein (pvcsp) and merozoite surface protein 1 (pvmsp1), can be used as reliable genetic markers for conducting molecular epidemiological studies. *Pvmsp1* gene is a mosaic

organization of several variable blocks and its genotyping is based on detection of allelic variants in its three polymorphic fragments (F1 to F3). *pvcsp* genotyping is based on detection of either of the two types of nonapeptide repeat units in its central domain; GDRA (A/D) GPQA, namely VK 210 type and ANGA (G/D) (N/D) QPG, namely VK 247 types.

Objectives: To determine the prevalent allelic variants of *pvcsp* and *pvmsp1*, circulating within Southern Pakistan.
Methods: A descriptive study was done during 2008-2009, on two-hundred and thirty blood samples collected from patients infected with *P.vivax*. *Pvcsp* and *pvmsp1* genes were amplified by nested PCR using primers specific for *csp* and *msp1*. For genotyping of *pvcsp*, *RFLP* was performed while different allelic forms of *Pvmsp1* were detected by analysis of fragment size.
Results: For *pvmsp1*, it was found that in F1 fragment, 12 allelic variants were observed (bp size variation 350-550), in F2 fragment 17 allelic variants were observed (950-1270 bp) and in F3 fragment 8 allelic variants were observed (250-390 bp). Thus, a total of 17 genotypes corresponding to *pvmsp1* gene were found circulating in Southern Pakistan. *Pvcsp* genotyping in Pakistani isolates showed that VK210 variants were predominant (79%, 182/230) while percent positivity of VK 247 was 13% (29/230). Respective bp size variation were 600-870bp for VK 210 and 650-820bp for VK 247.

Conclusion: We conclude that this is, to our knowledge, the first study from Southern Pakistan on genetic diversity of *Plasmodium vivax*. Data from this study indicates that both *pvcsp* and *pvmsp1* can be used as reliable markers for conducting *P.vivax* genotyping. Thus, this study will serve as a baseline data for future research on *P.vivax* genetic diversity from Pakistan.

Keywords: Plasmodium, malaria, allele

15.127

FREQUENCY AND TREND OF ISOLATION OF METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS: A LABORATORY BASED STUDY

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Background: Methicillin resistant *Staphylococcus aureus* (MRSA) is one of the major causes of health care associated infections. Increase in number of MRSA infected patient is a concern in healthcare settings as it requires expansive treatment.
Objective: To study the frequency and trends of isolation of MRSA from different clinical units.

Materials and Methods: This study was conducted at the Aga Khan University hospital from 2000-2009. Data of MRSA and MSSA was retrieved from a central computerized database and analyzed using SPSS version 17.0 software.

Result: Out of 8206 *Staphylococcus aureus* clinical isolates, 5363 (65.4%) were found to be MSSA while 2843 (34.6%) were found to be MRSA. 4267 (52%) of the isolates were from male and 3939 (48%) were from female. Isolation of MRSA strains showed a rising trend with age; lowest in infants and neonates (3.0%), while highest (29.4%) among population > 60 years of age. Frequency of isolation of MRSA was high in inpatients than outpatient. Isolation of MRSA was highest from patients in general wards (56.1%). Community health clinic centre was

found to have the lowest numbers (0.005%) followed by surgical day care (0.01%). The results also showed decreasing trend of isolation of MRSA from 2000 to 2009.

Conclusion: These results suggest the need of surveillance in individual units showing higher number of MRSA isolates. It also indicates need of reinforcement of infection control practices in units with higher isolation rates of MRSA.

Keywords: Staphylococcus, MSRA

15.128

TCRBCL: GERMINAL CENTRE VS. POST GERMINAL CENTRE PHENOTYPE BY IMMUNOHISTOSTAINING

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Objective: To study the immunohistochemical profile of T cell rich B Cell Lymphoma (TCRBCL), a rare subtype of diffuse large B cell lymphoma (DLBCL), and classify it into germinal and post-germinal centre on basis of its immunophenotyping.

Methods: Epidemiological data and immunohistochemical reports for all T cell rich B Cell Lymphomas diagnosed between 1st January 2007 and 30th June 2011 at the Aga Khan University, Department of Histopathology, were reviewed and analyzed with SPSS v18.0.

