Effect of Passive Leg Raise during Cardiopulmonary Resuscitation on Carotid Blood Flow

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Introduction: A high-quality cardiopulmonary resuscitation (CPR) is the cornerstone to improve the survival from cardiac arrest. However, even in patients whom return of spontaneous circulation is attained with quality CPR, the neurological outcomes are often poor due to prolonged cerebral ischemia. Lifting the legs passively from the horizontal plane in a lying subject obviously induces a gravitational transfer of blood from the lower part of the body toward the central circulatory compartment. A study conducted by Axelsson et al. showed that passive leg raise (PLR) during CPR appears to increase partial pressure of end-tidal carbon dioxide. Our study is to assess the effect of PLR during CPR on carotid blood flow using duplex sonography.

Methods: The study is a prospective interventional study which was conducted in the emergency medicine department of BMH, Calicut, on 16 subjects presented with cardiac arrest. Peak systolic velocity was measured before and after the PLR using duplex sonography at 1-min interval. Statistical significance of data collected is calculated using paired t-test. Results: The present study included a total of 16 subjects. After paired t-test, the value of t is 9.186 and P < 0.00001. Conclusion: The present study, with a limited number of subjects, has shown that PLR during CPR produces a statistically significant improvement in carotid blood flow. Larger studies are required to establish that this rise in carotid blood flow improves the neurological outcome in postcardiac arrest patients.

Middle East Respiratory Syndrome Coronavirus Profile in Qatar: A 7-year Retrospective Study

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Introduction: A deadly zoonotic Middle East respiratory syndrome coronavirus (MERS-CoV) has emerged over the last 7 years in the Arabian Peninsula. The objectives of this study were to identify the clinical and epidemiological characteristics and the clinical outcome of MERS-CoV infection in Qatar.

Methods: The was a retrospective observational study of all laboratory-confirmed cases of MERS-CoV infection conducted at main seven hospitals in the State of Qatar from January 2012 to April 2018. We used the Fast Track diagnostics real-time reverse-transcription polymerase chain reaction, targeting the upe and ORF1a genes, respectively. Results: The mean annual incidence was 1.7 per 1,000,000 person-years. Among the 24 confirmed cases of MERS-CoV, there were 23 males with a median age of 52 years. Fifty percent of the cases were Qatari and 42% reside in the same constrict. Sixty-seven percent of the cases had contact with camels, and 21% had human-to-human contact. Thirty-eight percent had travel history within 2 weeks of symptoms onset to the Kingdom of Saudi Arabia. Fifty percent were smokers and 42% had comorbidities. The median symptoms duration was 4.5 days. Most of the patients presented with flu-like symptoms. Thirteen (45%) patients developed severe sepsis with multiorgan failure and needed intensive care unit admission. Thirty-three percent of all patients died. The rest of patients had recovered from the infection and discharged home. Conclusion: MERS-CoV infection is a rare infection in the State of Qatar, seen in both Qataris and expatriates with and without travel history. The infection in patients with comorbidities carries high mortality.

Cost-effectiveness of Morphine versus Fentanyl in Managing Ventilated Neonates with Respiratory Distress Syndrome in the Intensive Care Setting

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Introduction: The objective of this study was to conduct a clinical and economic analysis of morphine versus fentanyl in ventilated neonates with respiratory distress syndrome (RDS).
Methods: A comparative retrospective cost-effectiveness study was conducted to evaluate 126 critically ill neonates receiving morphine ($n=63$) versus fentanyl ($n=63$) at Women’s Wellness and Research Center in Hamad Medical Corporation. The study neonates were identified through the Cerner database between October 2014 and January 2016. A decision analytic model, from the hospital perspective, was developed to describe all possible consequences of study groups. The primary end points were the successful drug sedation rate, based on the Premature Infant Pain Profile Scale, and the overall direct medical cost of management. The sample size calculation was to achieve results with $\alpha = 0.05$. Sensitivity analyses were conducted to enhance the robustness and generalizability of the results. Results: Morphine achieved sedation success in 68% of patients compared to 43% with fentanyl with an incremental cost-effectiveness ratio of QAR 491 (USD ~ 135) per additional case of sedation success. Morphine had a 98% probability of having an economic advantage over fentanyl. Based on Monte Carlo simulation, the sedation failure due to receiving higher doses in the fentanyl group had the highest uncertainty that influenced the outcome and the sedation success in the fentanyl group had the lowest uncertainty that affected the outcome. Conclusion: This is the first cost-effectiveness evaluation of morphine versus fentanyl in critical neonates in the literature, including Qatar. Morphine significantly improved sedation over fentanyl. This however comes with higher cost.

