

ABSTRACTS BOOK

Free Communications of The Third Qatar Internal Medicine Conference; 6-8 October 2016; Doha, Qatar**Guest Editors: Abdel-Naser El Zouki, Mohammed Zahid**

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Abstract

These are the abstracts of the free communications of the Third Qatar Internal Medicine Conference held on 6th-8th October 2016 in Doha, Qatar. The program of the conference had different types of sessions include plenary lectures, mini-symposia, clinical debates, 12 workshops in different aspects of Internal Medicine, and a pre-conference post-graduate course on "Best Practice in Internal Medicine", were conducted by invited panel of international, regional and local experts. The conference was endorsed by the American College of Physicians, Society of Hospital Medicine-USA, Mediterranean Association for Study of Liver Disease, and Mediterranean Task Force for Cancer Control. It was also supported by the Royal college of Physicians of London. In addition to the plenary sessions, free communications selected from submitted abstracts were presented as oral communications or posters. These reflected regional disease profiles, patterns of clinical practice and locally conducted clinical and basic research. The focus of this abstract book is to disseminate specifically free communications as this is the unique feature of the conference. We hope by doing this, we expand the message of the congress to those who could not make it to the live events.

Key words: Medicine, Quality, Education, Research, Professionalism, Evidence, Clinical, Regional, Qatar.

Introduction

Hamad Medical Corporation (HMC) is the leading center of excellence in clinical care, education and research in Qatar. Its various departments do organize regular continuous medical education events of various sizes and emphases. These are the abstracts of the Third Qatar Internal Medicine Conference held between 6th and 8th of October 2016 in Doha, Qatar.

The event was organized by the Department of General Internal Medicine at Hamad General Hospital. The conference was endorsed by the American College of Physicians (ACP), Society of Hospital Medicine-USA, Mediterranean Association for Study of Liver Disease (MASL), and Mediterranean Task Force for Cancer Control (MTCC). It was also supported by the Royal college of Physicians of London. 21 CPD hours were accredited by Qatar Council for Health Care Practitioners (QCHP). In addition to the plenary sessions, free communications selected from submitted abstracts were presented as oral communications or posters. These

reflected regional disease profiles, patterns of clinical practice and locally conducted clinical and basic research.

The focus of this abstract book is to disseminate specifically free communications as this is the unique feature of the congress. We hope by doing this, we expand the message of the congress to those who could not make it to the live events.

I. Oral Presentations (Theme: Clinical Studies)

OP1. Prevalence and correlates of diabetic peripheral neuropathy in Qatar.

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Aims: To determine the prevalence and correlates of diabetic peripheral neuropathy (DPN) in a newly developing country. **Methods:** This is a cross sectional study involving total of 549 subjects with type II diabetes who were recruited from Umgwailinah health care center in Qatar. A history of diabetes among patients was ascertained from the diagnosis and medical records of the health center. **Results:** The study population consisted of 549 diabetic participants with an average age of 55.2 years. In this study population, 55.9% were males and 62.2% were Qatari nationals. The average body mass index was 29.4 kg/m². DPN was diagnosed based on a combination of The Michigan Neuropathy Screening Instrument and neurothesiometer. Information on socio-demographic variables, including smoking status, diabetes history, was obtained from the medical records. Body mass index and clinical markers were assessed following standard procedures. The prevalence of DPN in this population was 21.3% (95% CI, 17.6%-24.8%). Diabetic patients with neuropathy were older than patients without neuropathy ($P < 0.001$) and had longer duration of diabetes ($P < 0.001$). Similarly patients with DPN had high fasting blood glucose level ($p = 0.003$), more likely to be Qatari nationals ($p = 0.042$), have hypertension ($P = 0.015$), and high creatinine ($p = 0.040$).

Conclusions: The high prevalence of DPN and its associated risk factors has important implications for health care policy makers and stakeholders since this country and the region as a whole is plagued by the diabetes epidemic.

OP2. Procalcitonin and other inflammatory markers in patients with severe sepsis and septic shock: A single center experience.

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Background: Several inflammatory biomarkers of infection including procalcitonin (PCT) and C-reactive protein (CRP) have been shown to be useful in diagnosis of infection in different clinical settings. The purpose of this study was to determine the diagnostic value of serum PCT, CRP, lactic acid and White Blood Cells (WBC) as markers of sepsis in critically ill patients in Qatar. **Materials and Methods:** The PCT levels and other inflammatory markers (CRP, lactic acid and WBC) were measured in 137 adult patients with a suspected diagnosis of sepsis and admitted to Internal Medicine inpatient service (i.e., Medical Wards and Medical Intensive Care Unit) at Hamad General Hospital, Hamad Medical Corporation-Qatar during the period from January 2011 to December 2013. The serum PCT was measured by chemoluminescence immunoassay and the results were compared with other inflammatory markers between the patients with and without proven sepsis. **Results:** A significantly higher PCT level was observed among patients with severe sepsis and septic shock compared to those without sepsis (19.34 ± 50 and 25.91 ± 61.3 vs. 4.72 ± 10 , respectively; ($p = 0.011$)). No significant differences were found in CRP and WBC between these groups. Non-survivors of both septic and non-septic groups had a mean PCT level of 22.48 ± 8.26 significantly higher than that measured in survivors of both groups ($p = 0.01$), a difference not evident in other inflammatory parameters.

Conclusions: PCT is a highly efficient inflammatory laboratory parameter for the diagnosis of severe sepsis and septic shock but WBC and CRP levels were of little value. PCT value assists in diagnosis of septic shock hence supporting appropriate disposition of patients. Levels of PCT also have prognostic implications with regards to mortality suggesting intensification of antibiotic therapy and supportive measures including appropriate family counseling.

OP3. Etiology of pleural effusion among adults in the State of Qatar, hospital based study

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Introduction: Pleural effusion is a common clinical problem encountered by physicians in Qatar. This study was conducted to determine the etiology of pleural effusion among patients visiting the main tertiary hospital in Qatar. **Methods:** The target population was adults more than 15 years of age, who were admitted to Hamad General Hospital during the months of June July and August. 100 patients were prospectively collected during this time and their files were reviewed with Cerner. work up for pleural effusion included radiologic investigation like chest x-ray and CT scans and diagnostic pleural tapping and subsequent thoracoscopy with biopsy if needed. Moreover bronchoscopy, VATs was also reviewed. Diagnosis was confirmed on the basis of microbiological, histological and clinical finding. **Results:** Total 92 patients were included in the study. mean age of patients was 40 years with 80 male and 11 female patients. 88 patients were Non-Qatari and only 8 patients were Qatari. In Qatari patients most common nature of pleural effusion was transudate, whereas the nature of pleural fluid among the non-Qatari patients were mostly exudative. The most common cause of pleural effusion was tuberculosis in 40(43%) patients followed by exudative Para pneumonic effusion in 35(38%) of patients. Malignant effusion was found in 8(8.6%) patients and 1 patient had hemothorax. Transudative effusion was found in 7(7.6%) patient. etiology was not identified in 3(3.2%) patients despite extensive workup.

Conclusions: The most common cause of pleural effusion was found to be tuberculosis. This point to the high prevalence of tuberculosis in Qatar followed by Para pneumonic effusion consistent with previous studies published from Qatar though this study was carried out in 2011. The total incidence of pleural effusion is increasing (92 patients in 3 months compared to 200 patients in 1-year) in only 3(3.2%) patient's etiology of pleural effusion could not be determined despite extensive investigations compared to 20 % in the similar study conducted in different places.

OP4. Epidemiological features and incidence rate of acute pancreatitis among adult inhabitants in Qatar.

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Objective: To investigate the epidemiological features and demographic characteristics of acute pancreatitis patients and to estimate the annual incidence rates of acute pancreatitis among adult (≥ 15 year) inhabitants in Qatar. **Patients and Methods:** This retrospective study was conducted using the data collected by reviewing patient's charts and Cerner system records of acute pancreatitis patients admitted to the medical and surgical wards of Hamad General Hospital and Alkhor Hospital, Qatar (January 2007-December 2012). Diagnosis of acute pancreatitis was based on abdominal pain suggestive of acute pancreatitis, serum lipase and/or amylase at least 3 times the upper limit of normal, and/or characteristic findings of acute pancreatitis on computed tomography. Data were analyzed by SPSS 20 software using descriptive statistics to calculate the incidence of acute pancreatitis according to age, sex and ethnicity background of the target populations.

Results: During the study period, 382 adult patients (34% Arabic and 66% non-Arabic) were reported with confirmed acute pancreatitis. There were 288 (75.4%) males and 94 (24.6%) females with a mean age \pm SD of 56.8 ± 18.7 years. Gallstone disease was the highest cause of acute pancreatitis (40.6%) followed by alcohol consumption (28.5%) and idiopathic (9.2%). The mean annual incidence rate of acute pancreatitis was 5 per 100,000 adult inhabitants in Qatar. The incidence rate of acute pancreatitis among men was higher than women. Overall, the incidence of acute pancreatitis was lowest (8.2 per 100,000 inhabitants) in the under 20 year-age old group and highest (241.5 per 100,000 inhabitants) in the ≥ 75 -year-old group. Mortality rate was low (0.3%) and in 112 patients (29.3%) there were complications of acute pancreatitis.

Conclusions: The incidence rate of acute pancreatitis is relatively low in Qatar. It tends to behave like many European and Scandinavian countries in etiology of acute pancreatitis, which can be explained by population structure. The disease presents in a mild form with low morbidity and mortality.

OP5. Efficacy of pneumococcal vaccine in immunized population 2 years before and after immunization on rate of hospitalization and ICU admission due To respiratory tract infection.

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Background: Pneumococcal vaccine is recommended by different institutions for high-risk population such as elderly > 65 year and young with chronic health problems. A single pneumococcal vaccine can prevent more than 90% of all pneumococcal infections. This study evaluates the effect of pneumococcal vaccine in number of medical and ICU admissions due to pneumonia post vaccination. **Methods:** Retrospective study of 161 patients, ≥ 18 years old who received the pneumococcal vaccine between (June 2012-June 2013). They were reviewed for respiratory tract infections (RTI) requiring admission to medical ward or ICU 2 years before and 2 years after vaccination. Patient's medical records reviewed for demographics, co-morbidities, microbiological laboratory data, X-rays, respiratory panel and empirical antibiotics treatment. The primary outcome measure was rate of hospitalization (medical and ICU). Secondary outcomes included the evaluation of the efficacy of pneumococcal vaccine in different comorbidities.

Results: 161 patients, age group (64-85), 52% was dominant in the study, over one third of them were Qataris. 70% were hypertensive, 57 % diabetic, 44% asthmatic and 27% had CKD. No significant association between rate of hospitalization and co-morbidities. Rate of hospitalization due to RTI was significantly reduced within 2 years after vaccination 71% to 39% ($P < 0.05$). ICU admissions tended to decrease after vaccination ($P > 0.05$). Within the diabetic patients, differences between pre and post vaccination in hospital 33% ($P < 0.05$), ICU admissions 2% ($P < 0.05$) and outpatient management 5.2% ($P > 0.05$). HTN patients showed difference in hospitalization 32% ($P < 0.05$), outpatient management 5.6 % but not in ICU admissions 1% ($P > 0.05$). COPD/Asthma there was a difference in Hospital, ICU admissions and outpatient management (75% to 36.1% $P < 0.05$, 11.1% to 8.3% and 45.1% to 44.4%).

Conclusions: Pneumococcal vaccine decreased hospitalization due to respiratory tract infections. The clinical significance of these findings must be determined

in larger, long-term clinical trials especially on ICU admission.

OP6. Antimicrobial susceptibility and molecular epidemiology of extended-spectrum beta-lactamase producing Enterobacteriaceae from intensive care.

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Introduction: The emergence of extended-spectrum beta-lactamase (ESBL)-producing isolates has important clinical and therapeutic implications. High prevalence of ESBL-producing Enterobacteriaceae has been reported in the literature for clinical samples from a variety of infection sites. The aim was undertaken to evaluate the prevalence of ESBL-producing Enterobacteriaceae, and to perform molecular characterization and antimicrobial susceptibility testing of clinical isolates from patients admitted to the intensive care units at Hamad Medical Corporation, Doha, Qatar, from November 2012 to October 2013. **Methods:** A total of 629 Enterobacteriaceae isolates were included in the study. Identification and susceptibility testing was performed using Phoenix (Becton Dickinson) and the ESBL producers were confirmed by double-disk potentiation as recommended by the Clinical and Laboratory Standards Institute. Molecular analysis of the ESBL producers was performed by polymerase chain reaction.

Results: In total, 109 isolates (17.3%) were confirmed as ESBL producers and all were sensitive to meropenem in routine susceptibility assays. Most of the ESBL producers (99.1%) were resistant to amoxicillin/clavulanic acid and ceftriaxone and 93.6% were resistant to cefepime. Among the ESBL-producing genes, blaCTX-M (66.1%) was the most prevalent, followed by blaSHV (53.2%) and blaTEM (40.4%).

Conclusions: These findings show the high prevalence of ESBL-producing Enterobacteriaceae within the intensive care units at Hamad Medical Corporation, Qatar, and emphasize the need for judicious use of antibiotics and the implementation of strict infection control measures.

OP7. Disseminated tuberculosis among adults admitted to hospital: A five years study at Hamad General Hospital, Qatar.

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Objectives: To describe the demographic, clinical features, diagnostic and procedure results, organ involvement and outcomes in patients with disseminated tuberculosis (TB).

Patients and methods: This retrospective observational study was conducted at Hamad general hospital in Qatar. It involved all patients 15 years of age or older who were admitted to Hamad general hospital with disseminated TB from January 1, 2006 to December 31, 2010.

Results: We enrolled 100 patients. 74 (74%) were males; mean age (\pm SD) was 31.3 ± 12.2 . The most common presenting symptom was fever (95%). Fifteen (15%) patients had other underlying medical conditions; the most common being diabetes mellitus 7 (7%), while two patients had human immunodeficiency virus (HIV) infection. The tuberculin skin test was positive in 42 (42%) patients. Sputum and gastric lavage examination were performed in 84 (84%) and 9 (9%) patients respectively while bronchoscopy was performed on 32 (32%) cases. Most patients 94 (94%) completed their treatment in Qatar whereas (3%) left the country before completion. The in-hospital mortality rate was 3% (3 patients). Systemic corticosteroids were prescribed for 36 (36%) cases and 15 patients had complications, the most being tuberculoma 9/23 (39.1%). Drug toxicity was noted in 17 (17%) patients, including hepatitis, optic neuritis and hyperurecemia. Only presence of underlying medical conditions was found to be an independent predictor of mortality.

Conclusions: Disseminated TB has a non-specific clinical picture, gives rise to high morbidity and mortality and therefore demands a high index of suspicion to promptly diagnosis and initiate timely treatment.

OP8. Recurrent Peritonitis in Peritoneal Dialysis in Qatar, an 8 Years epidemiologic study

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Background: Acute peritonitis (AP) is a common and devastating complication in end stage renal disease patients on peritoneal dialysis (PD). We are reporting an epidemiologic study of recurrent AP in PD patients in Qatar over 8 years follow up.

Methods: We retrospectively reviewed the medical records of all PD patients in Qatar from 2007 to 2014. The analysis was conducted to report the epidemiology, outcome and associated risk factors of recurrent AP.

Results: We had a total of 318 AP episodes in 180 patients between 2007 and 2014. 99(55%) patients had single AP while 81 (45%) had 2 episodes or more (recurrent AP). Patients on automated PD carried a higher risk of developing recurrent AP (OR=1.46, 95% CI: 1.01-1.71). First episode of AP caused by Gram positive (G+ve) cocci carried a significant risk of recurrent AP (OR= 4.3, 95 % CI: 2.2-8.2). Multivariate logistic regression model including both G+ve infection and automated PD as predictors of recurrent AP revealed the same predictive value of the G+ve cocci infection to have at least another AP episode (OR = 3.9, 95% CI: 2.0-7.7). Additionally, negative-culture AP carried a significant protective role from a repeated AP (OR= 0.35, 95% CI: 0.19 – 0.66). Most deaths occurred with the first episode of peritonitis (4 out of six). G-ve-associated AP carried the highest risk of death while no death was reported in association with G+ve AP.

Conclusions: Recurrent AP was prevalent (45%) among all AP cases. and its risk increases with G+ve cocci infections. However, G-ve infections were associated with increased mortality risk. Our results signify the importance of implementing more efficient care bundles to prevent recurrent AP.

OP9. Therapeutic game-based exercise during hemodialysis to Improve balance: A pilot randomized controlled trial.

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Background: Balance, mobility and falls are serious problems for older patients with end stage renal disease on hemodialysis (HD) especially with diabetic neuropathy. HD visit time provides an optimal opportunity for exercise intervention to improve balance and mobility and decrease falls. **Methods:** Eleven HD subjects (age: 65±6 years) with confirmed diabetic peripheral neuropathy were consented and recruited. They were randomized to intervention (IG: n=7) and control group (CG: n=4). Both groups underwent a 4 weeks' ankle and knee exercise program, twice per week for duration of 30 minutes during HD. The IG received exercise via the Exergame platform developed by our team, which integrates data from wearable sensors attached to subject's feet and legs into a human-computer interface designed for game-based motor adaptation training. The CG received same exercises without technology. The feasibility, acceptability, perception of benefit, and enhancement in balance in different conditions were examined. **Results:** One subject in IG was dropped out due to travelling. The rest finished all exercise sessions during HD sessions indicating its feasibility. The participants gave on average score of 3.7 out of 4 for entertainment and ease of usage of the Exergame platform. All participants in IG felt more energetic at home and perceived the balance program effective. Balance improved in IG compared to baseline almost in all tested balance conditions with highest effect size (improved by 57%, d=1.20) observed for hip stability during semi-tandem eyes closed test. The improvement in tested balance conditions in IG was on average 32% higher than CG with the highest effect size difference observed for semi-tandem eyes-closed (d=1.26).

Conclusions: Our pilot trial provides proof of concept for the feasibility and benefits of an interactive ankle and knee exercise program based on wearable technology. The program was perceived to be beneficial, easy and enjoyable to perform during hemodialysis sessions by target subjects.