Results: A total of 16 specimens were diagnosed as TCRBCL during the period. TCRBCL was reported to be predominant in male population (68.8%) with the mean age of was 36.75. On immunophenotyping 7(43.8%) cases stained positive for LCA, 1(6.3%) case was equivocal while 2(12.5%) cases were not stained. It was originated that all the samples stained positive for Pan-B (CD 20). In addition Ki-1 (CD 30) was found negative in 12 (75%) cases while 1 (6.3%) of the case was found positive at focal areas categorizing all of them as TCRBCL according to 2001 World Health Organization classification of hematolymphoid neoplasms. Of the 16 cases, 8 (50%) were reported as positive for mum1, 15 (93.8%) were BCL6 positive while all 16 (100%) were CD 10 negative. This indicated the high proportion of post-germinal centre. There were no significant differences in the nodal and extra-nodal involvement patterns of clinical presentation among germinal and non-germinal groups.

Conclusion: In contrast to other published studies, non-germinal center was found more prevalent. Further studies needs to be carried out, which sequentially would enable clinicians to successfully struggle against this neoplasm with effective measures.

Keywords: T-cell rich B cell lymphoma, diffuse large B-cell lymphoma, germinal centre, immunophenotyping.

15.129

INTERIM FINDING, TETANUS IMMUNIZATION STATUS IN PAKISTANI CHILDREN UNDER 5 YEARS OF AGE

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Background: Tetanus is infection of the nervous system with the potentially deadly bacteria *Clostridium tetani* (*C. tetani*), an obligate anaerobic spore-forming bacterium. The clinical forms of tetanus that can be distinguished are generalized, local and neonatal disease. Infection begins when the spores enter the body through an injury or and release a poison called tetanospasmin. It is estimated that at least 30,000 new borns die annually from Neo-natal Tetanus in Pakistan. By improving immunization and intensifying efforts to reduce the burden of disease from neonatal tetanus the chance of achieving the MDGs can be increased. The serological measurement of the IgG antibodies is more important and therefore more suitable for obtaining evidence of tetanus immunity. Up-to-date vaccination is an absolute necessity for everyone. After basic immunization, periodic boosters should be given at intervals of 10 years. However, the booster is often neglected so that the immunization is often inadequate.

Objective: To investigate the tetanus immunization status of pakistani children under 5 years of age

Study Design: A total of N=3060 subjects were selected to assess tetanus IgG levels. These subjects were selected from a Subset of an ongoing study of National Nutritional Survey.

Results: The serum was collected from children having their vaccination record card or the verbal vaccination record of child provided by mother or care taker. Quantitative detection of Tetanus-antitoxoid –IgG-antibody levels in serum was detected by performing ELISA. The concentration of Tetanus-antitoxoid –IgG-antibody was determined as IU/ml.

Vaccination protection status was obtained as n=1233(40.29%) were having no vaccination protection, n=1190(38.8%) were found to have existent protection against tetanus, n=289(9.4%) were having sufficient protection against tetanus, n=331(10.8%) were found to have long term vaccination protection and only n=17(0.5%) were at extremely high protection status for tetanus.

Conclusion: The assessment of Tetanus Ig G among Pakistani children under 5 years of age, established the fact that 40.29% children still need to be vaccinated (Basic immunization) for tetanus. 38.8% required booster vaccination, 9.4% could be used as control for next 2 years at the sufficient protection status against tetanus. 10.8% defined to be used as control for next 5-10 years and only 0.5% could be defined to be use as control for coming 10 years.

Keywords: Tetanus, tetanospasmin, tetanus toxoid

15.130 KNOWLEDGE AND PERCEPTIONS OF ASTHMA AMONG ASTHMATIC ATTENDEES IN FAMILY PRACTICE CLINICS IN KARACHI, PAKISTAN

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Introduction: Appropriate knowledge about asthma may help to prevent and control the disease. This study was conducted to assess the knowledge of attendees of asthmatic patients about asthma and to identify the knowledge differences by sex and educational status in Karachi, Pakistan

Methods: A cross-sectional study was conducted involving 400 adult attendees of asthmatic patients, who visited Family Practice clinics affiliated with a teaching hospital of Karachi, Pakistan. Study participants were interviewed by using a pre-tested and structured questionnaire. Chi-square test and odds ratio along with 95% CIs were calculated to identify the differences between various groups.