Emergency Medicine Fellowship: Length-of-Stay Impact of Establishing a Large Postresidency Training Program

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Introduction: The effect of attending physician on improving emergency department (ED) length of stay (LOS) has been studied in the past. This study aims to assess the operations’ impacts of a large postresidency Emergency Medicine Fellowship (EMF) program on LOS. Methods: Retrospective data were collected from ED’s electronic medical record (EMR). The main dependent variable was LOS for cases discharged after EM-only evaluation (LOS_DCEM), and the independent variable of interest was proportion of EMFs as a percentage of all on-duty ED physicians during the shift patient presented. The study used the “least absolute deviation” approach and its generalized extension in the form of quantile regression using $\tau$ value in deciles (i.e., $\tau$ 10, 20, 30, ..., 90). Bootstrapping was used as a more conservative approach to generate standard errors (and confidence intervals) for coefficients in this study’s quantile regression. Results: After exclusion of 5803 EMR-downtime cases (1.8% of 327,527) and 845 (0.3% of 327,527) cases with LOS exceeding 24 h, the final study set comprised 320,879 LOS_DCEM cases. The EMF proportion of on-duty ED physicians was statistically significant at lowest three $\tau$ levels but not significant at higher six $\tau$ levels. For the 10th, 20th, and 30th percentiles of LOS_DCEM, the percentage relative improvements in LOS_DCEM achieved by increasing the EMF proportion 1% were, respectively, 13% (6.5/52), 8% (6.8/83), and 7% (8.1/115), respectively. Conclusion: The LOS_DCEM does not appear to be unfavorably impacted by increasing the proportion of EMFs as a percentage of all on-duty ED physicians. The EMFs’ numbers disproportionately improve LOS_DCEM for those patients with shorter LOS.

To Evaluate Efficacy of Pneumococcal Vaccine in Immunized Population 2 Years before and after Immunization on Rate of Hospitalization and Intensive Care Unit Admission Due to Respiratory Tract Infection

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Introduction: Pneumococcal vaccine is recommended by different institutions for high-risk populations, such as elderly >65 years and young with chronic health problems. More than 90% of all pneumococcal infections can be prevented by a single pneumococcal vaccine. This study evaluates the effect of pneumococcal vaccination in a number of medical and intensive care unit (ICU) admissions due to pneumonia postvaccination. Methods: This retrospective observational study included 379 patients, 18 years and above, who received the pneumococcal vaccine between June 2012 and 2013, whose medical records 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 were reviewed for demographics, co-morbidities, microbiological laboratory data, X-rays, respiratory panel, and empirical antibiotic treatment (azithromycin and respiratory fluoroquinolones). The primary outcome is to evaluate the rate of hospitalization (medical and ICU). The secondary outcomes included the evaluation of the efficacy of pneumococcal vaccine in different comorbidities. Results: A total of 379 patients were included in the study; age group (64–85 years) 52% was dominant in the study, more than one-third of them were Qatars. 70% were hypertensive, 57% diabetic, and 44% asthmatic and 27% had chronic kidney disease. No significant association between rate of hospitalization and comorbidities was noted. The rate of hospitalization, due to RTI, was significantly reduced within 2 years after vaccination from 71% to 39% ($P < 0.05$). ICU admissions tend to decrease after vaccination ($P > 0.05$). In diabetic patients, the difference between pre- and post-vaccination in hospital was 33% ($P < 0.05$), ICU admissions was 2% ($P < 0.05$), and outpatient management was 5.2% ($P > 0.05$). HTN patients showed difference in hospitalization of 32% ($P < 0.05$), outpatient management of 5.6%, but not in ICU admissions of 1% ($P > 0.05$). For chronic obstructive pulmonary disease/asthma, there was a difference in hospital, ICU admissions, and outpatient management (75%–36.1% $P < 0.05$, 11.1%–8.3%, and 45.1%–44.4%). Conclusion: Pneumococcal vaccine decreased hospitalization due to respiratory tract infections. The clinical significance of these findings must be determined in long-term clinical trials, especially on ICU admission.
Knowledge, Attitudes, and Parents Survey on the Use; Knowledge and Attitude of Parents toward Car Seat Safety in Doha, Qatar

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Introduction: Motor vehicle crashes have been identified as one of the leading causes of death, injury, and disability among young children, <5 years, in Qatar. Previous studies on the effectiveness of a child restraint have shown that if child occupants are properly restrained, the fatality risk is reduced. The objective of this survey is to examine knowledge, attitudes, and usage of child restraint system in a sample of parents with young children in Doha, Qatar. Methods: A custom-designed survey, containing 25 questions that tested CRS knowledge, attitudes, and practice of participants, was applied by trained health communicators in three Well Baby Clinics of the Primary Health Care Corporation. Results: All participants at least had one child between the ages of 0 and 5 years. The results showed that only 43% used a CRS for their children and only 53% had a car seat. The most common reasons for not using a safety seat included children crying when in CRS (56%) and a preference to hold the child (18.1%). Only 23% of parents had correct knowledge of the appropriate age and weight limits of transitioning car seats as the child grows. Only 38% were aware of the benefits of using a car seat. Moreover, nearly all (94%) reported never witnessing enforcement of child passenger laws prohibiting children from riding in the front. Conclusion: There is a need to develop awareness programs that educate caregivers on the benefits and proper use of CRS. Other priority areas for intervention include the consistent enforcement of laws banning children in the front seat.