OP10. 3D MRI Imaging of cerebrovascular disease in patients from the Middle East, South-East and Far-East Asia: Explaining the differences in clinical expression of the presenting symptoms

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Background: Cerebrovascular disease (CVD) manifests early in patients from low/middle income countries (L/MICs). Our earlier study from Qatar in an ethnically diverse population showed that the age of presentation was 20 years younger and risk factors were poorly managed. In this report, we review the MRI abnormalities in this cohort. **Methods:** We had two main objectives for this study. Firstly, we investigated whether the presence of any "pre-existing" MR imaging abnormalities provided useful information on the subsequent risk of the stroke-type. Secondly, determined the relationship of age to the presence various types of MRI abnormalities. The MRI studies were compared to 183 age matched controls with no vascular disease. **Results:** Between January 2014 and December 2015, 1727 patients were enrolled in the HGH stroke registry (Arabs 594 [34.4%], South Asians 924 [53.5%] and Far East 209 [12.1%]) and 1120 of these had 3T MRI studies. Patients from Far East had significantly higher rates of intracranial hemorrhage compared to Arab and South Asia [70/209 (33.5%), 77/594(13.0%), and 169/924(18.3%)] respectively (p<0.001). Silent infarctions were evident in 50.8% of patients and these were significantly more common in patients with ischemic stroke compared to ICH (62.0% versus 34.3%, p<0.001). Cerebral microbleeds (CBMs) were evident in 22.1% of patients and were significantly more common in patients with ICH compared to ischemic stroke (42.9% versus 23.1%, p<0.001). All pre-existing vascular abnormalities on MRI were evident at all ages (including in patients younger than 30 years old), but increased with age. The risk of development of CBMs [OR 1.50(1.2-2.20)], SI [1.52(1.18-1.9)], PVH [1.84 (1.4-2.4)] and DWMH [2.01(1.6-2.6)] increased significantly after age 55 years. **Conclusions:** MR imaging shows those vascular changes begin at a much younger age in patients with acute stroke in Arabs, East Indians and Far East patients in Qatar. While an increase in risk factors may explain some of the increased risk, genetic and

environmental factors may also play a role and require further study.

OP11. OMV/PTV/RTV +/- RBV in Genotype 4, Hard-To-treat cohorts: Real Life Data from Qatar

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Background/Aim: In PEARL-I, the 12 week course of oral interferon-free regimen of ombitasvir (OMV), paritaprevir (PTV), dosed with ritonavir (RTV), has delivered high virologic cure rates among non cirrhotic, Hepatitis C virus (HCV), Genotype (GT) 4. This encourages the treatment of "difficult to treat"-cohorts, however, trial inclusion/exclusion criteria may make outcomes less reproducible in routine clinical care. In addition, GT4, is genetically diverse, with 17 confirmed subtypes, and comprises approximately 13% of infections worldwide and more than 90% in our area. The aim is to study the safety and efficacy of OMV/PTV/RTV +/- RBV, in difficult-to-treat genotype 4 patients, including prior null-responders cirrhosis, renal impairment and post-transplant. **Methods:** An ongoing open-label, non-Interventional, retrospective, parallel-arm, single-center cohort is being conducted in HCV Genotype 4 patients, conducted in Hamad hospital, Qatar. Data of 54 Patients treated with 12 weeks OMV/PTV/RTV +/- RBV, were enrolled. The inclusion criteria included, Child A & B cirrhosis, renal impairment, liver transplant, thalassemia minor and null responders with poor baseline predictors. **Results:** 54 patients were included, 80% were cirrhotic, 9% were child B, 20% post liver transplant, 11% were renal impairment. About 10% of the patients were ribavirin-free, because of renal impairment, anemia or thalassemia. Patients were evaluated at Weeks 2, 4, 8, 12, and 24. Negative PCR test seen in, 80.3%, 95%, 100% and 95.5%, at weeks 2, 4, 12 and 24, respectively. SVR achieved in 100% of patients with renal impairment, liver transplant and child B. There was no significant difference between Naïve GT4 and experienced, where SVR was 96% Vs. 94% (NS), pre-treatment IL28B polymorphism did not affect response to treatment, where IL28B C/C was 100% compared to 92.9% in non C/C. Increased in transaminases >5 times the pre-treatment were seen in 5% of cases, severe drug interaction seen with tacrolimus, but not with cyclosporine and one patient

developed aggressive HCC in the follow up period. **Conclusions:** The low relapse rate, shorter duration, and favorable tolerability and safety profile make 12 weeks of OBV/PTV/r regimens recommended in genotype 4, including experienced patients with prior null-response, cirrhotic, renal impairment, and post-transplant. The risk of aggressive HCC in the course DAAs therapy needs further study.

OP12. Predicting mortality of patients with cirrhosis admitted to medical intensive care unit: An experience of a single tertiary center in Qatar

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Background and Aims: Prognosis for patients with cirrhosis admitted to medical intensive care unit (MICU) is poor. The objective of this study was to assess the predictors for in-hospital mortality and admission of cirrhotic patients to MICU in a single tertiary hospital in Qatar. **Patients and Methods:** All adult cirrhotic MICU patients whom hospitalized from 2007 through 2012 to Hamad General Hospital-Qatar. We compared them to cirrhotic patients who admitted to medical wards during same period of time. All data were recorded and analyzed with respect to demographic parameters, clinical features and laboratory as well as radiology characteristics on day one of admission to MICU. Cirrhosis diagnosis was established either with a liver biopsy or the combination of physical, laboratory and radiologic findings. Predictors of mortality were defined by logistic regression analysis. **Results:** The cohort comprised 109 cirrhotic MICU patients (86.2% males), and their mean age \pm SD=51.6 \pm 11.5. MICU-cirrhotic patients had longer hospital length of stay than medical wards-cirrhotics ($p=0.01$). Admission with severe hepatic encephalopathy, upper gastrointestinal bleeding and SOFA score were the independent predicting factors for MICU admission. Mortality was higher for the MICU-cirrhotic group than medical wards group [27 (24.8%) deaths vs. 12 (5.3%) deaths, respectively, $p=0.001$]. In multivariate logistic regression analyses, older age >60 years ($p=0.04$), APACH-II score ($p=0.001$) and MELD score ($p=0.02$) were independent predicting factors for overall mortality. **Conclusions:** Severe hepatic encephalopathy, upper gastrointestinal bleeding and SOFA score predict MICU admission of cirrhotic patients. Among MICU cirrhotic

patients, older age, APACH-II score and MELD score predict mortality.

OP13. Bacterial infection among patients with liver cirrhosis receiving acid suppressive therapy in Qatar
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Objective: The association between bacterial infections and acid suppressive medications (i.e. proton pump inhibitors - PPI) has been recently studied with debatable results. The aim of this study was to investigate the relationship between PPIs and the development of bacterial infections in cirrhotic patients. **Methods:** Consecutive cirrhotic patients above 18 years old hospitalized from 2007 through 2012 to Hamad General Hospital and Alkhour hospital - Qatar were enrolled. Specifically inquired for PPIs consumption in the last 90 days prior to hospitalization and classified as PPIs-users and non-users. Cirrhosis diagnosis was established either with a liver biopsy or the combination of physical, laboratory and ultrasonography findings. Cirrhotic patients with active gastrointestinal bleeding, using immunosuppressive therapy or using antibiotics in the previous two weeks prior to hospitalization were excluded. **Results:** A total of 333 patients were included in this study. 171 (51.4%) subjects used PPIs and 162 (48.6%) did not use PPIs. PPIs-users were significantly older in age ($p=0.001$). There was no statistical difference between the two groups in sex distribution and etiology of cirrhosis ($p>0.05$ for both parameters). PPIs-users had a significantly higher incidence of overall bacterial infection rate (25.7%) than non-PPIs-users (13.5%), $p=0.005$. On the multivariate analysis, older age >60 years, (OR = 1.246, 95% CI 1.021-08.486; $p = 0.02$), and PPIs-use (OR = 2.149, 95% CI 1.124-06.188; $p= 0.01$) were independent predicting factors for overall bacterial infection. Specific indication for PPI use was not documented in 43% of our patients.

Conclusions: The present study shows that PPIs use and older age above 60 years were independent predicting factors for the development of bacterial infection in hospitalized cirrhotic patients. Unless it is indicated, PPI therapy should be avoided in this group of patients, particularly in those older than 60 years of age.

OP14. Prevalence of metallo- β -lactamase NDM-1 and OXA-23 carbapenemase-produce *Acinetobacter baumannii* in Tripoli, Libya.

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Introduction: *Acinetobacter baumannii* is an opportunistic pathogen causing various nosocomial infections. The aim was to characterize the molecular support of carbapenem-resistant *A. baumannii* clinical isolates recovered from 4 Libyan hospitals. **Methods:** Bacterial isolates were identified and antibiotic susceptibility testing was performed using the automated system. Carbapenem resistance determinants were studied phenotypically using three different techniques: metallo- β -lactamase (MBL) E-test; chromogenic culture media and modified Hodge test (MHT). PCR amplification was used to determine the presence of metallo- β -lactamase blaNDM-1 and blaOXA23 genes among isolates. **Results:** A total of 119 isolates were characterized, overall the resistance prevalence was extremely high for aminoglycosides (79-96.6%), fluoroquinolones (94-96%), cepahosporens (96.6-100%) and carbapenemes (93.2-100%); all isolates were sensitive to colistin. In addition, 97.5% of isolates were identified as multidrug resistance (MDR). Varying degree of phenotypic detection of carbapenemes was determined; highest levels of carbapenemes were detected using chromogenic media (75.5%) compared with MBL E-test (45.5%) and MHT (71.4%). The carbapeneme resistance-encoding genes detected were blaNDM-1 (70.6%) and blaOXA23 (84%); the highest was demonstrated in Tripoli's Central Hospital (5/5; 100%) and Burn and Plastic Surgery Hospital (42/57; 73.7%). The co-occurrence of these genes was demonstrated in (72/119; 60.5%) showing dissemination of carbapenemes resistance MDR *A. baumannii* in hospitals. **Conclusions:** This study shows that NDM-1 and OXA-23 contribute to antibiotic resistance in Libyan hospitals and represent the high incidence of the association of these 2 carbapenemases in an autochthonous MDR *A. baumannii* isolated from patients in Libya, indicating that there is a longstanding infection control problem in these hospitals.

OP 15. *Streptococcus anginosus* Infections: Clinical and Bacteriologic Characteristics

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Introduction: The aim of this study was to assess clinical presentation and antimicrobial susceptibility of *Streptococcus* (S.) *anginosus* group infections in Hamad General Hospital, a tertiary care hospital in the state of Qatar, which is a multinational community. The S. *anginosus* group is a subgroup of viridans streptococci that consist of 3 different species: S. *anginosus*, S. *constellatus*, and S. *intermedius*. Although a part of the human bacteria flora, they have potential to cause suppurative infections. **Methods:** We studied a total of 101 adult patients (>18 years) with S. *anginosus* group infections from January 2006 until March 2012 by reviewing medical records and identification of organisms by VITEK 2 and MALDI-TOF. **Results:** The most common sites of infection were skin and soft tissue, intra-abdominal, and bacteremia (28.7%, 24.8%, and 22.7%, respectively). Abscess formation was seen in approximately 30% of patients. *Streptococcus constellatus* was the most common isolated species (40%) followed by S. *anginosus* (30%) and S. *intermedius* (7%). In 23% of specimens, the species was unidentified. The most common type of specimen for organism isolation was blood followed by pus and tissue (50%, 22%, and 8%, respectively). *Streptococcus constellatus* was more frequently associated with abdominal and skin and soft tissue infections than the other 2 species, whereas S. *anginosus* was isolated more frequently from blood. All isolates were susceptible to penicillin, ceftriaxone, and vancomycin. Susceptibility to erythromycin and clindamycin was also good, reaching 91% and 95%, respectively. Forty percent of patients needed surgical drainage along with antibiotic therapy. The outcome in our series was good with a cure rate of 87%. **Conclusions:** *Streptococcus anginosus* group can cause pyogenic infections in any organ system of the body. *Streptococcus anginosus* is mostly associated with bacteremia, whereas S. *constellatus* is associated, along with purulent collection, with SSTI and intraabdominal infections and needs surgical drainage. Identification of S. *anginosus* group to species level is helpful in clinical practice to determine the pathogenic potential of each species.

OP16. Ethnic variation in acute cerebrovascular disease: analysis from Qatar Stroke Registry

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Objective: We analyzed the Qatar stroke registry for ethnic variations in patients admitted with cerebrovascular disease at Hamad General Hospital (HGH), Qatar. **Methods:** Patients admitted with acute stroke from January 2014-December 2015, enrolled in the registry were included in the study. We evaluated the clinical presentation, risk factors, and outcome at discharge and 90 days post discharge in relation to the patient's ethnic background. **Results:** 1,727 patients were enrolled in the HGH stroke registry (Middle Eastern 594 [34.4%], South Asian 924 [53.5%] and Far Eastern 209 [12.1%]). There were significant differences in risk factors, clinical presentation and prognosis. Compared to Middle Eastern patients, Far Eastern patients were younger (62.8 ± 13.7 versus 48.9 ± 9.1 years; $p < 0.001$). Diabetes and hypertension were significantly more common in Middle Eastern patients [358(60.3%), 458(77.1%)] compared to South Asian patients [420(45.5%), 596(64.5%)] and Far Eastern patients [57(27.3%), 154(73.7%)] respectively ($p < 0.001$). Stroke was more severe in the Far Eastern group [Median (IQR) 5.0(2-11.5)] compared to the Middle Eastern group [Median (IQR) 4.0(1-8)] and South Asian [Median (IQR) 4.0(2-9)], $p = 0.011$. Mortality at 90 days was highest in patients from the Far East [15/209 (8.2%)] compared to the Middle East [35/594(6.5%)] and South Asia [33/924(4.0)], $p = 0.028$. Patients from the Far East had significantly higher rates of intracranial hemorrhage compared to the Middle East and South Asia [70/209 (33.5%), 77/594(13.0%), and 169/924(18.3%)] respectively ($p < 0.001$). **Conclusions:** The early age at presentation and the poor control of risk factors, especially in patients from South Asia and the Far East requires attention.

OP17. Diabetic ketoacidosis in pregnant women – causes and outcomes

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Introduction: The incidence of diabetic ketoacidosis in pregnancy (DKP) varies between 0.5% and 8.9%, and the

associated fetal mortality is (9 - 36 %). Our aim was to study the characteristics and outcomes of DKP patients in Qatar. **Methods:** We included DKP patients from June 2012 until May 2015. We conducted a retrospective chart review to identify the maternal and fetal characteristics and pregnancy outcomes. A secondary analysis was to compare the characteristics of two groups, Group A, with successful DKP management and Group B, where the baby was delivered or was an intrauterine fetal death during treatment. **Results:** We identified 20 admissions. The incidence of DKP was 0.5%. Thirteen (68%) cases had type-1 diabetes and 6 (32%) had type 2 diabetes. 5% of the patients had neuropathy, retinopathy, nephropathy and hypertension. The commonest 2 precipitating factors were excessive vomiting (55%) and insulin non-compliance (45%). 50% of the patients presented with plasma glucose level less than 200 mg/dL and 20% less than 140 mg/dL. The mean HbA1C at presentation was $8.2 \pm 2.0\%$. There was no associated maternal mortality, but there was one (5%) fetal death. We have data for only 15 deliveries at our facility. Mean birth weight was 3049.5 ± 855 grams. None of the neonates was macrosomic but 3 (20%) had low birth weight. Six babies (40%) were admitted to neonatal intensive care unit for observation. A comparison of 14 admissions who were successfully treated versus 6 with fetal compromise i.e. fetus was emergently delivered or died during DKP treatment, showed no significant difference between the 2 groups except for the mean gestational age 21.8 ± 11.0 and 33.7 ± 4.6 (week), respectively ($P = 0.005$). **Conclusions:** Patient education about sick day rules and compliance to insulin can prevent most of DKP cases. Doctors should be aware of euglycemic DKP. Our low fetal mortality reflects the improvement in medical care. No significant differences between the successfully treated group and the group of patients with fetal compromise.

OP18. Nutrition in hemodialysis (HD) patients from the DOPPS in the Gulf Cooperation Council (GCC) countries

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Introduction and Aims: Nutrition is an important factor to maintain good health for HD patients and is strongly related with morbidity and mortality. DOPPS is an

international prospective observational cohort study with a goal of determining practices associated with the best outcomes for HD patients. Here, we present the first nutrition data and relationship with outcomes from DOPPS in the GCC countries [Bahrain, Kuwait, Oman, Qatar, Saudi Arabia (KSA), and the United Arab Emirates (UAE)]. **Methods:** Data are from the DOPPS 5 (2012-2015) cross-section of 927 HD patients on dialysis >90 days from 40 randomly selected facilities in the GCC. Results are weighted for sampling fraction in each unit. **Results:** HD patient mean age ranged from 51 years in Bahrain, Oman, and KSA to nearly 62 yrs old in Qatar. Large country differences also were seen in the % of HD patients having diabetes or CAD, mean serum albumin, BMI, and creatinine levels. Moreover, patients who were very much to extremely bothered by lack of appetite varied from 11% in Kuwait and KSA to 32% in Bahrain. Diabetic and older patients (≥ 60 years old) displayed lower mean serum creatinine and albumin levels, lower nPCR levels and BMI, and were more likely to be prescribed an oral nutritional supplement. Low albumin (< 3.2 g/dl) was strongly associated with a high risk of mortality ($HR=2.47$, $p<0.0001$), and varied across countries from 8% in Qatar to 36% in Kuwait. **Conclusions:** We are presenting the first data on nutrition status in hemodialysis patients in the GCC countries done through the DOPPS study. Large differences are seen across GCC countries in patient age, diabetes, coronary artery disease, and nutritional measures. Similar to prior DOPPS findings in other countries, strong relationships are seen in the GCC between nutritional markers and mortality. These findings are important for informing HD practices regarding nutrition management in the GCC and opportunities for improvement.

II. Oral Presentation Abstracts (Theme: Quality Improvement and Patient's Safety)

OP19. "A sigh of relief in hospital capacity grief" Acute Medical Assessment Follow-Up Area – Safety net for early-expedited discharge, Hamad General Hospital, Doha, Qatar.

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Introduction: An inexorable rise in emergency attendances and admissions distanced by reduction in

numbers of in-patient beds in most acute hospitals has led to overcrowding in emergency departments with resultant longer length of stay and greater financial constraints. Establishment of acute medical units (AMUs) within hospitals is one of the solutions, which is growing in popularity. One of the success factors in AMU is early access to clinic appointments and post-discharge support services. Patients who had close follow-up after discharge had a lower rate of readmission and visits to emergency department. In order to improve patient flow, an AMU is established at Hamad General Hospital in July' 2015. AMU is designed to provide patient-centered multidisciplinary team care, timely assessment by senior clinician and focused investigations and treatment. In addition, early supported discharge with close follow-up in AMAU follow up area is one of the hallmarks of this unit. **Methods:** Aim of this study was to evaluate the efficacy of AMU clinic in accelerating the patient flux in the hospital and countering the plight caused by limited bed availability. Data regarding the dynamics of patient flow in AMU and its clinic was collected from July' 2015 to June' 2016. **Results:** Total number of admissions in AMAU during the duration of study (12 months) was 3108. Out of which 2556 patients were discharged home. 792 referrals were made to AMAU clinic. All patients got an appointment within a week of their discharge date. 80% of the patients showed up on the day of appointment. 7 day and 30 day readmission rates from AMAU were 1% and 3% respectively. **Conclusions:** Ambulatory clinic is essential component of AMU. AMU clinic has proven beneficial in reducing the length of stay, expediting the discharge process and decreasing the number of readmissions. Both patients and members of MDT have received this service very well.