Results: Generally, females were more knowledgeable compared to male attendees and their level of knowledge was significantly higher about: correct definition of asthma (OR=4.8), that asthma is not a communicable disease (OR=2.18), asthma can be triggered/aggravated by cigarette smoke (OR=2.15), by dust/pollen (OR=2.46) and that wheeze (OR=4.29), difficulty in breathing (OR=3.01) and chest tightness (OR=3.68) are the symptoms of asthma. Similarly, attendees who had schooling beyond 5 years were more knowledgeable compared to those who had schooling for less than 5 years about some questions: correct definition of asthma (OR=7.41), asthma can be triggered/aggravated by cigarette smoke (OR=2.16), by dust/pollen (OR=1.83), and that wheeze (OR=1.71), difficulty in breathing (OR=1.62) and chest tightness (OR=2.41) are the symptoms of asthma. While majority of responses were poorly recorded by both groups. While both males and females had poor knowledge about other responses including breast feeding. **Conclusion:** It was seen that there was an overall knowledge deficiency about asthma. Our study suggests that more attention should be given to providing health education and disease awareness particularly about risk factors and symptoms of asthma to the general public.

15.131 KNOWLEDGE, ATTITUDE AND PRACTICE OF VITAMIN SUPPLEMENTATION AMONG PATIENTS VISITING OUT-PATIENT PHYSICIANS IN A TEACHING HOSPITAL IN KARACHI

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Introduction: Vitamin supplementation use is common. However, little is known about the perceptions regarding its use in our country.

Objective: To determine the knowledge, attitude and practices regarding vitamin supplements use among Pakistani population. **Methodology:** A questionnaire based survey of patients visiting

out-patient physicians was carried out in a teaching hospital in Karachi, Pakistan from July to September 2008. Multiple responses were splitted into separate sub-variables. Frequencies of all variables including multiple response variables were generated.

Results: Of the 400 patients surveyed, 98% were aware of vitamin supplements. Most known vitamin was found to be Vitamin C (16.9%) with Vitamin K being the least well-known (0.4%). 51.8% of the respondents were unaware of the harmful effects of supplements. 84.8% of the study population had taken supplements. 79% of the participants thought that supplements are helpful. Majority of the population was not aware of the indications for use of vitamin supplements.

Conclusion: Awareness of correct knowledge, attitude and practices of vitamin supplements use seems to be deficient in our country.

Keywords: Vitamin supplements, supplements, supplements use

15.132 BASIDILOBOLUS INFECTION OF THE NOSE AND FACE PRESENTING AS WEGNERS GRANULOMATOSIS IN AN IMMUNOCOMPETENT PATIENT

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Background: Basidiobolus spp. are microscopic fungi commonly found on decaying organic matter. Lei-Kian Joe in 1956 described the first case of basidiobolus infection in a human and since then various cases of basidiobolus infection have been described in literature. The infection is characterized by necrotizing granulomatous inflammation with predominant eosinophils which may point a pathologist towards the relatively more common Wegner's granulomatosis. This in turn would lead to a cascade of management plans that further jeopardize the patients wellbeing.

Case: Here we present the case of a 25 year old female, with basidiobolus infection who was initially diagnosed as Wegner's granulomatosis. Computed tomography scan revealed an extensive soft tissue mass projecting over the right maxillary sinus, with invasion into the right orbit, causing proptosis and lateral displacement of the eyeball. She underwent endoscopic debridement and incision and drainage of infra orbital abscess. Culture of the excised tissue grew few colonies of basidiobolus species. She was further managed with Itraconazole and potassium iodide.

Conclusion: Basidiobolus mimics various inflammatory and infectious disease processes that produce granulomatous inflammation; in our case it was confused with Wegeners, because of its rather invasive sinofacial involvement with proptosis. Given the ubiquitous nature of the fungi and their variable clinical presentation, they should be suspected in chronic granulomatous inflammation even in immunocompetent hosts.