Burden of Road Traffic Injuries to the Teaching Hospital, Kandy, Sri Lanka

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Introduction: Road traffic injuries (RTIs) are corollaries of ongoing expansions, industrialization, and availability of limited resources to cope with potential challenges. Available data in Sri Lanka are scarce. This study describes the burden of RTIs at the Teaching Hospital, Kandy (THK). Methods: All patients with RTI admitted to the surgical and orthopedic wards of the THK, from June 21 to July 20, 2014, were included in the study. A pretested interviewer-administered questionnaire was used. Results: A total of 261 injured road users were admitted with RTIs during the study period. Approximately (27%) were injured from noon to 3 pm. Majority were males (87%) in the productive age group (16–45 years). The most common mode of transport was the motorcycle (79%) and the most common road user injured (47%) was the pedestrians. About 75% of the injured stayed up to 5 days in the hospital and 60% were referred to the clinics. About 53% needed surgical intervention and among those 69% had to wait for >8 h for surgery. Conclusion: This study shows the need of policy direction and establishment of an accident and emergency unit.

Epidemiologic and Temporal Trends of Work-Related Injuries in Qatar: Evidence for Preventive Programs

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Introduction: Qatar is a rapidly developing high-income country with diverse expatriate worker population. This study aims to describe the epidemiology of moderate-to-severe work-related injuries (WRIs) treated and admitted to the national trauma referral hospital, the Hamad Trauma Center from 2008 to 2014. This project is a component of the grant (NPRP 7-1120-3-288) awarded by the Qatar Foundation. Methods: The primary sample for this study was collected from consecutive data, for all victims of WRIs, obtained from January 1, 2008, through December 31, 2014, from the registry. Census data from the Qatar Statistics Authority was used to compute for population-based rates (per 100,000 population). Results: The key characteristics of 3582 patients were summarized. A majority of the victims were males (96%) with a mean age of 33 years. The leading mechanisms of injury were falls from height (41.8%), road traffic injuries (RTIs) (17.5%), and falling objects (14.3%). There was a gradual reduction of the rate of injury per 100,000 worker population, with a peak in 2010. The incidence of falls from height decreased (~17.8%) during the study period and that from RTIs increased (+70.5%). Conclusion: Using clinical databases is the first step to identify the risk areas and interventions, but the data have its limitations. Creating partnerships with expatriate worker organizations and occupational safety professionals may be another step to enhancing the effectiveness of worker safety programs in Qatar. A nationally linked WRI database will be essential to provide data to guide future programs, as well as the evaluation tool to monitor their effects on worker safety.

Trauma Team Documentation Improvement Project

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Health care documentation is a critical component for optimizing high-standard quality that is necessary to improve patients’ outcomes. Hamad Medical Corporation (HMC) has formulated policy that implies with the JCI standards to ensure adequate documentation. However, deficiencies related to incomplete, inaccurate, not timely, or incoherent documentation occur. The purpose of this project was to
abstracts

Intracerebral hemorrhage (ICH) volume is 77% validating the known significant difference. The percentile. No meaningful association factors. There was no significant difference between IBPD noted variables such as age, demographics, regions of interest, and risk between the significant IBPD and the study it was observed in 97% IBP was seen in 95% was 7 mmHg (4–10). The difference in SBP of <20 mmHg for the first ΔSBP (ΔSBP1) and the second reading (ΔSBP2), as age was 34 (10) years. The absolute systolic blood pressure 1800 patients were prospectively recruited from ED. The mean based on the distribution of data. The data were analyzed using appropriate cuff sizes. The continuous variables were reported distribution in this population.

Introduction:

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Study

Pressure Readings of Adults in the Emergency Department

Characterizing Agreement in Level of Interarm Blood Pressure Readings of Adults in the Emergency Department Study

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Introduction: CALIBRATE aims to study the interarm blood pressure differences (IBPDs) in patients presenting to the emergency department (ED) in Qatar and to assess the IBPD distribution in this population. Methods: In sitting position, two consecutive BP measurements were obtained from right and left arm for each participant using calibrated automated machines and appropriate cuff sizes. The continuous variables were reported as mean (standard deviation) or median (interquartile range) based on the distribution of data. The data were analyzed using Stata MP 14.0 (College Station, Texas, USA). Results: A total of 1800 patients were prospectively recruited from ED. The mean age was 34 (10) years. The absolute systolic blood pressure (ΔSBP) difference between right and left arm was same for the first ΔSBP (ΔSBP1) and the second reading (ΔSBP2), as 6 mmHg (3–10). The absolute average of ΔSBP1 and ΔSBP2 was 7 mmHg (4–10). The difference in SBP of <20 mmHg for IBP was seen in 95th percentile of the population with single reading, whereas, with the average of two individual readings, it was observed in 97th percentile. No meaningful association could be detected between the significant IBPD and the study variables such as age, demographics, regions of interest, and risk factors. There was no significant difference between IBPD noted for Asia Pacific or Arab population. Conclusion: In population presenting to the ED, the IBPD of at least 20 mmHg reached at 95th percentile validating the known significant difference. The utility of SBP difference can be improved further by taking the average of two individual readings.