OP20. Pathway of emergency management of hyperkalemia in adults

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Introduction: This pathway has been developed to improve the management of acute hyperkalemia and reduce the risk of complications associated with hyperkalemia and its treatment. **Methods:** We looked into management of hyperkalemia across Hamad General Hospital. **Results:** We reviewed case notes of 15 random patients who had K level higher than 6.5 mmol/L. There was considerable variation in treatment of Hyperkalemia by the doctors. There was lack of documentation of ECG

finding in 7 patients. One important finding was that none of the patients had their serum glucose monitoring documented following insulin/dextrose infusion. We designed an easy to follow pathway for Emergency Management of Hyperkalemia. The approach is divided into five sub-headings: 'Asses' is to emphasize ABCDE assessment and IV access. 2) 'Investigate' is checking venous K and Performing 12 lead ECG. 3) 'Treat' approach depends upon level of Hyperkalemia, i.e. Mild, Moderate and Severe. It gives standard guidance for each level including additional management if ECG changes are present. It highlights importance of stopping Nephrotoxic drugs regardless of level of hyperkalemia. 4) 'Monitor' emphasizes not only regular K check but also half hourly Glucose monitoring. 5) 'Escalate' to ICU if K is persistently more than 7.0 mmol/L. The pathway also gives information of 'causes of pseudohyperkalemia', 'list of nephrotoxic drugs', and 'ECG changes of hyperkalemia'. We will perform the audit after implementation of the pathway to see the improvement in management of hyperkalemia and whether it has reduced morbidity and hospital stay. **Conclusions:** The clinical presentation of hyperkalemia is highly variable with some patients presenting with an acute illness whilst others may be asymptomatic. The presence of arrhythmias, muscular weakness or paresthesia in a patient at risk should raise the clinical suspicion of hyperkalemia. The clinical course is unpredictable and sudden death can occur in the absence of premonitory ECG changes. The threshold for emergency treatment varies, but we recommend that emergency treatment should be given if the serum K⁺ is ≥ 6.5 mmol/L with or without ECG changes. It is also widely accepted that emergency treatment should be initiated for hyperkalemia if suspected on clinical grounds or ECG features.

OP21. Audit on polypharmacy and drug interactions in patients with advanced liver disease

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Background/aims: Auditing of poly-pharmacy is particularly essential in patients with liver cirrhosis because of the crucial role of liver in drug metabolism. Moreover, cirrhotic patients may be at risk for potential drug-drug interactions and/or adverse drug reactions due to the severity of their disease and comorbidities associated with polypharmacy. The aim of this study was to audit the drug prescribed in this group of patients and

analyzed the quantity and severity of potential drug-drug interaction. **Methods:** The last prescription (as seen in the eMR viewer) of consecutive cirrhotic adult patients whom hospitalized from 2007 through 2012 to Hamad General Hospital, Qatar was audited. The drugs were then analysed for interactions using the Lexicomp-online e-formulary. This tool can analyse multiple drugs for cross interactions at the same time. The drug interactions are classified as follows: class A: no known interaction, class B: no action needed, Class C: monitor therapy, class D: consider therapy modification, and Class X: the drug should be avoided. Poly-pharmacy was defined as the simultaneous use of multiple drugs (≥ 5 drugs) by a single patient, for one or more conditions. **Results:** 333 patients with cirrhosis were audited; of who complete of the relevant data were available in 181 patients. There were 134 (74%) males and 47 (26%) females with mean age \pm SD 59.7 \pm 10.1. 168 (92.8%) patients reported the use of at least one medicine and the total number of medications used was 808 drugs. The observed average of utilization was 7.8% \pm 3.1 drugs (range = 1-17) and 102 (56.3%) patients used poly-pharmacy. 198 (24.5%) consumed drugs were related to cirrhosis and its complications. By analyzing the drugs for cross drug-drug interaction, six (3.3%), 30 (16.6%) and 65 (35.9%) patients had Class-X, Class D, and Class C, respectively. Utilization of poly-pharmacy was statistical significant in patients with class X (83.3%, $p=0.03$), class D (16.6%, 0.01), and class C (35.9%, $p=0.02$). **Conclusions:** The findings highlight the importance of auditing for poly-pharmacy to recognize and prevent potential drug-related problems in patients with cirrhosis. Implementation of strategies to optimize medication use in patients with advanced liver disease is considered necessary.

OP22. An Audit of Readmissions (within 28 days) to the Acute Medical Assessment Unit.

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Background: Readmission rates after hospital discharge are a Healthcare quality indicator. Published emergency readmission rate (age >16 years) in UK is 11.5% in 2011/2012, an increase of 27% from 2002/2003 figure of 9.1%¹. Other international studies have shown 30-day readmission rates between 14-22%. Very limited data is available on the readmission rate and reasons for readmission for patients discharged from medical services in the Middle East region. **Aims:** Firstly, to determine the

rate of unscheduled re-admissions of medical patients within 28 days of discharge from an Acute Medical Assessment Unit (AMAU) in Qatar. Secondly, to examine the various factors that influence readmission and identify causes of potentially preventable readmissions. **Methods:** From the hospital electronic health record all patients admitted to the AMAU between 6/05/2016 and 31/07/2016 were identified and patients with at least one unscheduled readmission within 28 days of discharge were audited retrospectively by a senior physician reviewer. **Results:** 592 patients were admitted during audited period. 51 patients had a readmission within 28 days of discharge and all 51 cases were audited. The readmission rate was 11.60 %. 49% of cases were readmitted within 7days, 59% percent readmitted with the same condition. Mean age of readmitted patients was 48 years (range 15- 85 years). 88% had >3 comorbidities and 12% of patients had >2 comorbidities. Diagnoses included gastrointestinal 22%, renal 18%, CNS 14% and Respiratory disorders 12%. Median length of stay of the index admission was 7 days (range 1 to 23 days). **Conclusions:** Preliminary results suggest that 28 day readmission rates to medical services in Qatar may be similar to or less than those of other regions. While many readmissions may not be preventable; targeting patients at high risk may decrease unnecessary re-hospitalization. For example identifying patients who have multiple comorbidities for appropriate post discharge follow-up might help decrease preventable readmissions. Factors related to preventable readmissions need to be further studied and interventions to address them need to be developed to improve patient care.

OP23. Readmissions Audit in Acute Geriatrics at Hamad General Hospital.

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Introduction: "Emergency readmission" is defined as any emergency admission into hospital within 28 days or less following discharge from a previous stay in hospital. Unforeseen re-admissions may be a consequence of the natural course of the patient's disease or may result from sub-optimal care during the first admission. Emergency readmission to hospital is frequently used as proxy measure of avoidable adverse outcomes after initial or 'index' admission to hospital. The use of this indicator is

usually justified because a high proportion of emergency readmissions should be preventable if the preceding care is adequate. **Methods:** It is a retrospective audit. 114 Patients were admitted under Acute Geriatrics between Jan 2016 & June 2016. 19 patients were readmitted during this period. Data was collected and analysed on these 19 patients. Data was stored at a secure office in the Geriatric Department. **Results:** Most patients were older with an average age of 83 years and they were predominantly men. Most of the readmission's presentations were similar to the index admissions. More than half of the patients got readmitted within a fortnight of discharge from index admission. Average length of stay was longer by 1.5 days in readmitted patients. Over 40% of the patients had a prolonged stay between one to two months due to multiple reasons including complex illnesses with multi-morbidities and social reasons. Respiratory tract infections and urinary tract infections were the predominant causes for both index and readmission patients. 3/4th of patients readmitted were discharged home and only minority required long-term units (10%). Mortality was noted in about 16%(n=3) and was predominantly sequelae of severe sepsis. **Conclusions:** Most presentations were similar to the previous admissions and they seem to be unavoidable. Patients who got readmitted were much older with multi-morbidities. Readmissions LOS were noted to be longer, most likely secondary to multifactorial reasons including complex presentations with multi-morbidities and social reasons. Further studies are needed to look at the measures to prevent aspiration as this seem to be the most common cause for admissions both in the index and readmission groups.

III. Poster Presentation Abstracts (Theme: Clinical Studies)

PP1. Diabetes and acute cerebrovascular disease: A tertiary care stroke registry experience from Qatar
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Objective: We report our experience in patients admitted with acute stroke and TIA, and the incidence of Diabetes mellitus (DM) in such patients from the Qatar Stroke Registry. **Design:** Patients presenting with acute ischemic or hemorrhagic stroke and TIAs to Hamad General Hospital in Qatar between January 2014-August 2015

where enrolled in the stroke registry. Data on ethnicity, clinical presentation, risk factor profile, and complications, outcome at discharge and 90 days and recurrent stroke were related to diabetes status. **Results:** 1,679 patients were enrolled. The incidence of diabetes was highest in Qatari subjects (68.6%), and non-Qatari Arabs (52.3%), intermediate in patients from South East Asia (45.7%), North Africa (41.3%), Far East Asia (29.6%), and lowest in Caucasians (19%), $P = 0.001$. Although patients with diabetes were significantly older, had higher rates of hypertension, previous strokes and coronary artery disease, they had milder strokes (NIHSS scores 5.7 ± 5.8 versus 6.8 ± 6.7 ; $P = 0.01$) and subcortical strokes were more common. Discharge prognosis (mRS 3-6) (DM: 36.5% vs. NDM: 37.6%; $P = 0.654$) and outcome at 90 days (DM: 23.2% vs. NDM: 24.4%; $P = 0.571$) were no different between the two groups. The risk of early stroke recurrence was significantly higher in patients with DM vs. non-DM [28/810(3.5%) vs. 6/869(0.7%); $P < 0.001$]. **Conclusions:** There is a high incidence of diabetes in stroke patients in Qatar. However, DM associated stroke is milder, likely a result of higher numbers of sub-cortical events. Prognosis at discharge and 90 days was comparable between patients with and without DM, but the risk of early recurrence of stroke was significantly higher.

PP2. Methoxy polyethylene glycol-epoetin beta versus darbepoetin alfa for anemia in non dialysis-dependent CKD: a systematic review

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Background: Anemia management in non-dialysis-dependent chronic kidney disease (CKD) patients is associated with cardiovascular and cost benefits, slows decline in renal function, and prevents mortality. Different reviews have focused on evaluating the safety and efficacy of methoxy polyethylene glycol-epoetin beta (MPG-EPO), a continuous erythropoietin receptor activator, in CKD patients regardless of dialysis dependency and others have studied this novel agent exclusively in CKD patients receiving dialysis. This review aimed to evaluate the efficacy and tolerability of MPG-EPO compared with other erythropoiesis stimulating agents (in particular darbepoetin alfa) for the treatment of anemia in non-dialysis-dependent CKD patients. **Methods:** A systematic review of original studies published mainly in MEDLINE, Cochrane Database, Science Direct, ProQuest, clinical trials

registries, and Google Scholar was carried out to identify randomized controlled trials (RCTs) comparing MPG-EPO with other erythropoiesis stimulating agents or placebo among patients with anemia of CKD who were not yet receiving dialysis. Two reviewers using standardized data abstraction tool independently extracted data. **Results:** Four trials involving 1,155 patients were included in the review. The changes in hemoglobin level from the baseline reported by the reviewed studies demonstrate that MPG-EPO was clinically non-inferior to darbepoetin alfa. In addition, the studies documented that MPG-EPO-treated patients experienced a lower rate of hemoglobin level above the target range of 12-13 g/dL than darbepoetin-treated patients. The proportion of patients requiring RBC transfusion was higher among patients who received darbepoetin alfa than those who received MPG-EPO. However, the time to hemoglobin response was longer with MPG-EPO than with darbepoetin. Finally, the incidences of serious adverse events were similar between the two therapeutic agents. **Conclusions:** There are currently only few well-designed head-to-head RCTs investigating the efficacy and safety of MPG-EPO compared with other ESAs in non-dialysis-dependent patients. MPG-EPO therapy compared with darbepoetin alfa has demonstrated favorable effects of increasing and maintaining hemoglobin concentrations to recommended target levels. This mini-review is not conclusive due to limited number of studies. Therefore, the beneficial effects and tolerability of MPG-EPO among non-dialysis-dependent CKD patients should be further investigated, given the economic and clinical benefits of managing anemia in this population.

PP3. Cheap, Simple and Effective Tool: Very Low Rate of Dialysis Catheter Related Bacteremia in Al-Wakra Hospital Dialysis Unit, Single Centre Experience

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Introduction: Dialysis catheter related sepsis is an important cause of morbidity and mortality among hemodialysis patients. Infection prevention in hemodialysis units is an important quality measure to ensure patient safety. It is estimated that 41,000 central line-associated blood stream infections (CLABSI) occur

in U.S. hospitals each year. **Method:** We have followed the WHO recommendation of the 5-moment hand hygiene during health care. This process was strictly monitored among all dialysis unit staff, including doctors, nurses, allied health care professional and any visitors dealing with patients in the dialysis unit. A vigorous staff directed education was given to the involved staff whenever any drop in compliance is detected. **Results:** From December 2012 till July 2016, Al-Wakra Hospital dialysis unit experienced a significant increase in the workload. During this period the unit recorded 22,424 dialysis sessions. By the end of July 2016, 6801 dialysis session were performed through central catheters. The remaining sessions were done through arterio-venous fistulae and grafts. During this period, only two cases of dialysis catheter related bacteremia were reported. The two cases were attributed to failure of patients to follow the recommended procedure of catheter care at home. **Conclusions:** Investing in staff hand hygiene is a very important area for improving dialysis unit quality of care. Implementation of a strict unit vascular access care protocol and continuous staff monitoring and education can culminate in achieving a great result for dialysis catheter related bacteremia. Basic and cheap to apply tools can still play an important and effective role in improving care and reducing morbidity and mortality among hemodialysis patients.

PP4. Comparison of Mupirocin and Gentamicin in Prevention of Exit Site Infection in Peritoneal Dialysis Patients

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Introduction: Exit site Infection (ESI) is an important cause of morbidity and technique failure in Peritoneal Dialysis patients. Topical antibiotic application is recommended to reduce rates of ESI. However, there is conflicting evidence of superiority of mupirocin over gentamycin for prevention of ESI. **Methods:** We conducted a cross-sectional study in the Peritoneal Dialysis unit of our tertiary care hospital and retrospectively examined the rates of ESIs in Peritoneal Dialysis' patients in whom topical mupirocin was used (June 2006-May 2007) and in whom topical gentamycin was used (June 2007-May 2008) for the prevention of exit site infection. Exit site infection was defined and treated as per ISPD guidelines. **Results:** The rate of ESI was 0.162 (CI 0.0937-0.264) per patient year in mupirocin group as compared to 0.689 (CI

0.576-0.784) per patient year in gentamycin group. The lower rate of ESI episodes in Mupirocin group (compared with Gentamycin group) was statistically significant ($p < 0.001$). While all episodes of ESI resolved in mupirocin cohort with appropriate treatment, 4 episodes in gentamycin cohort led to catheter removal. **Conclusions:** A significantly lower rate of ESI in mupirocin cohort was seen compared to gentamycin. The higher rate of ESIs in gentamycin group was predominated by higher incidence of culture negative ESI.

PP5. Glycemic control among diabetic haemodialysis patients in Al-Wakra Hospital: Single centre experience

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Introduction: Diabetes mellitus is the leading cause for end stage renal disease in the US1 and in many of dialysis units world- wide. Good blood sugar control is very important factor in diabetes management and also in reducing long-term complications and comorbidities. Nephrologists usually try to exert their best in managing dialysis patients. Our study aimed to assess the efficiency of nephrologists care alone in controlling blood sugar assessed by HbA1C level among hemodialysis cohort. There is a strong correlation between HbA1C values and the weighted mean glucose values of the preceding 2–3 months. **Methods:** HbA1C level was used as an indicator for diabetes control among Al Wakra Hospital hemodialysis patients in 2015. Out of 49 patients on regular haemodialysis at one time, 30 patients were diabetic. Patients managed through dialysis multi-disciplinary round nephrologist round. Electronic medical records (Cerner) used to access patient's results. HbA1C level reviewed for diabetic patients over the last three months from the study time. **Results:** 30 patients out of 49 haemodialysis patients were diabetic (61.2%). 60% patients were males ($n=18$). The average HbA1C was 7.06. HbA1C was ≤ 6.5 in 14 46% of patients ($n=14$), 6.5-7.5 in 20% ($n=6$) and > 7.5 in 33% of patients ($n=10$) respectively. 70% of patients with poorly controlled blood sugar were males. The average HbA1C among the poorly controlled group is 8.95. Insulin is part of the treatment regimens in 19 patients (63%). 33% of patients were referred to specialist diabetes clinic ($n=10$). **Conclusions:** 1) Although, there is some doubt about the accuracy in assessing glycemic control but, HbA1c can still provide useful information. 2) A significant number of dialysis patients have poor glycemic control despite of

maximum effort from nephrology team. 3) Diabetologist involvement is recommended in at least one third of haemodialysis patient's cohort. 4) Hemodialysis patients may benefit from joint nephrologist-diabetologist round in the dialysis unit.

PP6. Indications for Endoscopy in chronic kidney diseases: Experience from Tripoli Central Hospital, Tripoli, Libya.

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Background/Aims: Endoscopy for CKD patients is diagnostic for GI manifestations, however it is not always indicated. Evaluate upper GIT-endoscopy necessity in CKD patients presented with GIT symptoms. **Methods:** Ninety Patients presented with nausea, vomiting, epigastric pain and hematemesis. Patients divided to three groups. Group A; they had upper GIT endoscopy at presentation and after three days. Group B had endoscopy at presentation only, and group C had not endoscopy. Patients had clinical assessment and CBC, renal, liver function, PT and INR, abdominal US at emergency room. **Results:** Ninety patients (43 female 87.8%), (47 male 52.2%), age mean (48.9 ± 0.13) were included. Vomiting & hematemesis reported in (37.8%), melena (24.4%), abdominal pain & hematemesis (4.4%), epigastric & hematemesis (15.6%), abdominal pain & melena 2 patients. Group A (30) patients, mean age (51.3 ± 2.3), 14 male (46.7%), 16 female (53.3%). At presentation, Hb ranged between 6 – 12 g/dl (8.2 ± 0.2), means of SBP (99 ± 1.4), DBP (69 ± 1.0), MBP (79 ± 1.0), pulse mean was (109 ± 1.0). Endoscopy findings; gastric erosions with hematin plus bile (34%), gastric erosions (27%), esophagitis with hematin in stomach and esophagus in (23%). Re-endoscopy revealed; normal upper GIT findings in (80%), bile in stomach in (20%). Group B (30) patients 14 male (46.7%), and 16 female (53.3%), age mean (46.4 ± 2.3). Hb mean (7.7 ± 0.19), pulse (85 ± 1.6), SBP (129 ± 1.8), DBP (77 ± 1.6), MBP (94 ± 1.5). Endoscopy findings were; 60% had normal endoscopic findings, 26.7% had mild traumatic bleeding, 10% had bile secretion, and one case had biliary gastritis (3.3%). Group C (30) patients, age mean (49 ± 2.3 years). Mean of Hb was (8.4 ± 0.2), pulse (72 ± 1.5). SBP (139 ± 2.4), DBP (85 ± 1.5), MBP (103 ± 1.7). All patients in the three groups had PPI, metoclopramide, oral antacids and hemodialysis

session daily. **Conclusions:** Endoscopy may be indicated in severe upper GIT symptoms associated with CKD. Most GIT complications can be managed medically and endoscopy is not required in most CKD patients.