Keywords: Infection, basidiobolus

15.133

TOLUIDINE BLUE: INTRA-OPERATIVE LOW COST SCREENING FOR TUMOR INVOLVED MARGINS AFTER EXCISION OF ORAL CAVITY SQUAMOUS CELL CARCINOMAS IN THIRD WORLD COUNTRIES

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Background: Our study aimed to use toluidine blue intraoperatively to identify tumor involved margins after the removal of oral cavity squamous cell carcinoma and compare these findings with the findings of final histopathology.

Methods: Fifty six consecutive patients with biopsy proven squamous cell carcinoma of oral cavity regardless of grade and stage of tumor were included in the study. Intra-operatively toluidine blue was used on the resected tumor margins and staining patterns were assessed. Staining results were then compared with the final histopathology report.

Results: Eleven margins were positive with toluidine blue staining out of which 8 margins were false positives. Sensitivity and specificity was found to be 100% and 84.9% respectively with a positive predictive value of 27.2%, a negative predictive value of 100% and diagnostic accuracy of 85.71%.

Conclusion: In our opinion, toluidine blue stain could be a useful tool for screening tumor margins intra-operatively. It is easy to perform and interpret while being safe and cost effective at the same time.

Keywords: Toluidine, oral cavity, squamous cell

15.134

COMPARISON OF OUTCOMES OF ENTERAL FEEDING VIA NASOGASTRIC V/S GASTROSTOMY TUBES IN POST OPERATIVE PATIENTS WITH A PRINCIPLE DIAGNOSIS OF SQUAMOUS CELL CARCINOMA OF THE ORAL CAVITY.

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Background: Squamous cell carcinoma of the oral cavity has a profound impact on a patient's nutritional intake, 40-50% of head and neck cancer patients have a markedly impaired nutritional status at the time of their initial presentation. Studies show that patients who have better nutritional status have fewer complications and a better survival trend; therefore enteral nutritional support plays an important part in the management. Due to the lack of relevant data our surgeons help patients make informed decisions regarding their mode of nutritional support and perform Gastrostomy or NG tube placements for at the patient's preference; however the need for relevant data regarding the impact and psychosocial acceptance of both modalities in our population was felt leading to our study.

Methods: A retrospective review of patient charts with a principle diagnosis of oral cavity squamous cell carcinoma, receiving surgery +/- adjuvant radiotherapy was carried out. Patients were also questioned regarding their experience with the mode of

nutrition and its impact on their life during their regular follow up consultations. Post therapy change in weight, psycho social acceptance and quality of life were considered as measures of outcome.

Results: A mean weight loss of 5.43 ± 3.4 kg ($p=0.025$) was noticed in 15 patients on NG feeding. Whereas significantly less weight loss of 1.25 ± 5.12 kg ($p=0.025$) was noticed in the patients receiving nutrition via gastrostomy tubes; nine patients had a mean weight gain of 2.89 ± 1.95 kg and the rest had similar weight loss of 5.427 ± 3.4 kg.

Conclusion: The authors of the study recommend that gastrostomies should be considered for patients requiring long term post operative enteral nutritional support in head and neck cancers.

Keywords: Squamous cell, cancer

15.135

CRANIOPLASTY AFTER DECOMPRESSIVE CRANIECTOMY: AN INSTITUTIONAL AUDIT AND ANALYSIS OF FACTORS RELATED TO COMPLICATIONS

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Background: Although a relatively simple procedure; cranioplasties have been associated with high complication rates. Keeping this in perspective, we aimed to determine the factors associated with immediate and long term complications of cranioplasties at our institution.

Methods: A retrospective review of patient records was carried out for patients having undergone reconstructive cranioplasties at our institution during the last 10 years (2001-2010). All case notes, records and investigations were reviewed and the data was recorded in a predesigned questionnaire. Complications were recorded along with existing comorbid and measures taken for their prevention and management. Univariate and multivariate logistic regression analysis was performed to determine possible predictors of complications.