Levels of Agreement for Intracerebral Hemorrhage Volume Estimation using ABC/2: A Comparison between Emergency Physicians and Emergency Radiologists Assessment

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Introduction: Intracerebral hemorrhage (ICH) volume is shown to prognostically correlate with mortality and morbidity. Objective: We aimed to define levels of agreement between emergency radiologists (ER) and emergency medicine (EM) physicians for estimating bleed volume using the ABC/2 formula. Methods: This was a prospective interpretation study of head computed tomography (CT) scan examinations in an emergency department. Two ERs, an EM attending, a senior and a junior EM Fellow (EMF), and a senior and a junior EM resident (EMR) independently reviewed the scans. Two perpendicular maximal dimensions (A and B) were measured on an axial CT image, and “C” dimension was the multiplication product of slice thickness and number of slices with a visible bleed. All analyses were executed with Stata (Quad core, 15 MP, StataCorp, College Station, TX, USA). Results: Out of 100 CT scans, 90% (90/100) belonged to male with a median age of 50 years (interquartile range [IQR] 43–57). The median bleed volume was 11.2 mL (IQR 6.6–18.6). The mean of differences for estimated volume between the index radiologist and the raters were (rater, mean [95% confidence interval] in milliliters) as: second ER, 1.19 (1.14–1.24); EM attending, 1.05 (0.98–1.13); senior EMF, 1.05 (1.00–1.10); junior EMF, 1.19 (1.06–1.33); senior EMR, 1.29 (1.19–1.39); junior EMR, 1.11 (1.03–1.20). Conclusion: In an urban academic ED, an excellent level of agreement was found between emergency physicians and ERs for estimating the ICH bleed volumes using ABC/2 formula.

The Concept of Incorporating Pharmacists into an Ambulance Service

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Introduction: Many transitions have occurred in the pharmacy profession between 1860 and the late 1990s. Moving through five different stages of pharmacy practice, the profession has transitioned from traditional product-oriented functions to more advanced, patient-centered clinical roles, and finally to the pharmaceutical care stage, making pharmacist also responsible for medication therapy outcomes. Methods: Involving pharmacists in an ambulance service is a relatively recent
Simulation-Based Learning in Emergency Medicine-Trainees’ Perspective at Hamad Medical Corporation’s Emergency Medicine Department (Mixed Method Survey)

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Introduction: Simulation training is an educational modality that is increasingly being utilized by emergency medicine programs to train and assess residents in core competencies.\(^1\) Simulation-based learning is increasingly being used to highlight multitasking, teamwork, and patient-care skills.\(^2\) We evaluated the current practice of simulation-based learning at HMC’s emergency medicine training programs, through the perspective of its trainees. Methods: This evaluation study was conducted by a mixed method survey to obtain data. Results were analyzed from the perspective of trainees toward simulation-based learning. A strong perception was expressed when >70% respondents agreed that simulation had a positive impact on (1) overall learning, (2) better acquisition of procedural and clinical skills, (3) achieving ACGME-I core competences. Results: A total of 73/88 (82.9%) trainees responded to the survey. 83% of the respondents agreed that overall learning experience by simulation is positive. 77% of the respondents agreed that it improved their acquisition of procedural and clinical skills and 72% respondents are of the opinion that simulation is a tool by which ACGME-I core competences can be achieved. Positive comments from trainees appreciated the realism in scenarios and efforts made by faculty to overcome the logistical challenges. Conclusion: We observed that trainees expressed an overall positive perspective toward simulation-based learning. The open-ended question’s responses identified few areas for improvement that have been highlighted through this report that will be forwarded to the faculty and program directors with a proposal of conducting a quality improvement project over a period of 6 months, followed by a reevaluation survey.

Tabletop Exercise on Mass Casualty Incident Triage, Does it Work?