PP7. Hepatitis C genotypes in Libya: Correlation with patients' characteristics, level of viremia and degree of liver fibrosis

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Aim: The aim was to determine the distribution of HCV-genotypes among patients attending two tertiary care hospitals in Benghazi and Tripoli, Libya, and to correlate this with patient's characteristics, viral load and degree of fibrosis. **Methods:** 286 HCV-RNA positive Libyan patients were recruited (166 patients presented at Aljomhoria Hospital, Benghazi and 120 patients presented at Tripoli Medical Center, Tripoli). They were referred from different health care facilities in east and west Libya for specific HCV treatment, respectively. HCV genotyping was carried out by gene amplification using COBAS-Amblicor HCV test. Liver histology was graded by Metavir score according to the stage of fibrosis. **Results:** HCV genotypes 1, 2, 3 and 4 were found in 24.1%, 10.8%, 3.8% and 61.2 of the patients, respectively. Genotype 4 was detected more frequently in patients from east Libya (Benghazi) compared to west Libya (Tripoli) (75.9% vs. 40.8%, $p=0.01$). In contrast, genotype 1 was more frequent in patients from west Libya compared to east Libya (34.7% vs. 16.9%, $p=0.01$). There was no significant correlation between HCV genotype distribution and the viral load. Patients with genotype 4 exhibited a higher degree of liver fibrosis ($p=0.01$).

Conclusions: HCV genotype 4 was the predominant genotype in Libya followed by genotype 1. However, as goes from the east to the west of the country, genotype 1 is increasing on the expense of distribution of genotype 4. Although no correlation was found between HCV genotypes distribution and the viral load, genotype 4 was associated with a higher stage of fibrosis.

PP8. Prevalence of hepatitis B and C among health care workers in three major referral hospitals in Benghazi and Albaida, Libya

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Aims: The aim of the present study was to determine the frequency of HBsAg and anti-HCV antibodies in health care workers (HCWs) at three major referral hospitals in Benghazi and Albaida, Libya, and to correlate the HBsAg status with history of hepatitis B vaccination among HCWs. **Patients and Methods:** One hundred eighty two HCWs, with a mean age (\pm SD) of 32.9 ± 8 years and age range from 20 to 59 years, were randomly enrolled in this study. They were 40 doctors, 54 nurses, 42 laboratory technicians, 10 health administrators, nine help nurses, eight anesthesia technicians, seven cleaners, five dentists, five midwives and two nutritionists. They were tested, after obtained a written consent, for the presence of HBsAg and Anti-HCV antibodies by enzyme linked immuno-sorbent assay (ELISA) techniques. A pre-test questionnaire was filled by each HCW to verify place of work, working period, type of work, status of HBV vaccination, and hi story of needle stick injury. **Results:** Four HCWs have Anti-HCV antibodies positive (2.2%) and 27 were HBsAg positive (14.8%), majority of them were doctors, laboratory technicians and nurses. Only 52% (95/182) of the examined HCWs received full dose of hepatitis B vaccine, while the others either not completed the vaccination schedule or have not receive it. One hundred (54.9%) of the participants had exposed to blood via needle stick injury during their work, 16 (16.6%) of them were HBsAg positive and three (3%) were anti-HCV positive ($p=0.01$). Needle stick injury was considered as primary risk factor in 59.3% (16/27 subjects) of HBsAg-positives and 75% (3/4 subjects) of anti-HCV-positives.

Conclusions: The present study showed a higher frequency of HBsAg than anti-HCV among HCWs in three major hospitals in eastern Libya. This may be explained by the low hepatitis B vaccination rate and the high rate of needle stick injury among this high-risk group for these infections. Implementation of vaccination program against HBV among this high-risk group is considered crucial.

PP9. The efficacy of Sofosbuvir in Hepatitis C patients in a tertiary teaching hospital in Qatar

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Introduction: Hepatitis C viral (is a widely prevalent disease, with extensive burden. The conventional HCV treatment has limitations and complications limiting its beneficial utilization. The new emerging direct antiviral agents (DAA) are very promising in the management of HCV. They are effective, well tolerated and have a single daily dosage regime. Sofosbuvir, one of the new DAA, which is approved for treatment of chronic HCV, has been introduced in HMC as non-formulary medication in Aug 2014. However, its role in treatment of chronic HCV as a part of combination therapy in all genotypes in patients with or without cirrhosis, need to be assessed and evaluated. **Methods:** Retrospective observational study; inclusion criteria: all patients who received Sofosbuvir treatment from HGH pharmacy in the period Jan 2014 to Jan 2015. Observation period: up to 12 weeks after the treatment course completion. Data collection: information about the medications, demographic data and laboratory investigations were obtained from the electronic patients' records.

Results: a total of 95 patients received either Sofosbuvir alone or in combination with other antiviral. All HCV genotypes included; 1a and 4 were the most predominant (37% and 30.5%). 50% were treatment naïve, 19% had liver cirrhosis, 9.5% liver transplant and 1.1% HCC, 1% received adjuvant therapy (42% Semiprevai, 25% Ribavirin, 25% Daclatasvir, 2% Ledipasvir and 7.4% Interferon a2a). 63% received their treatment over 12 weeks. 100 % achieved zero virus RNA starting from week 8 of treatment. SVR12 was maintained in 95 % of patients. The relapse rate was 40% for 1a and 20% for 1b, 2 and 4 ($P>0.05$). Patients with genotype 3 none of them relapsed. 60 % of the relapsed group were females, 100 % Qataris, 40 % with genotype 1a, 80 % were previously treated, 50 % had cirrhosis ($p<0.05$).

Conclusions: The SVR12 post Sofosbuvir treatment was maintained in most patients, regardless of genotype, complications of HCV or co-administered drugs.

PP10. Generic versus Brand Sofosbuvir-based Therapy: Real life safety and efficacy data

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Aim: The aim is to assess the effectiveness and safety of generic versus brand medication, in 399 patients treated with Sofosbuvir (SOF) based therapy. **Methods:** Single-center cohort, retrospective, observational study, including 399 cases. All patients, who started Sof-based regimens, whether brand provided by Hamad center, Qatar, or generic brought by the patients, were included: 24 weeks of SOF/ribavirin (RBV) (22.3%), or 12 weeks of either, SOF/daclatasvir (DCV) (15.9%), SOF/simeprevir (SMV) (29.1%), or SOF/PegIFN/RBV (32.8%). **Results:** 33.1% treated with brand and 66.9% with the generic. GT1 / GT4, were 57/399 (14.3%)/ 342/399 (85.7%). The overall response was 72% for generic compared to 87% for brand. In G 4, the generic group had a lower response, both in cirrhotic and non-cirrhotic compared to the original, where SVR in non-cirrhotic where 80% & 88.5%, while in cirrhotic, 67.2 % and 75 %, respectively. In G1, SVR achieved in 88.2% cirrhotic and 94.1% in non-cirrhotic, with brand, compared to 75.0% & 100%, with generic. There was a significant increase in serotonin level in patients treated with generic compared to brand by weeks 2 and 24 ($P=0.029$ & 0.025), but still within normal. The low response rate seen in Sof/Rib group, 60.3%. Patients having Sof/Sim or Sof/Dac, are 4.46 and 5.32 times, more likely to achieve SVR-12 than other regimen. The patients received generic medication were more prone to adverse effects ($P=0.29$). 13.6% experienced adverse effects, including: 2 deaths have been reported on SOF/PR due to cardiac arrest and MI, HCC in 5 cases, Decompensating in 2, other include anaemia, hyperbilirubenemia. **Conclusions:** Although response in generic is lower than brand, but still comparable, especially in Sof/Sim and Sof/Dac, regimens, with similar safety and tolerability. Generic drugs competition can dramatically reduce the price, but further study of long-term safety, is needed. We suggest that Sof/Rib is not a proper option a. The low price generic DAAS, ensures access to the new drugs, in

low or moderate economic countries, and can afford an opportunity to join the initiative to achieve the ultimate elimination of HCV.

PP11. Prognostic factors associated with morbidity and short-term mortality in patients with spontaneous bacterial peritonitis.

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Background/Aims: Spontaneous bacterial peritonitis (SBP) is one of the important causes of morbidity and mortality in patients with liver cirrhosis. The present study aims to identify the risk factors associated with morbidity and short-term mortality in cirrhotic patients with SBP. **Patients and Methods:** In a retrospective, hospital based study, 333 cirrhotic adult patients admitted to Hamad General Hospital-Qatar from 2007 through 2012 were reviewed. All data were analyzed with respect to demographic parameters, clinical features and laboratory as well as radiological characteristics on day one of admission to the hospital. Patients with variceal haemorrhage and advanced malignancy were excluded. The diagnosis of cirrhosis was based on the combination of clinical, laboratory and imaging findings. SBP was defined by abdominal paracentesis in the presence of polymorph-neutrophil cell count ≥ 250 cells/mm³ in the ascetic fluid. Multivariate logistic regression was used to analyze statistically significant variables. The proportional hazards Cox regression model was used to analyze the hazard rates of the predictors adjusted by age and gender. Values of $p < 0.05$ were considered statistically significant. **Results:** A total of 63 cirrhotic patients with ascites and SBP were identified (during hospitalization). 61 (96.8%) patients were diagnosed with SBP for the first time. The overall 30-day in-hospital mortality rate was 19% (n=12). Median survival duration for those who died was 8 days. The mortality rate was significantly higher in patients with multiple-antibiotic resistant bacteria than in those with other bacteria (n=8 vs. n=4, $p=0.03$). Multivariate Cox proportional regression analysis showed Child-Pugh score (HR = 1.23, 95% CI: 1.05 to 1.82, $p=0.027$), MELD-Na score (HR = 1.29, 95% CI: 1.10 to 1.92, $p=0.023$), and acute kidney injury (HR = 2.09, 95% CI: 1.41 to 3.47, $p=0.01$) was significantly associated with 30-day in-hospital mortality.

Conclusions: SBP has a predictable impact on short-term mortality in patients with liver cirrhosis and ascites. In addition to the multiple-antibiotic resistance to the bacteria, severities of both hepatic and renal dysfunction were the independent predictors of outcome.

PP12. Mapping the sero-prevalence rate of viral and bacterial etiologies that may cause acute febrile illness and acute infections with neurological disease in Libya.

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Introduction: The etiology and epidemiology of acute febrile illness (AFI) in Libya has not been fully studied. The aim of the study was to study the prevalence of twelve AFI and acute infections with neurological disease (AIND) etiologies in Libya. **Methods:** The testing panel was divided into three groups, Arbovirus and encephalitis including Tick-Borne encephalitis (TBE), West Nile (WNV), Sand-fly Sicilian, Sand-fly Naples and Sindbis; the hemorrhagic fever viruses including Rift valley fever and Hanta virus and the zoonotic bacteria group including Brucella, Q-fever, Leptospira, Rickettsia. An in-house ELISA assay was used to screen for total antibodies. Confirmation for reactive samples was performed by commercial ELISA. **Results:** The study population included 986 serum samples randomly selected from all geographical areas. The age range was >1 year to 99 years with an average value of 25.7 years. It was noted that more than 70% of the serology positive cases were among population of ≥ 15 years. ELISA results revealed that 51% of subjects had antibodies against at least one agent. Analysis of data showed that infections by *C. burnetti* (22%) and WNV (14%) were the most common etiologies found in all age groups. Antibodies against one or more bacterial zoonotic pathogen were detected in 36% of samples, while antibodies against one or more arbovirus and/or encephalitis causing pathogen were detected in 8% of samples. Mixed antibodies against bacterial and viral pathogens were also detected in 7% of the samples. Bacterial pathogens showed that infection by *C. burnetti* was found to be highest followed by *R. conorii*, Brucella, Leptospira infection and *R. typhi* infections with average prevalence rates of 24%, 18%, 6%, 3% and 2%,

respectively. Infections by viral pathogens were also further analyzed; antibodies against WNV and TBE infections were the most common especially in the southern parts of the country with prevalence rates of 13% and 6%, respectively followed by the other viral pathogens. **Conclusions:** Exposure to tick-borne pathogens could be a major cause for AFI in different parts of Libya. Prospective hospital-based surveillance studies are required also to assess the morbidity and mortality of these etiologies in the population.

PP13. Utilization of pneumococcal and influenza vaccines among patients with pneumonia at an academic teaching hospital in Qatar, Prospective observational study

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Introduction: Pneumonia is a worldwide concern due to its high prevalence and its impact on the society. Pneumococcal disease together with influenza cause significant morbidity and infection related mortality. The financial burden on countries due to the cost of doctor visits, hospitalization, deaths as well as lost working days, is estimated by millions of dollars during the last decade. In this study we evaluated the adherence of clinicians to the hospital and the international guidelines on immunizing candidate patient groups with pneumococcal and influenza vaccines prior to discharge. A practice that should improve care of patients with community acquired pneumonia. **Method:** Patients admitted to HGH with confirmed diagnosis of pneumonia over 3 months period. Data was collected from our electronic pharmacy and patients' records. The primary outcome is to assess the adherence of physicians to guidelines on prescribing pneumococcal and flu vaccines on discharge to susceptible patients admitted with the diagnosis of pneumonia. **Results:** 60 patients, with mean age of 63.1 (+/- 21.9) years, were included in the study, 60 % of them were males, 54 % Qataris. 41 % were diabetic, 13.3 % Asthmatic and 13.3 % had CVD. 26.7 % received their pneumococcal vaccine within the last 5 years and 17 % received their influenza vaccine during the last flu season. 71.1 % of the patients needed to receive pneumococcal vaccine, of them only 21.7 % did. 83 % were due to have their influenza vaccine, of them only 21% received it. 50 % of patients prescribed pneumococcal vaccine at discharge were Asthmatic, 40 % diabetic 30 % were non-

smokers. 18 % received both pneumococcal and influenza vaccines at discharge. There was no significant correlation between comorbidity and rate of vaccines uptake. Uptake of influenza vaccination was higher among male patients (90 %) P= 0.029. There was no significant gender difference for the pneumococcal vaccine uptake.

Conclusions: Vaccination coverage is below levels targeted in the local and international guidelines. Primary care physicians and subspecialists should work together to ensure that persons at high risk receive appropriate vaccination.

PP14. Prevalence, antibiotic resistance, and extended spectrum and AmpC β -lactamase activity among *Klebsiella pneumoniae* and *Escherichia coli*

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Introduction: Extended-spectrum β -lactamases (ESBLs), including the AmpC type, are important mechanisms of resistance among *Klebsiella pneumoniae* and *Escherichia coli* organisms. The aim of the study was to investigate the occurrence of ESBL-producing *K. pneumoniae* and *E. coli* isolated from two hospitals in Tripoli, Libya. Isolates were further analyzed for AmpC-type β -lactamases production. **Methodology:** All clinical isolates collected over two years (2013-2014) were evaluated for susceptibility to a panel of antimicrobials and were analyzed phenotypically for the ESBL and AmpC phenotype using screening and confirmatory tests; E-test (cefotetan/ cefotetan+cloxacillin), AmpC combination disc test and ESBL and AmpC screen disc test. Both ESBL and AmpC-positive isolates were then screened for the presence of genes encoding AmpC β -lactamases by polymerase chain reaction (PCR). **Results:** In this study, 151 consecutive non-duplicate clinical isolates of *K. pneumoniae* (76) and *E. coli* (75) were identified and antibiotic susceptibility testing was performed using automated system. Of the *K. pneumoniae* and *E. coli* tested, 75 and 16% were resistant to gentamicin, 74 and 1.3% to imipenem, 71 and 12% to cefoxitin, 80 and 12 to Cefepime, 69 and 22.6% to ciprofloxacin, respectively. None of *E. coli* isolates were defined as multidrug resistance compared with *K. pneumoniae* (50/76; 65.8%). *K. pneumoniae* ESBL producers was significantly higher 65/76 (85.5%) compared with 13/75 (17.3%) of *E. coli*

isolates ($P < 0.0001$, $OR = 4.93$). Low frequency AmpC was detected phenotypically using three different techniques. Using PCR, AmpC gene was detected in 7.9% (6/76) of *K. pneumonia*, and 4% (3/75) in *E. coli* isolates, the gene encoding the CMY enzyme was detected in six AmpC positive isolates (4 in *K. pneumonia*, and 2 in *E. coli*). Furthermore, 3/9 isolates that demonstrated Amp C activity were identified plasmid mediated. All AmpC positive strains were resistant to cefoxitin and isolated from patients admitted to intensive care units. **Conclusions:** Further studies are needed for detection of AmpC variant enzyme production among such isolates. Continued surveillance and judicious antibiotic usage together with the implementation of efficient infection control measures are absolutely required.