Results: Ninety six patients with a mean age of 33 ± 15 years were included in the study. Of the sample 76% ($n=73$) had no co-morbid. The leading primary pathology was blunt traumatic brain injuries in 46% ($n=44$), followed by cerebrovascular incidents in 24% ($n=23$), penetrating traumatic brain injuries in 12% ($n=11$) and tumors in 10% ($n=10$) of cases, with 41% ($n=39$) of patients requiring multiple craniotomies. In a mean follow up of 386 ± 615 days, complications were noted in 36.5% ($n=35$) of the patients. Minor complications accounting for 26% ($n=25$) and included breakthrough seizures (15.6%, $n=15$), sub galeal collections (3.1%, $n=3$) and superficial wound infections (3.1%, $n=3$); while major complications (10.4% $n=10$) included hydrocephalous (3.1%, $n=3$), transient neurological deficits (3.1%, $n=3$) and osteomyelitis (2.1%, $n=2$). Univariate and multivariate analysis revealed EVD placement and parietal flaps to be associated with complications.

Conclusion: We have found a higher risk of complications of cranioplasty in patients who had an EVD at the time of decompressive surgery. We however did not find any association

between risk of complications in any other studied variable. We also did not find any association between intraoperative placement of subgaleal drains and postoperative risk of subgaleal fluid collections. Overall our results are comparable with other reported series on cranioplasties.

15.136**TRANSFUSION TRANSMITTED MALARIA IN PAKISTAN: WHAT DO WE DO?**

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Background: Malaria, with an incidence of 243 million symptomatic infections leading to nearly 863,000 reported deaths as reported in 2008, is considered to be one of the most significant parasitic diseases affecting humans. A percentage of these infections are attributable to blood transfusions. Currently screening procedures in Pakistan vary with strategies focusing mainly on not to unnecessarily exclude potential donors. Most centers adopting a questionnaire based approach, following which the blood may then be screened using microscopic and immunological modalities. However the sensitivity, specificity and cost effectiveness of these tests for endemic areas leave loop holes resulting in a risk of 50 cases/million donor units.
Methods: The authors conducted a literature search on the PubMed and Google Scholar databases for transfusion transmitted malaria (TTM) and its screening. The literature search was subsequently narrowed down to articles published within the last 10 years, following which a set of the authors evaluated each individual article on its relevance. Keeping in view the data gathered the authors devised a strategy for the prevention of TTM in endemic countries.

Conclusion: Targeting subclinical infection or carrier states with low parasitemia is of utmost importance in screening blood transfusions. Given the limited resources available in malaria endemic countries we would like to introduce our step wise screening strategy for screening malarial parasites while limiting donor deferrals.

Keywords: Malaria, Pakistan

15.137**PROFESSIONALISM IN MEDICAL STUDENTS FROM KARACHI, PAKISTAN**

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Background: With recent emphasis of medical institutions inculcating professionalism and influencing certain character traits and behaviour attributes into medical students, it is of

interest to see the trends of professionalism in students and how changes emerge during their training.

Methods: The study was conducted on a cross sectional basis, freshmen, year 3 and year 5 students enrolled at our university were requested to fill out a questionnaire. The questionnaire was designed to assess the levels of professionalism at individual and environmental levels by incorporating previously described scales. A cumulative score for the individual's level of professionalism was also calculated based on a 20 point scale with a score of 10 considered adequate. The student's perceptions of the environment were also assessed while referring to three basic attributes: professionalism excellence; integrity and altruism.

Results: We recruited 204 participants. The mean score for level of individual professionalism was 7.72 ± 3.43 . Nearly 35.5% (n=72) had a score =10. When assessing the environment the mean scores for professional excellence, integrity and altruism were 5.70 ± 1.43 , 2.91 ± 1.74 and 3.52 ± 1.77 respectively.

Conclusion: Given the previously described decline in professionalism, currently employed teaching practices inculcating the values of professionalism in medical students are serving as a buffer to maintain the pre training levels of professionalism from declining.

Keywords: Professionalism, medical student

15.138**ESTABLISHMENT OF AN EPILEPSY SURGERY CENTER IN A DEVELOPING NATION: INITIAL EXPERIENCES, RESULTS AND REFLECTIONS.**

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Background: Developing countries, home to 80% of epileptics, have no setup to carry out epilepsy surgeries. Considering these needs and the availability of capable human resources, we decided to set up the first comprehensive epilepsy surgery program in the country.