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Introduction: Triage is the first step in medical hierarchy for better management before treatment and transport in mass casualty incident (MCI). Therefore, an accurate, valid, and timely triage will save life and limbs, especially when done by expert in MCI. This study planned to evaluate the MCI triage skills of the medical and nursing staff at tertiary Hamad General Hospital Emergency Department (HGH ED) at Doha, Qatar. They were provided a tabletop exercise about MCI triage to improve the skills and knowledge followed by impact assessment. Methods: This randomized control trial includes both intervention and control groups. The selected sample was randomly divided into two groups. The intervention group performed the tabletop exercise (TTX) and the control group followed written paper-based instructions about MCI triage. Both groups were asked to triage 20 standardized cases as per Simple Triage and Rapid Treatment Triage System. This study evaluated the triage accuracy and time to triage as primary outcomes as well as over and under triaging for both groups as secondary outcomes. Results: The study results report 90% triage accuracy in the intervention group and 70% in control group with a difference of 20%–30%. The time to triage all cases was 5.4 min in the intervention group and 8.2 min in the control group, so participants in the intervention group triaged their patients more quickly than participants in the control group with a mean difference 2.8 min, 98.5% confidence interval 5.4–8.2 min. The over and under triaging were 5% for both on the intervention side but 20% and 10%, respectively, in the control side. The reliability was also found better at intervention side due to repeated training. The validity is not measured because the nature of work is simulation and only one triage system is used. Conclusion: The TTX on triage for 1 h improved the triaging skills of the ED medical staff up to 20%–30% in comparison to written paper-based instruction technique as well as the time to triage was also near to the half. The study suggests future studies to validate these findings which may also confirm other triage-related findings such as accuracy, and validity, reliability, and time to triage.

The Feasibility of Implementing a Telephone Triage for Patients with Cancer: Qatar Perspective

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Introduction: A patient with cancer may undergo various combinations of chemotherapy and radiotherapy surgery,
immunotherapy, hormone therapy, and stem cell transplant. All cancer treatments have several side effects and complications. To support patients who are undergoing treatment for cancer, international standards indicate that 24-h access to high-quality care is critical. Telephone cancer services are designed to respond to cancer patients in their homes and to provide them with medical and nursing advice based on their signs and symptoms. The aim of this study was to review the feasibility of implementing a telephone triage for patients with cancer in Qatar. Methods: Articles in published English language were retrieved from several electronic databases (PubMed, CINAHL, Ovid, and Medline) published from 2000 to 2015 with all relevant keywords. The papers were evaluated using the Critical Appraisal Skills Program and Mixed Method Appraisal Tool to determine eligibility and relevance. A thematic analysis was used to synthesize the findings. Results: After applying the inclusion and exclusion criteria, 13 articles were deemed fit for inclusion in this literature review. The literature of this review highlights the complexity of the decisions that accompany the consideration of implementing a tele-oncology in Qatar. The literature review detailed barriers and facilitators for implementing telephone triage service for cancer patients. These were grouped as human, technology, documentary tools, organizational, and communication domains. Conclusion: Generally, providing health assessment and advice over the telephone has been recognized as a means of improving access to and quality of healthcare services in Qatar.

**Traumatic Thoracic and Lumbar Vertebral Injuries – Current Computed Tomography Report Status in a Tertiary Institute**

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**Introduction:** This study aims to assess radiologists’ computed tomography (CT) reports in terms of descriptive clarity and comprehensiveness in our institute when compared to spine surgeons’ perspective represented by the AO spine thoracolumbar (TL) classification system. AO TL classification morphological description, in summary, assesses fracture involvement of the vertebral body posterior wall, either or both superior and inferior endplates involvement, extension to the vertebral posterior element (transosseous, transligamentous, or both), and presence of displacement or dislocation. Methods: This is a retrospective nonrandomized cohort study. AO TL spine classification morphological description is used as a clinical verdict for CT scan report assessment. Images and reports were reviewed separately to illustrate the current reporting status for vertebral fractures. Results: Total number of cases: 74. Overall concordance between radiological report and AO classification: (1) Concordant in 28 CT scan reports out of the total 74 cases. (2) Discordant in 46 CT scan reports out of the total 74 cases. Individual subtypes concordance between radiological report and AO classification: (1) Type A: Total cases are 64 out of which 22 are concordant and 42 are discordant. (2) Type B: Total cases are 7 out of which two are concordant and three are discordant. (3) Type C: Total cases are 3 out of which one is concordant and two are discordant. Conclusion: A considerable number of our CT scan reports’ displayed discordance relevant to the AO TL spine classification morphological description. Thus, an urgent need to restructure our TL injuries CT scan reports’ to address the clinical needs is justified. We suggest creating a synoptic radiology report based on the AO TL spine classification.