PP15. Efficacy and safety of once daily liraglutide versus twice daily exenatide in type 2 diabetic patients in Qatar: an observational study

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Introduction: Type 2 diabetes prevalence is strongly associated with the increase in obesity prevalence. Many of the current diabetic treatments cause further weight gain. Glucagon-like peptide-1 receptor agonists (liraglutide & exenatide) offer advantages of either keeping weight stable or even reducing weight while achieving good glycemic control. **Methods:** A retrospective observation study of Patients with type-2 diabetes who took liraglutide (1.8mg subcutaneous [SC] once daily) or exenatide (10mcg SC twice daily) for at least 1 year in addition to their anti-diabetic medications were eligible. For each patient, the following data were collected: HbA1C, fasting plasma glucose, body weight, blood pressure, lipid profile, hypoglycemia episodes, kidney and liver function. Patient's medical records (both electronic and paper-based records) were used to collect required data. Data analyzed using descriptive & inferential analyses. **Results:** 212 patients were included in the study (114 in exenatide group and 98 in liraglutide group). There were no significant differences in all of the patients' demographics and characteristics between the two groups. Around 73% of included patients were female and half them were aged between 50–59 years. There was insignificant difference in mean HbA1C change between both medications at either 26 or 52 weeks ($p = 0.23$ and 0.40 , respectively). Patients achieved HbA1C

$\leq 7\%$ were significantly higher in the liraglutide group at week 26. Liraglutide reduced the mean fasting plasma glucose more than exenatide did at week 26 (-1.099 vs. -0.122 mmol/L; $p = 0.15$) and week 52 (-1.150 vs. -0.616 mmol/L; $p = 0.52$). Both medications exhibited weight losses at 26 and 52 weeks; liraglutide -1.24 , -2.54 vs. exenatide -1.63 , -3.7 kg, respectively. Although both medications were associated with some benefits in terms of lipid profile and blood pressure at a certain point, neither of them were able to show a significant change from baseline. No patients in either groups reported any GI side effects or episodes of hypoglycemia. There was no statistically significant difference between two groups in regards of liver and kidney functions except serum creatinine elevation in the liraglutide group at 52 weeks ($p = 0.001$). **Conclusions:** Exenatide and liraglutide resulted in similar glycemic effects (HbA1C and FPG changes) in patients with type 2 diabetes that were sub-optimally controlled with other anti-diabetic therapy. Weight reduction effectiveness was confirmed for both medications with no reported side effects or hypoglycemic episodes during the treatment period.

PP16. Prevalence of hepatitis D virus infection among patients infected with chronic hepatitis B in referral tertiary hospitals in Libya

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Background/Aim: Hepatitis B virus (HBV) and hepatitis D virus (HDV) are major public health problem. Globally, there are more than 350 million individuals chronically infected with the HBV. A substantial part of them (around 20 million) co-infected with HDV. To the best of our knowledge, no study has been conducted in Libya to determine the status of HDV in Libya. The aim of this study was to determine the prevalence of HDV infection among patients infected with chronic hepatitis B in the two main tertiary hospitals in Tripoli and Benghazi, Libya. **Patients and Methods:** This study was conducted during the period January 2010 to June 2013 on patients with chronic hepatitis B (i.e. HBsAg positive for more than six months) who were followed up at liver clinics in the two major hospitals in Tripoli (Tripoli Medical Centre) and Benghazi (Aljomhoria Hospital). One hundred and sixty two patients were randomly selected

(88 patients and 74 patients, respectively). HBV and HDV infections were detected by enzyme-linked immunosorbent assay (ELISA). Liver function tests were assessed through auto-analyzer. Clinical data and the test results were entered into SPSS program. Chi-square, independent t-test and logistic regression were used for statistical analysis. **Results:** 103 (63.6%) patients of the study group were male and 58 (36.4%) were female, and the mean age of patients was 36.92 ± 15.35 . From 162 patients with chronic HBV infection, four (2.5%, 95% confidence interval (CI) = 1.3-3.5%) were tested positive for anti-HD antibodies. In a uni-variable analysis, age ($p=0.04$), elevation of serum ALT ($p=0.03$), elevation of serum AST ($p=0.04$), and presence of cirrhosis ($p=0.03$) were significantly related to HDV seropositivity. **Conclusions:** The seroprevalence of HDV in chronic HBV Libyan patients was 2.5%, which seems to be lower than the global prevalence of HDV. Regular epidemiological studies are necessary to monitor the epidemiological trend of this infection in Libya.

PP17. Occurrence of OXA-48 carbapenemase-producing *Klebsiella pneumoniae* in Tripoli, Libya

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Introduction: Carbapenem-resistant *K. pneumoniae* isolates are being increasingly reported, particularly from countries surrounding the Mediterranean area. It constitutes a worldwide problem associated with high rates of treatment failure and mortality. The purpose of this investigation was to determine the prevalence and the characteristics of carbapenemase-producing *K. pneumoniae* isolates recovered from various clinical specimens in the university hospitals of Tripoli, in Libya. **Methodology:** All *K. pneumoniae* isolates (175) obtained from four hospitals were subject to phenotypic study including antibiotic susceptibility and expression of extended-spectrum β -lactamases (ESBLs), both combined disc diffusion test and temocillin disc diffusion for detection of OXA48 were performed. Multiplex polymerase chain reaction (PCR) amplification was used to determine the presence of blaOXA48 encoding gene among isolates. **Results:** Overall the resistance prevalence was moderate for aminoglycosides (8.8-66.2%), fluoroquinolones (52.7-59.5%), and carbapenemes (29-46.6%), all isolates were sensitive to colistin. A 43.2% of

isolates were identified as multidrug resistance. High rates (69%) of ESBL producers were detected phenotypically. The prevalence of blaOXA-48-like gene (79/175; 70%) was high among isolates determined using multiplex PCR compared with phenotypic detection assay using temocillin (45%). All strains harboring blaOXA-48-like gene were isolated from inpatients and the majority (67.4%) of the isolates was obtained from patients admitted in intensive care units. **Conclusions:** This study showed the impact of OXA-48-like carbapenemases in clinical isolates is high, which may lead to serious therapeutic problems in the near future.

PP18. Duplicate removed.

PP19. Assess Utility of Once Yearly IV Injection of Zoledronic Acid 5mg in Treatment of Osteoporosis

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Introduction: Osteoporosis is becoming major concern in Qatar due to its high prevalence and evidence of early-expected decline in BMD of the spine and femoral sites and Qataris showing lower BMD values at the spinal site than other females from Western and Arab countries. Despite importance of this health problem, there are not enough studies in the Middle East to develop regional guidelines or to support the application of recommended international guidelines to this population based on the heterogeneity between population characteristics worldwide that may positively or negatively affect any treatment strategy. **Methods:** 108 patients with confirmed diagnosis of Osteoporosis, who received at least one dose of Zoledronic Acid 5mg annual infusion for treatment of Osteoporosis, through Hamad Medical Corporation (January 2009 - May 2011). Review of patient's medical profile, X-ray reports for Bone Mineral Density (BMD), patient's laboratory results through computerized medical records (eMR viewer) for bone turnover marker (B-COX), in addition to reviewing the nurses records of IV admixture room, patients profile and drug information center in order to analyze the adverse drug reactions reported by patients, nurses or doctors. **Results:** The patients who received Zoledronic acid 5mg annual infusion showed significant increase in BMD values for the lumbar spine at (L2-L4) after the first dose and the second dose as well, with P values of 0.039 & 0.024 respectively, the values of lumbar spine at (L2) trend to

be increased but non-significantly over the two years. After the second dose femoral neck and total hip BMD values trend to be decreased without reaching significant values. The biochemical markers were improved post Zoledronic acid 5mg annual dose, however it didn't reach significant values. Headache, flue like symptoms and fever were the most common adverse drug reaction associated with Zoledronic acid 5 mg IV administration.

Conclusions: Once yearly dose of Zoledronic acid 5mg improves BMD of lumbar spine, shows good tolerability and favorable safety profile. No evidence was found that the IV administration of Zoledronic acid 5mg showed improvement in the BMD of femurs and bone turnover marker (B-CTX), or proves its association with severe ADR.

PP20. Non-insulin Injections in Primary Care

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Background/Aim: The use of new antidiabetic non-insulin injectable medications has considerably increased in the past few years. Primary care services are deeply involved in long term care of diabetics and hence have to accommodate this changing face of diabetes care after emergence of these new agents. The aim of this study is to demonstrate our experience in screening of the healthcare providers' perception and readiness towards the use of injectable non-insulin treatment of diabetes. **Methods:** We have undertaken a survey questionnaire among doctors and nurses screening their perception about the concept of prescribing and administration of non-insulin injectable forms. Specific questions were addressed targeting patients' compliance, cost effectiveness, and counseling. **Results:** 70% of the sample stated that the new noninsulin injectable forms are game changers that will create a new theme in the traditional management of patients with diabetes. They also highlighted the non-competitive cost effectiveness when compared to older forms. 95 % agreed that more counseling is needed to introduce this concept into clinical practice, which will ultimately reflect on the consultation time.

Conclusions: Indication for non-insulin injectable forms should be thoroughly reviewed and patients always carefully selected. Health care practitioners should always prioritize cost effectiveness when prescribing these

medications to avoid unnecessary burden on community resources.

PP21. The efficacy of Dapagliflozin as a novel oral antihyperglycemic drug in the treatment of patients with type 2 diabetes mellitus.

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Introduction: Dapagliflozin is one member of the new class of oral antihyperglycemic drugs; the sodium-glucose cotransporter 2 (SGLT2) inhibitors. **Aim:** To evaluate the efficacy of Dapagliflozin in treatment of type 2 diabetes mellitus (T2DM) as monotherapy or in combination with other hypoglycemic agents. **Patients and Methods:** All T2DM patients treated with Dapagliflozin in HGH since its introduction as non-formulary medication on 1st April 2013 until 30th April 2015 were included. Data regarding prescribed drugs were obtained from the pharmacy computerized system. Demographic information and laboratory results of patients were obtained from the patient's electronic system. **Results:** 81 patients were identified to receive Dapagliflozin during the study period, 71% of them were males, 100 % were Qataris with mean age 57 ± 9 and mean A1c baseline 9 ± 1.4 . Dapagliflozin as add on therapy was found to decrease A1c significantly after 6 months by -0.8 ($P=0.006$), and after 12 months by -1.5 ($P=0.062$). The fasting blood was significantly reduced at 6 months and 9 months ($P=0.001$, $P=0.03$ respectively). There was no significant association between different co-administered antidiabetic medication and reduction in A1c or FBG. **Conclusions:** Dapagliflozin significantly reduced HbA1c level of T2DM patients in combination of other OHA or insulin within 6 to 12 months of treatment.

IV. Poster Abstracts (Theme: Quality Improvement and Patient's Safety)

PP22. Assessment of medication adherence and factors contributing to non-adherence to calcium and vitamin D therapy.

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Introduction: Osteoporosis is a major worldwide concern. In Qatar, osteoporosis is common among menopausal Qatari women. **Methods:** All patients attending a secondary care rheumatology clinic in a teaching hospital serving a multiethnic population, in the period between April and June fulfill the inclusion criteria. Patients were asked verbally before distributing the questionnaire about the duration and reason of prescribed Calcium and vitamin D, only patients who are receiving Calcium and Vitamin D for duration of one year or more for purpose of osteoporosis management (treatment and prophylaxis) and are willing to participate in the questionnaire were given the consent form and included in the study. **Results:** There was no statistically significant difference between calcium and vitamin D group in terms of adherence score ($p=0.175$). About third of patients in both groups showed low adherence score; 31% (53/171), 38.2% (128/335) in calcium and vitamin D groups, respectively. Overall, there was significant difference in adherence score between age groups ($p=0.001$). Low adherence score was mostly reported in young age group (18-39 years) for both medications but not related to level of education. Forget to take medication was the most reported reason of non-adherence in both groups (29.5%, 89/302). Quarter of patients stated that multi-reasons contributed to their non-adherence (24.8%, 75/302). **Conclusions:** Low adherence was high among both calcium and vitamin D groups (around third of both groups), however; there was no significant difference in medications adherence between the two groups. Forget to take medication was the main reason for non-adherence. This study shows the current adherence status among such patients towards their therapy, and promotes further studies to be done in order to improve patient's adherence and eventually their health outcome.

PP23. Impact of clinical pharmacist's interventions in an Acute Medical Assessment Unit.

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Background/ Objectives: Acute Medical Assessment Unit (AMAU) is a new ward at Hamad General Hospital. Its primary role is to provide rapid definitive assessment, investigation and treatment for patients. The unit's purpose is to increase turnover admission and discharge rate by employing a multidisciplinary team of whom a

clinical pharmacist is a part and is responsible for resolving medication-related problems and also for facilitating communication with the pharmacy to improve patient-discharge flow. The objectives of this study are to investigate and classify the effect of clinical pharmacist interventions on appropriateness of prescriptions, as assessed by initiation or discontinuation, and to explore the relationship between these interventions and clinical health outcomes and cost reduction. **Methods:** Over 2 consecutive months, 2 clinical pharmacists are assigned to different medical teams at AMAU. They documented their interventions through data-collection form, which was designed to classify the type of interventions and clinical health outcomes. **Results:** The clinical pharmacists at AMAU documented 286 interventions over 2 months, classified to major interventions (24.9%), important interventions (51%) and minor interventions (24.1%). The most drugs called for clinical pharmacist interventions were antimicrobial medications, 25%, vitamins and electrolytes, 12%, and cardiovascular medications, 12%. 86 interventions required medication initiation to improve the therapeutic plan. Whereas, there were 66 interventions to discontinue some medications either due to safety issues or no indication for prescribing. Clinical pharmacist interventions outcomes were improved patient safety by 39.1%, and improved treatment efficacy by 29.7%, while 20% of interventions contributed in cost reduction. **Limitation:** Since this is a day service some patients may not be seen by the clinical pharmacist during evening and night admissions.. **Conclusions:** This study confirmed the role of clinical pharmacist's interventions in improving patient's care. The clinical pharmacist's demonstrated an obvious improvement in patient safety and therapeutic efficacy outcomes, which led to a reduced hospital readmission, drug costs and possibly length of hospital stay. Beside their performance in daily medical rounds, clinical pharmacists have another role in facilitating patients' flow through acceleration of medicine dispensing process from in-patient pharmacy and automated Pyxis machine, responding to inquiries from other healthcare professionals, and collaborate with the MDT to ensure best quality of care.

PP24. Nurses' perception of rapid response team in a tertiary hospital in Saudi Arabia.

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Introduction: For the last 30 years, the goal of improving the survival rate for patients post cardiopulmonary arrest has remained unattainable. This apparent failure to rescue opened the door to devise new strategies to improve patient outcomes at the onset of subtle deterioration, rather than at the point of cardiac arrest. Institute for Healthcare Improvement (IHI) introduced the Rapid Response Team (RRT) as one of the six preventative steps to save lives. Nurses' perceptions of the RRT influenced by the content and process support provided. Nurses are responsible to detect the early signs of deterioration, and activate the RRT service. **Aim:** The aim of this cross sectional descriptive study was to examine nurses' perceptions about the effect of the RRT and perceived content and process support in managing patient deterioration by using mental model maintenance and building at individual, group and hospital levels in a tertiary hospital in Saudi Arabia. **Methods:** 300 nurses were recruited using a representative sampling method.

Results: The study findings showed that the overall perception about the RRT was high. There was a significant positive correlation between the frequent utilization of the RRT and the perceived content support. The analysis of the open ended questions indicated that there were more advantages to have the RRT service than disadvantages. **Conclusions:** This study suggested that RRT service is influential in improving nurses' perceptions about managing Patients' deterioration. Training program about RRT utilization should include both content and process support, which may enhance building and maintaining the organizational outcome.

PP25. Acute confusion management clinical pathway

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Background: Acute confusion is common and increases morbidity, mortality and length of stay. Patients with acute confusion are often disruptive for staff and other patients and management is challenging. Health systems around the world have varying approaches to managing similar healthcare conditions. However, evidence shows that when care models differ, clinical outcomes are not optimized and patient safety can be compromised. In response, healthcare organizations are employing standardization of clinical pathways, policies and

protocols as proven tools for increasing uniformity of practice and patient safety, and reducing the number of errors. **Objectives:** The Standardization of Clinical Pathway program aims to address Hamad Medical Corporation (HMC) objectives to improve quality of patient care, reduce harm and provide tools to enable standardization of clinical practice. Such changes are essential to meet the challenges posed by the rapidly increasing demand for healthcare in Qatar. Our objective is to improved decision making and confidence within the clinical workforce and to minimizing errors and risk of mismanagement of patient care. **Process:** The Hamad Healthcare Quality Institute (HHQI) along with senior clinicians from the general internal medicine department has established the Clinical Pathway Design program to standardize care and give staff, especially medical residents and nurses, a sense of assurance. Senior clinicians at (HMC) identified the most commonly occurring conditions, of which sixteen were chosen for the team of experts to work on to optimize the related clinical pathways. Pathway was developing through collaborative working and reviewing evidence based current practice and published Guidelines. **Conclusions:** For each pathway, suites of products are created including paper and electronic order sets, physician pocket cards and educational posters. The programme commenced on January 2015. Electronic access to the clinical pathways will be made available to clinicians through Cerner systems and the work is currently in progress.

PP26. Logic model of intervention aimed at increasing compliance and adherence to oral anticoagulation drugs in patients with atrial fibrillation

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Introduction: Improving quality is a multidimensional concept. Considering the economic burden of AF in a society, it is imperative that quality of care needs to be optimized. We undertake a quality intercession for atrial fibrillation (AF), which is the most widely recognized sustained cardiovascular arrhythmia, and a noteworthy preventable reason for stroke, hospitalization and expanding healthcare expenditures. Despite the fact that oral anticoagulation prevents strokes due to AF, there is extensive evidence suggesting this therapy remains underused. Policies and health intercessions need to be structured for a broad range of local conditions if we

desire to achieve our global goal of improvement in cardiovascular health. **Methods:** A purpose-built Logic model for an educational intervention program to enhance awareness and knowledge about their medical condition (AF). Providing education and safety information to ensure patients are able to make informed decisions about treatment options and to manage their OAT aimed at enhancing the adherence compared to routine practice by understanding and eliminating the patient barriers to adherence and compliance. **Recruitment and study design:** Quasi experimental interrupted time series with control group. **Results:** Most patients with AF have extremely constrained learning about their heart condition, its outcomes, and how anticoagulant treatment can advantage them. Intercessions for patients with AF who get OAT ultimately aim to improve clinical outcomes basically decreasing the predominance of stroke and mortality. Short-term results increase patients' compliance by addressing factors that affect treatment adherence. **Conclusions:** Clearly, whilst unintentional non-adherers profit by memory helps (that is updates, tablet dosages), intentional non-adherers need to address both their perceptions and misinformation, which is accomplished by expanding tolerant training encompassing their treatment. Intentional non-adherers seem to question their own requirement for their prescription and have worries about taking it when contrasted with adherers. The requirement for on-going backing and instruction to patients and doctors is basic to accomplish best practice and treatment adherence

PP 27. Management of anemia in hemodialysis: A nurse- based approach.