Methods: Seventeen teleconferences focusing on discussing challenging cases in epilepsy, and brainstorming the setting up of an epilepsy surgery center at the Aga Khan University (AKU), Karachi, Pakistan were arranged with experts from the University of Alberta Hospital, Alberta, Canada and the University of West Virginia, USA over a two year period. Subsequently the experts visited the proposed center to overlook successful surgical procedures and provide hands on training to their collaborators. During this period several interactive and didactic teaching sessions, a three-day nationwide epilepsy fellowship and various public awareness events were organized.

Results: Sixteen patients underwent surgery, functional hemispherectomy (HS) was done in six, anterior temporal lobectomy (ATL) in six and neuronavigation guided SAH using keyhole technique in four patients. The four cases of SAH were

carried out after international collaboration. Minimal morbidity was observed in ATL and SAH groups.

All patients in SAH group (100%) had Grade 1 control, while only 5 patients (83%) in ATL group and 4 patients (66%) in HS group had Grade 1 control according to Engels classification, in average follow-ups of 12 months, 24 months and 48 months for SAH, ATL and HS respectively.

Conclusion: As we share our experience in setting up a successful epilepsy center in a developing nation; we hope to set a practical example for economically constrained countries that successful epilepsy surgery centers can be managed in resource limited settings.

Keywords: Epilepsy centers

15.139

RECURRENCE PATTERNS OF HEAD AND NECK CANCER AT A TERTIARY CARE CENTER IN KARACHI, PAKISTAN

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Objective: Keeping the state of health care services in Pakistan in mind we felt that specific follow up programs need to be designed to cater to the Pakistani population. In order to aid the development of further guidelines in this regard we conducted a retrospective audit of HNC patients to determine the trends of recurrent disease in our population.

Methods: A retrospective review of patient charts was carried out at the Aga Khan University Hospital. Patients, diagnosed with HNC at our institution between Jan 2006 and June 2008. About 272 patients identified were included in the study. The data was recorded in a predesigned questionnaire. All case notes, records and investigations were reviewed for possible associations. *Results:* Of the total of 288 cases, 210(72.91%) were primary oral cavity tumors followed by 55(19.09%) laryngeal, 12(4.16%) hypopharyngeal, 6(2.08%) oropharyngeal, and 5(1.73%) unknown primaries. Recurrence occurred in 111(38.54%) of the cases. The median time period for recurrence was 236 (range: 45 - 2803) days, in 73(65.8%) recurrence was identified by the patient.

Conclusion: Keeping these factors in mind, in our opinion high frequency follow up must be reserved for the first year during which patient education should encompass self-examination and the signs of recurrence. After this period of high frequency follow up the clinical schedule can be relaxed.

Keywords: Head/Neck cancer, tertiary care

15.140

KNOWLEDGE ATTITUDE AND PRACTICES OF WOMEN REGARDING BREAST CANCER AND BREAST CANCER SCREENING, IN THE URBAN POPULATION OF KARACHI, PAKISTAN.

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Objective: In light of the increasing incidence of breast cancer and its associated mortality, our study aimed to determine the knowledge, attitudes and practices of urban women regarding breast cancer and its available screening modalities.

Methods: The study was conducted as a cross-sectional, questionnaire-based, descriptive study in the urban population of Karachi. Female attendants (n=373) visiting a tertiary care center and four of its urban outreach centers in the month of November 2010 were administered a questionnaire. The questions were then scored with regards to their knowledge. Proportion & percentages were computed and analysis of variance used to confirm significance.

Results: Of the 373 participants with a mean age of 32.4 years, a large portion was married (78.6%) housewives (69%). The education level was considerably high; with 57.4% graduates. The mean score for knowledge of risk factors was 2.84 out of a total of 13; which was significantly associated with marital status and income. Age > 40 years, education level, income and employment status were also significantly associated with higher mean screening awareness scores. Nearly 48.8% had heard about Breast Self Examination(BSE) and 38% knew how to perform one; however only 25.9% regularly performed a BSE. Almost all (97%) of women wanted more media awareness campaigns regarding the issue.

Conclusion: Given the low levels of awareness regarding the risk factors and practice of screening, we conclude that there is a real need for comprehensive health education programs focusing on breast cancer awareness in Pakistan.

Keywords: KAP, breast cancer