**An Epidemiology of Spontaneous Intracranial Hemorrhage Patients Presenting to the Emergency Department in Qatar**

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**Introduction:** Spontaneous intracerebral hemorrhagic (ICH) remains a significant cause of morbidity and mortality. We aim to investigate the epidemiological characteristics of spontaneous ICH patients presenting to the emergency department (ED). Methods: This is a retrospective cohort study conducted in an urban ED, including patients admitted with a spontaneous ICH diagnosis between January 1, 2014, and December 31, 2014. Results: A total of 296 patients’ data were included in this study. The mean age of study population was 49.1 years (95% confidence interval [CI] = 47.3–51.0) with a sex ratio (male-female) of 3:1. Most of the patients were from the Middle East (35.6%; 95% CI = 30.1%–41.5%) and Southeast Asia (60.2%; 95% CI = 54.3%–65.9%) with a minority (4.2%; 95% CI = 2.2%–7.1%) from other regions. The median age of patients from Southeast Asia (46 years [interquartile range [IQR] = 40–52]) was significantly lower than the patients from Middle Eastern region (56.5 years [IQR = 43–72; P < 0.001]). Frequency of bleeds by location was found as deep ICH in 39.4%, lobar 28.1%, infra-tentorial 10.2%, subarachnoid hemorrhage 11%, subdural hemorrhage 6.6%, IVH 3.3%, and epidural hemorrhage in 1.5% of the patients. Length of stay in the hospital was ≤7 days for 65.6% (95% CI = 59.6%–71.4%) of the patients. The survival to discharge rate was 83.1% (95% CI 77.9%–87.5%). Conclusion: Southeast Asian patients with spontaneous ICH were relatively younger than the patients from the Middle East. However, larger studies are required in a similar population to validate the findings of this study.

**Fascia Iliaca Compartment Block in Fracture Neck of Femur**

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**Introduction:** Fracture neck of the femur (NOF) is a serious and painful consequence of falls among older people. Conventional management of pain in these patients involves intravenous administration of strong opioids which have many undesirable side effects, but of particular concern are delirium, hypotension, and respiratory depression. These effects may be accentuated in an elderly population that needs increased
patient monitoring and utilization of limited ED resources. Alternative method of acute pain control in these patients is regional nerve blocks which also has been recommended by the NICE. Fascia iliaca compartment block (FICB) was first described by Dalen et al. in 1989. Methods: This study was conducted to evaluate the effectiveness of FICB in fracture NOF in the Emergency Department (ED) of a District General Hospital from May 2012 to September 2012. This hospital is a trauma unit in the region and has annual attendance of 44,000. All consultants and middle grade were given training on procedure and the first block was supervised to evaluate competency of procedure performance. Adult patients with radiographic evidence of fracture NOF were included while patients with cognitive impairment, inguinal hernia or local infection (fracture side), hypersensitivity to local anesthetic and multiple injuries in the same limb were excluded. Patients were approached by emergency physician for informed consent of procedure. The patients were offered standard analgesia if there was delay in performing procedure. All patients had three-lead electrocardiogram monitoring and routine observations were documented before and after block. Verbal pain score was assessed on 10 point scale at time zero, 30 min, 60 min, and 8 h. The use of further analgesia in ED and any side effects also reported. FICB was performed using two-pop technique 1 cm below the junction of middle and lateral one-third of inguinal ligament with 2 inch blunt needle. Levobupivacaine 0.25% was used as local anesthetic because of its relative safe cardiovascular profile. Dose was calculated according to the weight (patient weight >50 kg = 40 mL, ≤50 kg = 20 mL LA + 20 mL normal saline). Results: We studied 24 nonconsecutive patients in the ED. There were 19 female and 5 male patients with a mean age of 81 years. 15/24 patients received preblock intravenous (IV) morphine with a mean dose of 1.9 mg and the average time was 160 min after they received FICB. The calculated mean pain score was 7.5 just before the block which was the same in patients who received IV morphine. It was noted that mean pain score was 4.17 at 30 min, 2.6 at 60 min, and 1.7 at 8 h. FICB was successful in 22/24 (83%) patients and there was no benefit in 2/24 patients who also needed further analgesia in the ED. There was more than 3-point improvement in pain score in 54% patients at 30 min, 82% at 60 min, and 88.8% at 8 h. There were no procedural complications noted in any patient in ED.

Clinical and Epidemiological Characteristics of Cryptococcosis: A 10-Year Retrospective Study

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Introduction: Cryptococcosis is an opportunistic fungal infection mostly affecting immunocompromised patients. It can be life-threatening even in apparently immunocompetent patients. The objectives of this study were to identify the clinical and epidemiological characteristics of cryptococcosis as well as determine its clinical outcome. Methods: This was a retrospective observational study of all culture-confirmed cases of cryptococcosis conducted at the main seven hospitals in the state of Qatar from January 2005 to December 2016. Results: The mean annual incidence was 0.65 per 10⁴ population. Among the 14 confirmed cases of cryptococcal infection, male constituted the vast majority of cases (13 males) with a median age of 39 years (range 6–72). Majority of patients (13) were expatriates (mostly from Asian subcontinent). Four patients had HIV with low CD4 count and five were receiving immunosuppressant medications. Subacute manifestation was characteristic, with a median duration of symptoms of 14 days. Central nervous system was the most common site of infection (8 patients) followed by bloodstream infection and pneumonia (3 and 2 patients, respectively). One patient had cryptococcal scrotal infection. All isolates were sensitive to amphotericin B and fluconazole. Only two patients with bloodstream infection (HIV negative) died. The rest of patients were cured from the infection and discharged home. Conclusion: Cryptococcosis is a rare fungal disease in the state of Qatar, mostly diagnosed in Asian immigrants. Central nervous system is the most common site of infection. The presence of the fungus in the blood carries high mortality.