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Background: The concept of anemia nurse manager (ANM) was explored because of her availability in the dialysis unit, which provides a chance to address management swiftly and timely. We did a prospective observational study to compare our new ANM model to our standard of care (SOC) in regard to achieving hemoglobin (Hg) in target (10-12 g/dL) and avoid extreme Hg (below 9 or above 13). **Methods:** ANM team evolved from two part-time nurses under supervision of an expert nephrologist who provided extensive training

for them for 2 months to become mostly independent. We randomly selected and gradually included all patients located in 1st floor (our center is the largest in Qatar and has 380 patients in 2 floors). They were followed for 8 months (September 2015 to May 2016). We followed Hg, iron sat and ferritin per our protocol. Nurses reviewed the results one day after blood draw with the nephrologist and prescriptions for erythropoietin stimulating agents (ESA) and iron were written simultaneously (physician prescription is mandatory per health authority in Qatar). Patients who did not have any Hg values during this period were excluded. **Results:** We started with 66 patients and gradually reached 211 patients by May 2016 (all patients in 1st floor). Percentage of patients with Hg within target range steadily improved (54% in September 2015 versus 75% in May 2016). There was a statistically significant difference in the number of patients in target range in the new model (1st floor) versus SOC (2nd floor, n=147) in 3 months period (May-July) (70% versus 59%) ($p < 0.05$ Fisher exact test). Number of patients with extreme Hg has improved from 10.7% in Sep. 2015 to 6.4% in May 2016 (censored for ESA naïve patients) compared to 12% in SOC group ($p = 0.08$). Where also were able to improve patients in ferritin target (200-800) (69% versus 55%, p Value 0.005) without affecting iron saturation and better Hg targets. **Conclusions:** Our ANM model designed to fit local requirements in Qatar significantly improved percentage of Hg and Ferritin in target and decreased extreme Hg levels compared to SOC.

PP28. Hyponatremia: management audit and implementation of clinical pathway.

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Introduction: Healthcare organizations are employing standardization of clinical pathways, policies and protocols as proven tools for increasing uniformity of practice and patient safety, and reducing the number of errors. Hyponatremia is the most common electrolyte abnormality encountered in clinical practice. Errors in establishing the etiology of hyponatremia can lead to inappropriate treatment with adverse outcomes. Hyponatremia state in-hospital has 20-30% mortality and its management is challenging. **Objectives:** This Audit aims to address HMC objectives to improve quality of patient care, reduce harm and provide tools to enable standardization of clinical practice. Such changes are

essential to meet the challenges posed by the rapidly increasing demand for healthcare in Qatar. **Methods:** We analyzed the physician approach to Hyponatremia in HMC for the month of April 2016. With the help of the chemistry lab of HGH, we identified 726 samples, sent to the chemistry lab for 'STAT' evaluation which were found to have hyponatremia of $\text{Na} < 130$. 118 patients had severe hyponatremia, $\text{Na} < 125$. **Audit Standard:** Five standards of management were analyzed, as per the European Guidelines of Endocrinology (Acute presentation or neurological symptoms present, Serum Osmolarity, Urine Osmolality, Urine Sodium, Use of 3% saline). **Results:** 50 of 118 samples with severe hyponatremia ($\text{Na} < 125$) were identified which were 'acute' or had 'neurological symptoms'. 54% (27/50) were investigated and managed correctly as per guidelines. 70% (35/50) had documented serum osmolality but were not investigated further. When all 4 parameters were investigated, the treatment was prompt and resolution of hyponatremia was noted, (54%). None of the files had the diagnosis mentioned on patient's Cerner chart or discharge summaries. **Conclusions:** Hyponatremia is common and assessments are incomplete in HGH. Only 54% of patients with severe hyponatremia were correctly evaluated and managed. **Implications:** Hyponatremia pathway as part of The Hamad Quality Institute (HIHQI), along with senior physicians from general internal medicine department will be implemented and disseminated throughout the HMC. A proper clinical pathway should improve decision-making and confidence within the clinical workforce and also minimize errors and risk of mismanagement of patient care.

PP29. Implementation of Sepsis Management Bundle in Enaya Long Term Care Facility in Qatar

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Introduction: Atypical presentation of illness and infection often delays accurate diagnosis and treatment of sepsis in long-term care facilities contributing to patient mortality. Given the acute physiologic impairment associated with sepsis, and the limited functional reserve, especially in elderly patients; it is even more essential to identify sepsis promptly and implement appropriate interventions. Based on International guidelines for management of severe sepsis, a management bundle was

created and implemented in Enaya for early recognition, prompt diagnosis and initiation of treatment. **Methods:** Data was collected from infection control surveillance registry in Enaya from Nov 2015 to Aug 2016. The data included patient demographics, co-morbidities, risk factors to sepsis and outcomes (i.e. transfer to ED and mortality). A screening tool was created to identify sepsis early and initiate sepsis bundle (OMAA). Data was collected to monitor compliance with this bundle and its effect on outcomes. **Results:** Between the study periods there were a total of 35 patients who developed sepsis (3.5% per month). 27 patients (60%) had ≥ 3 co-morbid conditions. 23 patients (65%) who developed sepsis were above the age of 65 years. 22 patients (63%) had NGT, 5 (23%) had NJT and 8 (14%) had PEG. About a quarter of the patients had an indwelling urinary catheter. Although many patients developed sepsis, few were transferred to ED (10.3%) and the number declined to zero after implementation of the sepsis bundle. Mortality remained the same over study period. Compliance to sepsis bundle improved initially but declined in the last 4 months. Non-compliance to sepsis bundle was associated with higher rate of transfer to ED (17% vs. 3%) and mortality (13% vs. 6%). **Conclusions:** Sepsis is prevalent in Enaya and most of these patients are managed within the facility with a low rate of transfer to emergency room. Majority of the cases were among elderly and all had enteral feeding tubes. Compliance with sepsis bundle improved outcomes, including transfer to ED and mortality.

PP30. Survey of physicians' Adherence to the guidelines of antithrombotic therapy for prosthetic heart valves

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Introduction: The 2014 ACC/AHA guidelines for the management of patients with valvular heart disease recommend warfarin for the patients with mechanical heart valves to maintain a target INR according to the particular valve type & risk factors. An additional low dose aspirin in patients with mechanical heart valves has a strong evidence to reduce mortality (level of evidence: A) class I recommendation. Applying these guidelines will help decrease the risk of thromboembolism in patients with mechanical heart valves. We wanted to assess physician's adherence to the latest guidelines and to

improve it if needed. **Methods:** An observational cross-sectional survey was conducted in warfarin clinic of Heart hospital HMC, analyzing adherence to recommendations of antithrombotic therapy for prosthetic valves. The population consisted of patients with valve replacement; including Aortic, Mitral & dual valve replacement. Data was gathered following the encounter at the warfarin clinic from the period from February 15th, 2016 till March 15th, 2016. **Results:** Only 18% of patients are prescribed Aspirin in addition to the Warfarin. 62% of the patients are on therapeutic INR targets. Accordingly, an intervention was done on 07/08/2016 by posting a table outlining the latest guidelines on physician's desk in one of the two-warfarin clinics. A poster of the project was also posted in the clinic. Our primary aim was to increase the percentage of patients on Aspirin from 18% to 50% after 3 months and 80% after one year. The secondary aim was to increase the percentage of patients with therapeutic INR from 62% to 70% after 3 months and 80% after one year. **Results:** Another survey was done 2 weeks after the intervention and showed: An increase in percentage of patients on Aspirin from 18% to 28%. The percentage of patients with therapeutic INR was 64%. **Conclusions:** Providing physicians with visual tools outlining the ACA/AHA recommendations of giving aspirin to patients with mechanical heart valves increased their adherence to it from 18% to 28% in a preliminary assessment.

PP31. Improving hand hygiene practices in an Acute Medical Assessment Unit.

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Aim: It is well known that improving adherence of healthcare workers with hand hygiene decreases hospital-acquired infections. We aimed to improve hand hygiene practices of Acute Medical Assessment Unit (AMAU) Staff from a baseline of 23% to 45% through a 6 week intervention period. **Methods:** After assessment of the microsystem using 5Ps, a survey was conducted to assess the perceived barriers to performing hand hygiene. Based on the results of the survey and literature review, interventions of proven efficacy were undertaken to increase adherence to hand hygiene practices. These interventions included displaying posters, banners,

ensuring availability of hand sanitizers, educational sessions and a campaign day etc. Data on compliance to hand hygiene was collected using a standard proforma by secret shoppers. **Results:** The survey showed that the top three perceived barriers (accounting for 73% of the total) were being busy at work, forgetfulness and hand hygiene being not important. Before intervention only 23% of the staff (physicians and nurses) was performing hand hygiene. By the end of 6 weeks, the compliance was increased to 67% for nurses and 68% for physicians. **Conclusions:** There was a significant increase in adherence to hand hygiene practices, achieved through simple interventions. With more reinforcement of the interventions and monitoring, WHO benchmark for hand hygiene compliance (90%) can be achieved.

P32. Audit on Use of Biomarkers of Sepsis in the Elderly.

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Introduction: Sepsis is a leading cause of mortality in critically ill patients. Biomarkers to diagnose sepsis may allow early intervention, which although primarily supportive, can reduce the risk of death. Audit's aim was to determine which biomarkers of sepsis are being used in the diagnosis and management of Sepsis in the elderly. "Surviving Sepsis Campaign Guidance" was used as a standard. To diagnose Sepsis, early various inflammatory variables are used routinely including WBC, CRP and Procalcitonin. Serum lactate levels have been used as a biomarker for tissue hypoxia and anaerobic metabolism. All patients should have the aforementioned inflammatory variables checked to help support the diagnosis of sepsis.

Methodology: In a retrospective audit, 35 patients admitted with infection under the care of elderly between May and August 2016 were identified. Out of these only 23 had proven evidence of sepsis. Audit proforma was used to collect and analyze the data from Cerner. Data sheets were stored at a secure office in the Geriatric Department. **Results:** Patients' cohort were older with an average age of 83 years and 2/3rd of them were males. As expected, half of admissions were secondary to Aspiration pneumonia and Pneumonia and a quarter of them secondary to UTI. Multimorbidities commonly seen were HTN, DM, Stroke, CAD and Dementia. Only one patient went into septic shock. A third of the patients had raised

procalcitonin. In about approximately 85% of the patients CRP was elevated. WBC and lactate was raised in 60% of the patients. Most of the patients with raised procalcitonin had elevated lactate. One patient required intensive care admission with a diagnosis of aspiration pneumonia, raised WBC/CRP and a normal procalcitonin/lactate. 3 patients died secondary to aspiration/chest infection/bedsore and UTI; all 3 had elevated lactate and only one of them had raised procalcitonin. **Conclusions:** Our Audit has demonstrated that the most commonly used biomarkers are the WBC, CRP and Lactate, which is standard practice. More studies are needed to study the role of procalcitonin as a sole diagnostic marker in the elderly, currently advised to use in combination with the above in selected cases.

PP33. Acute Kidney Injury, are we doing right things in the first 24 hours.

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Background: One out of 5 admissions into hospital is associated with Acute Kidney injury (AKI). The global incidence of AKI is reported as 22% among hospitalized patients. AKI on admission is associated with increased length of stay, increased mortality, unplanned or longer ICU stays, increased risk of developing chronic renal failure and re-admissions. Up to 100,000 deaths are associated with AKI, out of which one fourth to one third are avoidable. It is reported that good care is provided in < 50% cases only.

Methods: Retrospective chart review was conducted to collect the data about patients with AKI using a data collection form which included demographic information, presenting complaints, initial investigations and management plan, complications of AKI and follow up.

Results: Out of 42 patients, AKI, as well as its recovery, was more prevalent in males (64%, n=27) than in females (36%, n=15). Majority of the patients (95%) were admitted through ER. 33% of the patients were aged between 71-90 years as compared to 14% in younger age group of 16-30 years. Pre-existing hypertension, diabetes mellitus and CKD were present in 67%, 55% and 30% of the patients respectively. 57% of patients had only once a day monitoring for fluid balance and vital signs examination. Out of necessary baseline investigations,

urine dipstick and US KUB were not performed in 36% and 45% patients respectively. 76% of patients had their medications reviewed and adjusted. 85% of patients had their Kidney functions and electrolytes monitored on daily basis. 23% of the patients ended up having dialysis. 37% developed pulmonary edema. AKI completely resolved in 43% of the patients only. **Conclusions:** There are some serious deficiencies in the recognition and management of patients with AKI. We have designed a quick checklist and AKI care bundle. We are working with nephrology department to finalize an AKI care pathway. Regular educational sessions will be conducted on the care of AKI. Educational session, AKI check list and care pathway will help in bridging the road towards improving management of AKI.

PP34. “Are we communicating properly?”: A comparison of handwritten and electronic discharge summary documentation”

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Background: Discharge summaries play a critical role in transition of care and patient safety. All documentation must be clear, accurate and legible. Traditionally discharge summaries are handwritten and information provided depends upon the level of detail, legibility and durability of carbon copies provided. With the launch of Cerner, electronic discharge summary (EDS) has been introduced. **Aim:** To compare handwritten discharge summaries with EDS and to determine if EDS is superior. **Methods:** A random sample of 50 handwritten and 50 EDS were selected. Completion rates for criteria of the discharge summary were analyzed. **Results:** The EDS is a superior form of discharge summary, significantly for admission details, co-morbidities, procedure details, investigation results, discharge medications and follow up plan (Table1). There are still areas to improve and to design a system that up to mark EDS are produced across the medical division. **Conclusion/Recommendation:** As new residents are recruited every year, training on using the electronic medical record system should be part of resident induction and repeated at regular intervals. This could promote better compliance in completing all domains in thorough detail. Members of the entire multidisciplinary team should provide detailed information regarding functional status at discharge.

Medical team along with Clinical pharmacist should provide details of any medication changes. Residents need to improve on providing information regarding investigations and follow up. Senior residents of medical teams should evaluate the discharge summary prior to patient discharge to ensure that all components of the document are complete and accurate. Regular auditing of discharge summaries should be done to check compliance and to identify areas for improvement.

Table. Comparison of hand-written versus electronic discharge summary (EDS).		
Component	Hand-written	EDS
Admission history	64%	100%
Co-morbidities	84%	93%
Procedure details	82%	95%
Investigations	68%	90%
Discharge medications	55%	95%
Follow-up plan	58%	90%

PP35. An audit of insulin needles disposal in patients with diabetes.

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Introduction: In Qatar, approximately 13% of the population has diabetes, with significant proportion of them being treated with insulin. Improperly disposed insulin needles can pose a health hazard to the public and waste workers. Patient education and regulations governing disposal of sharps can protect against this risk.

Methods: 102 consecutive insulin treated diabetes patients (pen device 96%, syringe 4%), who had a follow up with our diabetes team over the previous 5 month-period, were included. A telephone questionnaire regarding insulin needles disposal was conducted

Results: In this cohort (males 48%, females 52%), with an average age of 47 years, 13% had type 1, 80% had type 2, and 7% had gestational diabetes, with an average duration of diabetes of 10 years and insulin treatment of 4 years. Out of 102 patients, 82 patients (80%) disposed the needles directly into the house hold bin, while 20 patients (20%) collected them into a rigid wall, securely closed, containers- of them 18 (90%) subsequently disposed the containers into the bin, domestic bin- 15 (75%) and public bin- 3 (15%). Only 2 patients (10%) took the containers back to the hospital. Of the 102 patients, only 23 patients (23.4% confirmed receiving "safe needle disposal"

education, of them, 19 (82%) collected needles into the containers, whereas, only one patient (1.3%) of the remaining 79 patients (78.6%), who did not confirm receiving education, did collect into a container.

Conclusions: The audit clearly shows that patient education on sharp disposal, when provided, was very effective, with most patients collecting the needles into rigid wall containers, however, lack of the policy on safe sharp disposal led to inappropriate disposal of these containers in the majority of patients. In the light of the audit results, a policy governing insulin needles disposal is being prepared, to be implemented and later audited. Regular education to all patients need to be ensured.

PP36. Diabetes control in cardiac in-patients: A quality improvement project

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Introduction: DM is often not considered one of the primary problems inpatients admitted with acute MI or other problems. Glycemic control is likely to become unstable, DIGAMI 2 trial, A double blinded multicenter RCT, that dealt with DM in acute MI, with a total population of 1253 patients, that compared routine DM therapy throughout (control) vs. Insulin infusion then either insulin or standard treatment, with median 2.1 years Methods: We collected data of the diabetic and pre-diabetic new admissions in ward A in Heart Hospital over 2 weeks in 2.2015 No. of patients: 20 Average hospital stay: 4.3 days Average glucose for all readings: 12.1.% of readings above 10: 54.2%No. of readings < 5.0: 12 ,No. of readings < 3.9: 3% of readings out of our target: 61.4%. A formal lecture was presented on 20.4.2015 to all residents working in Heart Hospital at that time, some fellows, and some consultants **Results:** The total number studied is 24 patients, their average hospital stay is 4.2 days. The average blood glucose for all readings is 10.6, 43% of readings above 10 mmol/l. The number of readings below 5.0 mmol/l is two and another two with readings below 3.9 mmol/l. The percentage of readings out of our target is 44%. (Data for new admissions in ward A over 2 weeks, 1 week after the lecture). **Conclusions:** Emphasizing that achieving the target requires collaboration of efforts from diabetes educators, dietitians, and physicians' role.

PP37. Extent of overtesting of HbA1c in adult patients with diabetes in Qatar.

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Introduction: Frequent HbA1c monitoring is often needed for patients with variable glycemic control, receiving intensive insulin treatment, or needing tightly regulated control, among patient with diabetes frequent testing hba1c will add to the treatment burden of patients and health care costs, Moreover, excessive testing could prompt providers to over treat, either by intensifying treatment despite glycemic targets that are still at goal, or by failure to de-escalate treatment with stable, albeit low HbA1c levels, in this work we present the data result of the frequency of hba1c testing of 50 patients with diabetes. **Methods:** A retrospective analysis of data from two tertiary care hospitals in Qatar, Included individuals were randomly picked from the inpatient and outpatient setting. HbA1c testing frequency was measured retrospectively within 12 months from the latest measured HbA1c including the current encounter and classified as guideline recommended (≤ 2 times/year), frequent (3-4 times/year), and excessive (≥ 5 times/year). **Results:** Of 50 patients in the study cohort, HbA1c testing frequency was as per guidelines recommended in 58%, excessive in 30% and frequent in 12 %.

Conclusions: In this study of the observed patients more than 42% received too many HbA1c tests, a practice associated with potential overtreatment with hypoglycemic drugs. Excessive testing contributes to the growing problem of waste in healthcare and increased patient burden in diabetes management.

PP38. Are we mentoring our trainees? A mixed-methods study assessing current practice of mentoring across training programs at Hamad Medical Corporation

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Introduction: Mentoring plays a vital role in academic productivity, personal development, and career guidance for students, fellows, and junior faculty 1-5. A culture of mentoring is now spreading across residency and fellowship training programs in Hamad Medical

Corporation (HMC). Program leaders are aware of the benefits of mentoring and efforts are in progress. Mentoring provides a structured system for strengthening and assuring the continuity of organizational culture. However, there is insufficient knowledge about the current practice of mentoring at HMC training programs. **Methods:** We surveyed faculty and trainees in all training programs across HMC. They completed two web-based questionnaires (Trainees: 21 items; Faculty: 18 items) about their current experience, self-efficacy, and measures of improvement of the current practice of mentoring across training programs at HMC.