Electronic Medical Record Error in Reported Time of Discharge: a Prospective Analysis at a Tertiary Care Hospital in Qatar

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Introduction: The aim of the study is to evaluate the accuracy of electronic medical record (EMR) reporting related to patients' length of stay (LOS) in the Emergency Department (ED). Methods: This was a prospective noninterventional study that entailed research associates (RAs) observing time of discharge (TOD) as part of routine ED operations data collection and analysis. The TOD was provided by two RAs while EMR served as the source for the routinely reported LOS data including the time of discharge (TOD). Results: A total of 184 cases for which TOD and TOD were compared during a total of six study timing sessions. A difference of <5 min between TOD and TOD was observed in 42.9% (79, 35.7–50.4%) and more than 5 min in 57.1% (105, 50.0–64.3%) of the cases. When analysis was restricted to the 105 cases where there was operationally significant (at least 5 min) TOD Error, the error direction was strongly biased toward TOD’s lagging behind TOD. Conclusion: EMR-reported discharge times were usually (57% of cases) more than 5 min in error and toward overestimation of LOS. The difference observed was clinically and operationally significant.
Epidemiology and Clinical Outcomes of Viral Central Nervous System Infections in Qatar

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Introduction: Central nervous system (CNS) viral infections are an important cause of morbidity and mortality. No data are available regarding their epidemiology in Qatar.

Methods: We retrospectively evaluated all cerebrospinal fluid (CSF) findings from January 2011 to March 2015 at Hamad Medical Corporation. Those with abnormal CSF finding were included in our study. We excluded those with missing medical records, no clinical evidence of viral CNS infection, or proven bacterial, fungal, or tuberculosis CNS infection. CNS clinical findings were classified as meningitis, encephalitis, or myelitis.

Results: Among 7690 patients with available CSF results, 550 cases met the inclusion criteria (meningitis 74.7%; encephalitis 25%; and myelitis 0.4%). Two-thirds (65%) were male and 50% were between 16 and 60 years old. Viral etiology was confirmed in 38% (enterovirus, 44.3%; Epstein–Barr virus, 31%; varicella zoster virus, 12.4%). The estimated incidence was 6.4 per 100,000 population. Two persons died and the rest were discharged to home. Among those with confirmed viral etiology, 83.8% received ceftiraxone (mean duration 7.3 ± 5.2 days), 38% received vancomycin (mean duration 2.7 ± 5.4 days), and 38% received at least one other antibiotic. Intravenous acyclovir was continued for >48 h in patients with confirmed negative viral etiology (mean duration 5 ± 5.6 days).

Conclusion: Viral etiology is not uncommon among those evaluated for CNS infection in Qatar. Clinical outcomes are excellent in this group of patients. Antibiotics and acyclovir are overused even when a viral etiology is confirmed. There is a need for clinician education regarding etiology and treatment of viral CNS infections.

Does “Giving Less Blood” in Upper Gastrointestinal Bleeding Save More Lives? Evidence-Based Clinical Topic Review

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Introduction: Acute upper gastrointestinal bleeding is a common presentation to the emergency department in Hamad General Hospital and blood transfusion is frequently given. However, studies from different clinical scenarios suggest that there is an increased risk of mortality associated with blood transfusion. The objective of this evidence-based clinical topic review is to determine the restrictive strategy of blood transfusion, i.e., hemoglobin maintained at lower level, compared with liberal strategy of blood transfusion, i.e., hemoglobin maintained at higher level, and improve mortality in patients with acute upper gastrointestinal bleeding.

Methods: Literature search conducted using PubMed, Cochrane Library, and Google Scholar. 463 articles were found. Randomized control trials, observational studies, systematic review, and meta-analysis were included. Case series, guidelines, and recommendations were excluded. Twenty-eight full articles reviewed. Seven articles selected for appraisal after rejecting duplicates and studies not related to upper gastrointestinal bleeding. Results: Three randomized control trials with a total number of 1907 patients showed improved mortality when restrictive strategy was used. Pooled data of one recent meta-analysis, Cochrane review 2010, and results of two recent observational studies showed improved mortality with restrictive strategy. Conclusion: A restrictive strategy of blood transfusion is a safer approach in acute upper gastrointestinal bleeding. However, results may not be generalizable to patients with massive hemorrhage and patients with comorbidities, for whom the decision to transfuse should be based on clinical judgment. There is a need of more randomized control trials on this topic as available studies are few.