Results: 393 out of 650 (61%) faculty members, 187 out of 250 fellows (74%), and 405 out of 650 residents (62%) responded to the two surveys. Data showed that 74% of faculty members are currently mentors, 67% of residents and fellows reported that they currently have mentors. 61% of residents and 72% of fellows were assigned mentors by their departments. 86% of those who received training in mentoring are currently mentors while only 62% of those who have not are currently enrolled in mentoring relationship ($p < 0.01$). 72% of the current mentors have an established formal mentoring program (MP) in their department while only 29% of faculty are mentors with their departments not providing formal mentoring ($p < 0.05$). Qualitative assessment demonstrated a misconception between the actual meaning of mentors and supervisor among both faculty and trainees. There is great intention by the faculty to enroll in mentoring roles and great interest in receiving training in mentoring. Trainees suggested that the two areas to improve the current mentoring initiatives at their departments are to develop a structured MP and to train the mentors.

Conclusions: Based on the current study, there is misconception between supervision and mentoring. Developing structured MP and training both faculty and trainee in mentoring is recommended to improve the current practice of mentoring within the training programs at HMC.

V. Posters Presentation Abstracts (Theme: Case Reports)

PP 39. A rare thymoma originating as a left lower intrathoracic lesion.

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Introduction: Thymoma is a rare benign tumor of the anterior mediastinum, accounting 2-9% of all thymic neoplasms. It is occasionally known to extend into the chest cavity; however an extra mediastinal presentation is extremely rare. We present here the case of a patient who was found to have a large heterogenous mass located in the anterior mediastinum and left hemithorax. Histologic analysis after resection of the mass confirmed a type B1 thymoma. **Case Description:** The patient is a 64-year-old Indian lady who presented to the ER with sudden onset of non-exertional shortness of breath, for one day. Retrospective history reveals pain at the back of her neck and easy fatigability that worsens with exertion. She is known type II diabetic since 7 years, well controlled on oral hypoglycemic. Initial evaluation revealed normal vitals, examination and basic blood works. CXR, however, showed an ill-defined opacity in the left lower zone, silhouetting the left cardiac border. CT scan done for further evaluation demonstrated a large non-enhancing solid mass lesion occupying the area of the lingula measuring 6.3x8.2x5.4 cm in maximal transverse diameter. CT guided tru cut biopsy was therefore arranged and patient, clinically stable at this point, was discharged home after the procedure, with biopsy results to follow as outpatient. Two weeks later, however, the patient returned to the ED with worsening shortness of breath. Upon further questioning, it was found that the patient had been prescribed moxifloxacin in a private clinic, which made her symptoms worse. Review of the biopsy revealed reactive T-Cell lymphoid tissue, suggestive of thymoma. It was evident upon second presentation that the patient developed myasthenic crisis possibly precipitated by the antibiotics prescribed to her. She subsequently required MICU care where she was managed with plasmapheresis and steroids. After recovery she was referred to the thoracic surgeon for resection of her thymoma, which was done successfully resolving her symptoms entirely. **Conclusions:** This case demonstrates a rare presentation and location of a thymic mass in association with myasthenia gravis. Review of

literature confirms only two such cases where a thymolipoma was found occupying the right hemithorax.

PP40. Young adult with "Canon Ball" lung metastasis and unknown primary

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Extra skeletal Myxoid Chondrosarcoma (EMC) is a rare soft tissue sarcoma, which primarily occurs deep in extremities, especially in the skeletal muscle or tendon. Unusual locations include tongue, retroperitoneum, spine, intracranium, testis, inguinal region, synovium, mammary gland, labium and pleura, however no case of has been described the aggressive involvement of lung with multiple canon ball metastatic atypical chondromyxoid neoplasm with unknown primary. We hereby present a 38 year old Asian male patient initially presented for cough and occasional blood stained sputum with chest pain since few days, found to have multiple canon ball lung lesions which histopathologically suggestive of atypical chondro myxoid sarcoma and primary source remained to be unknown.

PP41. Lung transplantation in Cystic fibrosis patients with multi-drug resistant pseudomonas infection, the Qatar Experience

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Introduction: Cystic Fibrosis (CF) lung disease is the third most common indication for lung transplantation. Here we summarize the journey of our two advanced CF patients with chronic Multidrug Resistant (MDR) *Pseudomonas aeruginosa* (PSA) colonization for lung transplantation. **Background:** MDR *Pseudomonas* colonization is a relative contraindication for lung transplantation. **Case series:** Case 1: A 22-year old male having advanced CF related lung disease & pulmonary hypertension accompanied with CF related Diabetes and Chronic Hepatitis C virus infection of unknown source cured with sofosbuvir. Case 2: A 35-year old male with advanced CF related lung disease, pancreatic insufficiency, IgA nephropathy. Both of the cases had MDR *pseudomonas* colonization with frequent

exacerbation and dependent on oxygen and BIPAP due to respiratory failure and both of them rejected initially from an international center because of MDR *Pseudomonas* colonization. Both patients underwent successful bilateral lung transplant on November 2013 and May 2015 respectively at King Faisal University, Saudi Arabia. Both patients have good quality of life post transplant. (Table) First patient has mild reversible obstructive lung disease secondary to diseased donated lung & now controlled on asthma treatment only. Second patient has pan-sensitive *pseudomonas* in transplanted lung not requiring any treatment. **Discussion:** Pre-transplant colonization with PSA is a significant risk factor for infection after transplant accounting for 25% of post transplant pneumonias. The post-transplant survival of patients colonized with pan-resistant *Pseudomonas* before transplant is similar to those with sensitive bacteria at 1 year (88.6% vs 96.6%), worse at 3 years (63.2% vs. 90.7%) and comparatively better at 5 years (58.3% vs. 85.6%) respectively with P-value 0.016, evidenced by two-center study in which 103 CF patients post-LT were evaluated. Although survival was reduced in CF patients with pan resistant bacteria compared with patients with susceptible organisms, the authors did not believe that pan-resistance was a contraindication to LT. The average mortality with pan-resistant bacteria is comparable with that of the entire lung transplant population. **Conclusions:** Patients should not be denied transplant candidacy because of pan-resistant *Pseudomonas*.

Table. Spirometry Pre and Post-transplant in the 2 cases				
Parameters	Case 1		Case 2	
	Pre	Post	Pre	Post
FVC	1.61 (36%)	3.55 (76%)	1.25 (29%)	4.35 (102%)
FEV1	1.27 (33%)	2.31 (57%)	0.59 (20%)	3.67 (126%)
FEV1/FVC	79	65	47	84

PP42. Pulmonary embolism in young adult secondary to Protein C deficiency

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Pulmonary embolism (PE) is often thought to inflict only the elderly, the infirm, people with multiple co-morbidity or those who are predisposed to it through surgery, certain

medications like OCP or major traumas. Unbeknownst to many of the general population and even sometimes overlooked by some physicians is the entity of PE in young and otherwise healthy adults. It is a rare occurrence in young adults and usually warrants a deeper investigation of the cause. A 23 year old, Indian male presents to the ER with hemoptysis, SOB and right sided chest pain for 2 days duration. He was hemodynamically stable but he had tachypnea and tachycardia. An urgent CT thorax showed right sided segmental pulmonary embolism with filling defect and bedside ECHO revealed RV dysfunction with right atrial mass/thrombus. Patient was heparinized and bridged with warfarin. He was discharged on warfarin and followed up in the medical clinic, where a full autoimmune workup and thrombophilia work up was sent. Patient was found to have low levels of protein C [43.4, 48.5 (N 70-140)] consistently on 2 readings. He was therefore diagnosed with protein C deficiency leading to pulmonary embolism. Prevalence of protein C deficiency is around 2-4% among all VTE events, making it a rare occurrence. We can learn from this case report that when a young adult presents with PE, it is essential that we investigate even some of the more rare causes.

PP43. Post-gastric botox causing euglycemic ketoacidosis

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True normoglycemic diabetic ketoacidosis (when the blood glucose is below 200 mg/dl) is relatively uncommon and in type 2 diabetes mellitus (T2DM) can be caused by starvation due to different reason, like prolonged fasting, malnutrition, bariatric gastric surgery, chronic alcohol intake, Atkins diet, pregnancy and eating disorder. It is also encountered following the endoscopic procedure using gastric botox injection as part of non-surgical bariatric procedure for losing weight in obese people; this procedure can be unsafe in diabetic patients as it is difficult to achieve glycemic control due to unpredicted gastric emptying time or the ability of the individual to eat well. We report a case with normoglycemic diabetic ketoacidosis precipitated by starvation post gastric botox injection in a patient with T2DM. On presentation patient was acidotic with positive blood ketones and a blood glucose levels of 150 mg/dl,

after correction of acidosis the patient was discharged, patient was readmitted after one week with frank acidosis secondary to repeated episodes of vomiting and inability to eat. This case highlights the need to assess the acid-based status even with normal blood glucose levels, especially in those who have received a gastric botox injection resulting in poor oral intake.

PP44. Atypical presentation of pheochromocytoma as meningitis: Could this be prevented?

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Introduction: Pheochromocytomas are rare endocrine tumors of chromaffin cells, which secrete biogenic amines (norepinephrine, epinephrine and dopamine). Diagnosis of these tumors can be delayed if high index of suspicion is not present, especially if presenting symptoms are out of the ordinary, like in our patient. **Case Description:** 65-year-old man with past medical history of hypertension, panic attacks and motor vehicle accident came in to emergency room with fever and confusion for 2 hours. This was associated with new onset headache, nausea and vomiting. Vitals showed temperature of 103.1 F, BP of 140/88, pulse of 154 and RR of 24. Physical examination was insignificant. Labs indicated leukocytosis and hyperglycemia. Head and abdominal CT were unchanged in comparison with imaging obtained few months ago: showing left temporal lobe encephalomalacia and 4.2 centimeter mass in the left retroperitoneum, retrospectively. Upon admission, patient developed new onset tonic clonic seizure. Meningitis was suspected, but septic workup including lumbar puncture was negative. Hospital course was significant for episodic hypertensive urgencies associated with unprovoked nervousness and Pheochromocytoma was suspected. Blood metanephrine and normetanephrine were elevated. MIBG scan guided surgery and the patient had uneventful recovery. **Discussion and Conclusions:** The classic triad of symptoms in patients with a pheochromocytoma consists of episodic headache, sweating, tachycardia (particularly in tumors that produce epinephrine) and paroxysmal hypertension (in about one half of the patients). The uniqueness of presentation of our patient with meningitis-like symptoms and hyperglycemia (with no history of diabetes) make this case a noteworthy educational prospect. We propose that the patient's anxiety and headache were attributed to the adrenergic surge from the

functioning tumor. This is supported by the fact that patient's symptoms improved after surgical removal of the tumor and pathology finding. His seizure activity was attributed to the episodic uncontrolled hypertension and/or encephalomalacia from the traumatic brain injury. Patient was known to have retroperitoneal mass from previous imaging with no biochemical evaluation. American association of clinical endocrinologists (AACE) recommends biochemical and imaging reevaluation of incidentalomas in 3-6 months and then annually for 1-2 years. This could lead to early diagnosis and possibly prevention of serious complication.

PP45. A case report of a patient with rare complications of Graves' disease

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Introduction: Graves' disease (GD) has common and rare manifestations due to either hyperthyroidism or autoimmune mechanism. The aim is to present a patient with rare complications of GD. **Methods:** We describe a 35-year-old female who presented with GD associated with pancytopenia, raised liver enzymes and pulmonary hypertension (PHT). **Results:** A 35-year-old woman presented with breathlessness and generalized edema for 2 weeks. She had diffuse goiter with audible bruit and mild exophthalmos. Laboratory investigations showed hyperthyroidism (TSH: <0.01 mIU/L, FT4: 54.69 pmol/L, FT3: >46.08 pmol/L), pancytopenia (White blood cells (WBC): $2.9 \times 10^3/\mu\text{L}$, Hemoglobin: 8.4 gm/dL, Platelets: $113 \times 10^3/\mu\text{L}$), high bilirubin (41.7 $\mu\text{mol/L}$, mainly direct bilirubin), raised alkaline phosphatase (ALP: 360 U/L, mainly the liver fraction) and Gamma-glutamyl transferase (GGT: 128 U/L) with normal Alanine Aminotransferase and Aspartate Aminotransferase. Thyroid uptake scan was consistent with Graves' disease. Echo showed high right ventricular systolic pressure (RVSP): 60.16 mmHg. She was started on Lugol's iodine and dexamethasone. Hematological workup did not show specific cause for pancytopenia and abdominal ultrasound was normal, so she was started on carbimazole. Antimitochondrial antibody, hepatitis viral serology and HIV were negative. Workup for secondary causes of PHT was negative. When hyperthyroidism resolved after 3 months, her WBC and platelets were normal with improvement of hemoglobin level, her bilirubin was

normal with much improvement of ALP (311 U/L) and GGT (72 U/L). Repeated Echo showed improvement of RVSP: 52.64 mmHg. **Conclusions:** It is the first single case of GD to be reported with these three rare manifestations; pancytopenia, cholestatic liver injury and PHT. After exclusion of other causes of pancytopenia, anti-thyroid drugs are the treatment of choice and pancytopenia should improve with euthyroidism. ALP is the commonest reported among liver enzymes to be raised in GD patients (25% - 64%) and it usually takes several months to be normal after euthyroidism. PHT could be related to endothelial damage, high cardiac output or increased metabolism of the intrinsic vasodilators. PHT usually improves with euthyroidism, however it may take up to 14 months for full recovery.

PP46. Necrolytic acral erythema: Case report and review of literature

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Background: Necrolytic acral erythema (NAE) is a rare, but pathognomonic manifestation of hepatitis C virus (HCV) infection, all patients to date with this skin entity are associated with hepatitis C. It shows clinical and histopathologic similarity to Necrolytic erythema's which are related to nutrient deficiencies but it is distinguished from them by its unique acral location, absence of periorificial and mucosal lesions and universal association with HCV infection. **Case Description:** We describe a HCV-positive adult Egyptian male with necrolytic acral erythema.

Conclusions: Necrolytic acral erythema is considered as a cutaneous sign of (HCV) infection and since its initial description in Egypt in 1996 by EL Darotouti and Abu El Ela, several cases were reported. The increased awareness of this dermatological entity is very important not only for its treatment but also for early recognition and treatment of asymptomatic patients with (HCV) infection.

PP47. Longstanding dermatitis in an elderly hypertensive woman.

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Introduction: Dermatitis is a most common skin disorder and cause of pruritus in the elderly. The frequency of adverse reactions to drugs increases with age. Up to 3% to 6% of all hospital admissions are the result of adverse drug reactions. We report a case of an elderly lady with longstanding hypertension on hydralazine who presented with symptoms of dermatitis. **Case description:** An elderly lady was admitted in May 2016 with ESBL-E-Coli urinary tract infection. She had multimorbidities including longstanding skin hyperpigmentation and eczema. Comprehensive geriatric assessment was done and skin examination revealed diffuse blackish discoloration/hyperpigmentation with malar type rash on the face and generalized exfoliative eczema and lichenification with areas of aggressive excoriation marks. Skin biopsy showed spongiform dermatitis sometimes noted to be associated with drug reactions. She was on hydralazine for many years, it was stopped during admission. Soothing Vaseline and urea cream, steroid creams plus Hydroxyzine were prescribed. There was definite improvement of her skin symptoms by the time she was discharged home. **Discussion:** Hydralazine is a vasodilator used as an adjunct in the treatment of Hypertension. Dermatitis is a common manifestation of drug-induced lupus with variable frequency of 10% to 34%. An important differentiating characteristic of drug-induced lupus is occasional generalized distribution with involvement of the lower extremities, which is lacking in idiopathic lupus. Additionally, more common nonspecific cutaneous eruptions with drug-induced lupus including purpura, erythema nodosum, and livedo reticularis are to be distinguished from the more typical idiopathic lupus presentations with malar rash, discoid lesions, mucosal ulcerations, alopecia, and raynaud's. There are no definitive tests or criteria for the diagnosis of drug-induced lupus. Anti-histone antibodies are strongly associated with some forms of drug-induced lupus. Spontaneous resolution of the clinical manifestations of the disease, typically within several weeks up to several months after the offending drug has been discontinued. Non-pharmacological measures such as photo protection

and smoking cessation are advised. **Conclusions:** Cutaneous drug reactions are common in the elderly. Detailed medication review to identify the offending drug is required. Hydralazine can cause dermatitis with variable frequency. Spontaneous resolution of clinical manifestations occurs after discontinuation of offending drug.

PP48. Icodextrin induce severe angiodema and skin rash with allergic peritonitis: First case from the state of Qatar

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We describe a young patient with severe allergic reaction, manifested with periorbital and facial swelling as well as maculopapular rash due to icodextrin 7.5% peritoneal dialysis fluid, and later on associated with sterile allergic peritonitis required treatment with steroid in Emergency department. We are reporting this case as this is the first case occurrence in the State of Qatar. To our knowledge there are no reported cases with such severe allergic reaction in literature.

PP49. Massive Pleural Empyema in a Healthy Middle Aged Man

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Case history: A 38-year-old Bangladeshi man presented to the emergency room with a 15-day history of increasing shortness of breath at rest, exacerbated by minimal exertion, associated PND, orthopnea, fever, a dry cough and central chest pain that occurred with coughing. Over the past 2 months he had a decreased appetite and weight loss of 10-15kgs. He was a smoker for 5-years, and denied alcohol consumption, sick contacts or a history of tuberculosis. On physical exam, he had decreased breath sounds, dullness to percussion on the left, and bronchial breathing bilaterally. A CXR confirmed a large effusion covering almost the entire left lung field, associated with a shift of the mediastinum to the right. A chest tube was placed, and 1.8L of foul smelling creamy pus. was drained and a follow up chest X-ray was performed. He was started empirically on broad spectrum antibiotics. Evaluation of the drained fluid by Gram stain was noted to be polymicrobial and cultures

were positive for streptococcus constellatus. Lab results showed thrombocytosis, leukocytosis and elevated inflammatory markers CRP (201) and procalcitonin (3.84). There was evidence of impending septicemia and end organ damage, including an increase in PT, INR, elevated liver enzymes, bilirubin and lactate (1.8). CT chest showed no loculation, but a bilateral pneumonia with effusion on the right. The effusion was tapped and showed clear fluid. Workup for tuberculosis and immunocompromising infections, including hepatitis B and C, and HIV was found to be negative. Patient drained freely for 5 days, 3 days of intrapleural TPA/DNAse and frequent saline flushing were given, drained more than 4L and chest expanded (figure 4) He had an uneventful full recovery. No surgical intervention required. **Discussion:** Risk factors associated with pleural empyema, include alcoholism, intravenous drug use, HIV infection, and pulmonary disease. 50 % of cases are a complication of pneumonia, while 25 % of cases are associated with trauma, thoracic surgery or esophageal perforation. Presentation of this condition in a previously healthy, relatively young man with no comorbidities or immunocompromising conditions is atypical. However, this may be increasing. Thorough investigation is required to identify the etiology. Our patient recovered without complications.

PP50. Primary pacemaker generator pocket and lead infection with Burkholderia Cepacia

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In recent years, the number of CEID implantations has increased dramatically. Advances in medical technologies, aging of the general population, the rise in clinical indications and expanded Medicare coverage for these devices contributed to this increase. Infection is considered to be one of the serious complications of CEIDs implantation, which carry a significant risk for mortality and morbidity. Although Staphylococci species account for the majority of infections, other bacteria have been implicated as causative agents of this condition. We here in describe a patient with primary pacemaker generator pocket and lead infection due to Burkholderia cepacia. To our knowledge, this is only the second case of B. cepacia related CIED infection reported in the literature.

PP51. Survival of *Achromobacter xylosoxidans* native tricuspid valve endocarditis as a complication of intravenous drug abuse.

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Introduction: Infective endocarditis due to *Achromobacter xylosoxidans* (AX), a gram negative rod, is rare and most frequently reported with prosthetic devices and immunocompromised status. It is usually fatal unless treated abruptly with both surgical and antibiotic therapy. This case of successfully treated AX endocarditis occurred on a native tricuspid valve as a complication of Intravenous drug abuse (IVDA).

Case Description: 34-year-old gentleman with a history of IVDA presented with subjective fever, gradual onset of dyspnea, orthopnea and lower extremity swelling over several weeks. Physical examination was remarkable for bilateral basal crackles, cardiac murmur, +2 pitting edema and mild splenomegaly. Blood and urine cultures were positive for AX. Echocardiogram showed vegetation and suggested infective endocarditis. Patient was treated with meropenem. Two weeks later, patient was readmitted for similar symptoms. Repeated cultures showed resistance, so antibiotics were switched to piperacillin-tazobactam based on the new sensitivities. After a week of documented negative blood cultures, the patient had a bioprosthetic tricuspid valve implantation with uneventful recovery.

Discussion: AX is a rare cause of bacterial endocarditis, which usually affects patients with malignancies or cardiovascular diseases and only 13 cases have been reported in the literature. Our patient met Duke criteria for endocarditis, which was complicated by acute heart and renal failures. To our knowledge, tricuspid AX endocarditis is not reported in the literature.

Conclusions: AX is a rare but lethal cause of bacterial endocarditis, which requires prompt consideration of surgical as well as medical therapies.

PP52. An age old stroke mimic: A case of neuroglycopenia

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Introduction: In elderly patients hypoglycemia may imitate nearly every neurological symptom. In type 2 diabetes (T2DM), progressive insulin deficiency, longer duration of diabetes and tight glycemic control increase the risk of hypoglycemia as much as type 1 diabetes. The neuroglycopenic syndrome is frequently overlooked or misinterpreted as cerebral ischemia. We report a case of an elderly lady with Insulin treated Type 2 Diabetes Mellitus who presented with stroke like symptoms. **Case presentation:** A 75-year-old lady with a background history of insulin treated T2DM, hypertension and Hypothyroidism was admitted with left sided weakness and altered mental sensorium. She was found to have blood glucose-20mg/dl (1.1 mmol/mmol). On arrival, she was drowsy responding only to painful stimuli with left sided hemiparesis. Rest of systemic examination was unremarkable. A brain CT/CT Angiogram/CT Perfusion/MRI scan were unremarkable. Hypoglycemia was treated with continuous infusions of dextrose and was started on nasogastric tube feeding due to low conscious levels. She was discharged after five weeks with minimal residual weakness. Insulin was stopped and community blood glucose monitoring was arranged. **Discussion:** Ageing modifies the cognitive, symptomatic, and counter-regulatory hormonal responses to hypoglycemia. Severe hypoglycemia has a considerable impact on wellbeing, productivity and quality of life in old people with diabetes. Drug-induced (Insulin/Insulin Secretagogue) hypoglycemia is the most common cause of hypoglycemia particularly in the elderly. Approximately 90% of all patients who receive insulin have experienced hypoglycemic episodes. Neuroglycopenic symptoms of hypoglycemia include weakness, confusion, personality changes, seizures, and transient memory loss. Severe hypoglycemia may present with altered mental state or coma and occasionally hemiparesis or quadriparesis and mimic a stroke. Hypoglycemia is a true medical emergency which requires prompt recognition and treatment to prevent organ and brain damage. Treatment invariably is replacing glucose and stopping the offending drug. **Conclusions:** A timely and accurate diagnosis

would expedite correct treatment and limit neuronal injury in the early stage, when changes are potentially reversible. Patient training and treatment of the early symptoms of hypoglycemia may prevent the occurrence of further severe hypoglycemia and decrease the rate of hospitalization, mortality and cognitive impairment that directly affects the independence and functionality of older persons.

PP53. Anti-NMDA receptor encephalitis: A masquerade ball of neuropsychiatric symptoms

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Introduction: Anti-NMDA receptor encephalitis, a form of autoimmune encephalitis, is a rare disease with both diagnostic and therapeutic challenges. We hereby present an interesting case of anti-NMDA receptor encephalitis, which is one of the first to be diagnosed in Qatar. **Case Report:** Patient is a 39 years old female who presented with fever, headache and two episodes of generalized tonic clonic seizures. CT Brain and MRI brain (done later) were unremarkable. CSF showed lymphocytic pleocytosis and raised proteins. Bacteriologic, fungal and viral testing was negative. She was initially treated with IV antibiotics and then with anti-tuberculous medications. During her course at the hospital, she developed neuropsychiatric symptoms and autonomic instability, which raised the suspicion of autoimmune encephalitis. CSF was positive for anti-NMDA receptor antibodies. Rest of the paraneoplastic antibody screen and whole body imaging (CT thorax, abdomen and pelvis) to detect any tumor was negative. Patient was started on steroids and intravenous immunoglobulins (IVIG) to which she was unresponsive. Patient was then put on cyclophosphamide and rituximab, which brought up remarkable recovery. Her care was taken over by the rehabilitation center and was discharged weeks later. She continued to follow up with us. She doesn't have any neuro-cognitive impairment 1 year post her diagnosis of anti-NMDA receptor encephalitis. **Discussion:** Anti-NMDA receptor encephalitis is a rare autoimmune disorder in which antibodies against the glutamate receptor are formed in response to a stimulus, which leads to a complex of neuro-psychiatric signs and symptoms during the course of the disease. Anti-NMDA receptor encephalitis is difficult to suspect at first presentation but as the disease unfolds itself sequentially, the suspicion

may arise. Hadn't it been for the psychiatric symptoms, autonomic instability and muscular rigidity that the patient developed, we perhaps would have wasted more time in suspecting anti-NMDA receptor encephalitis. We recommend all patients presenting with encephalitic picture, anti-NMDA receptor encephalitis should be considered especially when the patient is not responding to the treatments directed against other diagnoses like viral encephalitis.

PP54. Large refractory colonic polyps: shifting from surgical to endoscopic management. A case report of the first endoscopic treatment of large colonic polypoid lesion in Qatar.

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Introduction: Large flat polyps colorectal lesions greater than 3 cm may occur in as many as 5% of adults undergoing colonoscopy. Colonoscopic polypectomy plays a major role in preventing colo-rectal cancer as 90% of CRC arise from adenomatous polyps. Endoscopic Mucosal Resection (EMR) has become an established therapeutic option for premalignant and early-stage GI malignancies, particularly in the esophagus and colon in most of endoscopy units worldwide. We are reporting the first successful EMR in Qatar which constitutes an important milestone in endoscopic management that can shift our practice in the foreseen future. **Case Presentation:** A 53-year-old gentleman was referred for colonoscopy because of a short history of intermittent bleeding per rectum that was not associated with abdominal pain, recent change in bowel habits or weight loss. His colonoscopy revealed a large polypoidal rectal mass lesion in addition to another 5 small colonic polyps, which were removed by polypectomy. The rectal lesion was biopsied only in the first colonoscopy in order to roll out invasive malignancy. Then the patient underwent another colonoscopy to remove the rectal polyp after it turned to be tubule-villous adenoma by histopathology. Injection-assisted EMR was used in this case because it is the typical technique used in colon and does not require specialized kits. The procedure started with injection of Adrenaline into the submucosal space under the lesion creating a safety cushion. The cushion lifted the lesion, facilitating capture and removal by using a snare while minimizing mechanical or electrocautery damage to the

deeper layers of the colon. The lesion was then removed in piecemeal fashion completely. Argon plasma coagulation then applied to the edges of the resected mucosa. There were no intra-procedural bleeding or perforations. The patient was discharged in good condition on the same day with a close follow up for late complications and histopathology. **Conclusions:** Endoscopic management by EMR at an appropriately experienced and resourced tertiary center should be considered the first line of therapy for most patients with GI lesions. We hope the success of this case to pave the way to change our practice in shifting the management of such lesions from surgery to day-care endotherapy.

PP55. A case report on tube feeding dilemma in decompensated liver disease.

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Introduction: Malnutrition in patients with cirrhosis leads to increased morbidity and mortality rates. Enteral nutrition by means of oral nutritional supplements and tube feeding offers the possibility to increase or to ensure nutrient intake in case of insufficient oral food intake. PEG tube placements are generally considered to be contraindicated in decompensated liver disease. We report a case of decompensated liver disease who presented with infection at the PEG tube site eventually requiring removal of the tube. NG tube was inserted instead of replacement of PEG. **Case Presentation:** A 72 years old gentleman who has a background history of hypoglycemic brain injury with PEG and Tracheostomy tubes in-situ was admitted to HGH with abdominal distension and bloody/purulent discharge around the PEG tube site. An ultrasound abdomen revealed liver cirrhosis, and moderate ascites. Culture from the wound site grew MSSA. Patient was treated with IV cefazolin for 14 days. However, scanty discharge from the PEG site continued and repeat ultrasound showed 24mls of fluid collection around the PEG site. Therefore, it was prudent to remove the PEG endoscopically. PEG replacement was not an option in view of increased risk of complications and therefore an alternative option of NG tube was inserted. Repeat wound cultures also demonstrated growth of carbapenem resistant pseudomonas. Patient was also treated with 5 days of ciprofloxacin via NG tube.

Following this, complete resolution of symptoms was noted with good wound healing. Enteral tube (NG) feeding was continued without any complications. **Discussion:** In patients with cirrhosis, tube feeding improves nutritional status and liver function, reduces the rate of complications and prolongs survival. Relative contraindications¹ to PEG placement include patients with cirrhosis, ascites, impairment of the coagulation system and porto-systemic collateral circulation due to portal hypertension. Ascites adds technical difficulties and the risk for potential complications such as impaired tract formation and healing, re-accumulation and catheter dislodgement, leakage of ascites, increased risk of bacterial peritonitis² and bleeding. **Conclusions:** Benefit to risk ratio of PEG placement be considered on an individual basis in cirrhotic patients. Alternatively, placement of nasogastric/nasojejuno-stomy tubes should be considered in patients who have contraindications to PEG insertion.

PP56. Plasmapheresis an effective treatment modality for hypertriglyceridemia induced Acute pancreatitis

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Case Report: A man in his early 30s with previously two episodes of acute pancreatitis, presented to the A/E with severe abdominal pain that proved to be a third attack of acute pancreatitis, this time with a notably high serum triglyceride level of 62 mmol/l, a level (to the authors knowledge) unheard of in the state of Qatar before. Dramatic improvement only took place after plasmapheresis was implemented. Although with no clear guidelines to govern the use of plasmapheresis as a treatment in hypertriglyceridemia induced acute pancreatitis, and the absence of any studies to assess its efficacy, we believe that multiple reported cases of its success to treat patients with high serum triglycerides induced pancreatitis when other modalities fail should open the door for larger randomized controlled studies not only to assess its efficacy as a treatment modality but also to introduce new guidelines for its use. **Discussion:** Only after biliary and alcoholic pancreatitis, High serum triglyceride induced acute pancreatitis remains one of the most commonly encountered types of acute pancreatitis, it is estimated that 15-20 % of patients referred to lipid clinics will end up with an episode of acute pancreatitis

attributed to their high triglycerides profile, treatment modalities are many including but not limited to: dietary modification measures, insulin and wide spectrum of lipid lowering agents, yet the most interesting and promising measure remains plasmapheresis with multiple studies supporting its efficacy in managing cases with very high levels of triglycerides, nevertheless the lack of multicenter randomized controlled trials to objectively assess benefits and risks of this invasive measure remains a limiting factor to implementing it at a wider scale. Patient had significant improvement in his condition. During his hospital stay he had one episode of hypocalcemia corrected by IV Ca gluconate and spiking fever despite negative septic work up managed successfully by antibiotics. Plasmapheresis shows promise as a single most effective measure to correct severe hypertriglyceridemia induced pancreatitis. **Conclusions:** Larger scale studies are needed to support the evidence derived from case reports and series regarding the safety and efficacy of plasmapheresis in pancreatitis patients in the setting of familial hypertriglyceridemia.

PP57. Bacillary angiomatosis in an immunocompetent patient: The first case reported in the gulf area.

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Backgrounds: Bacillary Angiomatosis (BA) is an unusual systemic vascular proliferation seen predominantly in patients with acquired immunodeficiency syndrome. It is a newly recognized disease. The vascular lesions are probably due to infection with a *Bartonella henselae* gram negative bacilli which can be demonstrated in tissue sections with Warthin-Starry stain and electron microscopy. Bacillary Angiomatosis (BA) clinically is most often a papulo-nodular lesions resembling angioma, pyogenic granuloma and Kaposi's sarcoma. The disease is usually response well to antibiotic therapy. **Case Report:** We are reporting a case of Bacillary angiomatosis in Qatar in a healthy person without HIV infection as an additional case of such a very rare disease. **Conclusions:** We showed the presence of bacillary angiomatosis in an immunocompetent patient. Bacillary angiomatosis should be considered a differential diagnosis in immunocompetent as well as with AIDS patients presenting with cutaneous angioma-like lesions. It is essential to start treatment as soon as possible and it

effectively treated with inexpensive antibiotics, undiagnosed and/or untreated bacillary angiomatosis may lead to overwhelming disseminated infection and death.

PP58. New onset hallucinations with Mirtazapine: a case report.

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Introduction: Mirtazapine is an antidepressant commonly used and considered safe in the elderly. **Case Presentation:** An 86 year old female was admitted with complaints of poor oral intake. She was very frail and weighed 23 kilos. She was malnourished and suffering from hypoalbuminemia and electrolyte abnormalities. Her evaluation did not reveal an organic cause for weight loss. Her cognition was intact. She was started on mirtazapine 7.5 mg for depression and received 2 doses. During the second night, she was unable to sleep and started having visual hallucinations. The hallucinations were described as people in the wall, boxes, and cars coming from the window to hit her. Subsequently Mirtazapine was discontinued and hallucinations stopped 48 hours after the last dose. **Discussion:** Mirtazapine is a tetracyclic antidepressant with serotonergic and noradrenergic activity. Peak plasma concentrations are reached within 2.2 to 3.1 hours after single oral doses of 15 to 75mg. Mirtazapine is extensively metabolised in the liver. Protein binding is 85%. The decision to treat with mirtazapine is also based on its side effect profile. Somnolence happens in 50 % of people and weight gain in 15% of patients Therefore mirtazapine is commonly used to treat depression in patients with concomitant insomnia and anorexia. The relative tolerability of mirtazapine makes it a first-line medication for many elderly with major depression. However there have been reports of visual and auditory hallucinations and insomnia occurring with the use of mirtazapine, which could be related to increase in dopamine levels in the frontal cortex. In our patient, hypoalbuminemia related to malnutrition and low protein binding could also be a factor as more free drug will be available to enter the CNS. Although she was started at half the adult dose, it may still have been high for her due to her low weight. Per the Naranjo criteria, Mirtazapine was determined as the probable cause of hallucination in this case. **Conclusions:** Mirtazapine is a relatively safe drug to use

in elderly, but one needs to be cautious when starting the drug or increasing the dose, especially in malnourished patients.

P59. First case of Babesiosis in Qatar.

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Introduction: Babesiosis, caused by infection with parasites of the genus *Babesia*. The disease is transmitted by ixodid ticks to vertebrate hosts. clinical manifestation of babesiosis varies ranging from asymptomatic infection, a mild-to-moderate illness, to a severe disease mostly seen in immunosuppressed individuals. Definitive diagnosis of babesial infection generally is made by microscopic identification of the organism on Giemsa or Wright stains of thick and thin blood smears. Two commonly used antimicrobial regimens are highly effective, the combination of atovaquone and azithromycin and the combination of clindamycin and quinine. Literature search revealed no reported case of human babesiosis from the Arabian Gulf countries. Here we report a case of Babesiosis. **Case presentation:** A 76-year-old male, American but originally Indian was admitted to Hamad General Hospital in the summer of 2013. He was a transit passenger from USA to India. While in the airport he developed drowsiness for which he was taken to emergency where he found to have atrial fibrillation which was reverted. Then he developed irritability and respiratory distress for which he was intubated and mechanically ventilated. The patient reported seven days history of fever and chills. He had no history of cough, shortness of breath, or chest pain. His past history included diabetes mellitus and hypertension for which he was maintained on metformin, losartan and aspirin. Physical examination on presentation revealed a confused and irritable patient. Blood pressure 155/111 mm Hg, heart rate 167/minutes, and respiratory rate 35/minute. His chest examination revealed bilateral basal crepitations, otherwise examination was unremarkable. Investigation revealed white blood cells 6.2 x 10⁹/L, hemoglobin 12.0 gm/dL, platelets 61.0 x 10⁹/L, lactic acid 3.2, AST 149 IU/L, ALT 84 IU/L, alkaline phosphatase 40 U/L, bilirubin 57 µmol/dL, blood glucose

11.3 mmol/dL, serum creatinine 151 µmol/dL, procalcitonin 3.0 µg/dL, prothrombin time 13.1 seconds, partial thromboplastin time 26.9 seconds and D-Dimer 15.15 mg/L. Blood and urine cultures were negative. Chest radiograph, ultrasound of abdomen and computerized tomographic scan of head were normal. Echocardiogram revealed impairment of left ventricular function with an ejection fraction of 40%. Blood film revealed normochromic red blood cells with anisocytosis and thrombocytopenia. Many RBC were infected with babesia parasites (26%) with many extracellular parasites. He was treated with intravenous clindamycin and quinine, and exchange transfusion was planned, however he rapidly deteriorated with the development of multisystem failure and he died two days after admission. **Conclusions:** We report this case to alert physicians working in our area to this condition since we have many people working in our country coming from countries where the disease is common. Keeping a high index of suspicion when these people develop a compatible clinical condition and performing the correct tests will ensure an early diagnosis and possibly better outcome.

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