The Role of Preoperative Thyroid Fine-Needle Aspiration Cytology with and without Ultrasoundography: A Single Institutional Experience

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Introduction: Fine-needle aspiration (FNA) is the mainstay of thyroid nodules assessment and diagnosis of malignancy. This study analyzes the role of palpation-guided versus ultrasound-guided FNA for diagnosis of malignancy in patients who underwent thyroid surgery. Patients and Methods: This is a retrospective analysis of data obtained for all thyroid FNA biopsies from the surgery database at Hamad General Hospital from January 1998 to January 2014. All patients who underwent thyroid surgery during that period were included in the study. Comparison of FNA results was performed based on palpation-guided and ultrasound-guided FNA biopsies. Diagnostic smears are classified as benign, indeterminate, suspicious for malignancy and unsatisfactory.

Results: 1210 patients had surgery for thyroid nodules. 402 patients underwent ultrasound-guided FNA, 508 underwent palpation-guided FNA in clinic, and 70 had multiple samples using both methods. Cytology results aspirated by ultrasound guidance (n = 508) versus palpation (n = 402) were as follows: suspicious for malignancy (26.1% vs. 16.3%; P = 001), benign (55.0% vs. 69.3%; P = 001), indeterminate (14.9% vs. 7.8%; P = 0.001), and unsatisfactory (12.4% vs. 11.8%; P = 0.78). In the palpation and ultrasound groups, 54.8% and 69% of the cases with suspicion of malignancy were confirmed to have postoperative cancer, respectively. Sensitivity, specificity, and positive and negative predictive values were 69.3%, 90.8%, 75.2%, and 88.1%, respectively, in the ultrasound group versus 54.8%, 95.1%, 76.8%, and 87.7% in the palpation
Abstracts

Implementation of Electronic Medical Record and Its Downtime Effect in a Busy Emergency Department
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Introduction: To study the experience of electronic medical records (EMRs) implementation in a busy urban academic emergency department (ED) and to determine the frequency, duration, and predictors of EMR downtime episodes.

Methods: This was a retrospective analysis of data collected in real time by an EMR and by the operations group at the study ED, during the 20 months from May 2016 through December 2017. The study center uses the First Net Millennium EMR (Cerner Corporation, Kansas City, Missouri, USA). The ED operations data are downloaded weekly from the EMR and transferred to the analytics software Stata (version 15MP, StataCorp, College Station, Texas, USA).

Results: During the study period, there were a total of 12 episodes of Electronic medical records downtime (EMRD), totaling 58 h with a mean of 4.8 ± 2.7 h. There were no association seen between the occurrence of EMRD event and patient age (P = 0.858), proportion of males (P = 0.224), triage acuity scale (P = 0.276), on-duty physician coverage levels (P = 0.831), the month (P = 0.850), the weekdays (P = 0.020), or the clinical shift (morning, evening, or night shift (P = 0.423).

Conclusion: In a real-world implementation of EMR in a busy ED, EMRD episodes averaging nearly 5 h in duration occurred at unpredictable intervals, with a frequency that remained unchanged over the first 20 months of the EMR deployment. The study could define downtime characteristics at the study center however could not identify any predictors for EMR downtime.

Interobserver Reliability in Assessing Intracerebral Hemorrhage Shape as Ellipsoidal versus Nonellipsoidal: A Comparison between Emergency Physicians and Emergency Radiologists Assessment
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Introduction: ABC/2 estimation is derived from the volume of an ellipsoid. There is sufficient literature that departure from an ellipsoid geometry leads to incorrect volume estimations using the ABC/2 formula. We aimed to determine the level of agreement between multiple raters' assessments of ellipsoidality.

Methods: This was a prospective interpretation study of head computed tomography (CT) scan examinations in an emergency department. Seven raters, two emergency radiologists, an emergency medicine (EM) attending, a senior and a junior EM Fellow (EMF), and a senior and a junior EM resident (EMR) independently reviewed all the CT scans on SanteDICOM image viewer. The participants were asked to categorize bleed shape as ellipsoidal versus nonellipsoidal. The interobserver agreement was assessed through kappa (κ) and reported with 95% confidence interval. Analyses were executed with Stata (Quad core, 15MP, StataCorp, College Station, TX, USA).

Results: Of 100 CT scans, 90% (90/100) belonged to male population with a median age of 50 years (interquartile range 43–57). The bleeds were categorized as ellipsoidal in 37 out of 100 CT scans by the index radiologist. The interobserver agreement for categorizing bleed shapes compared with index radiologist was (rater, κ [95% confidence interval]): second emergency radiologist, 0.28 (0.12–0.44); EM attending, 0.33 (0.19–0.49); senior EMF, 0.61 (0.44–0.77); junior EMF, 0.19 (0.07–0.32); senior EMR, 0.24 (0.11–0.39); junior EMR: 0.35 (0.21–0.5).

Conclusion: In the study area, poor levels of agreement were found between the raters for categorizing ICH bleeds as ellipsoidal versus nonellipsoidal.

Tackling Diabetic Patients 999 Recalls through Health Education by Hamad Medical Corporation-Ambulance Service Staff
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Introduction: In Qatar, diabetes prevalence is 17%. In 2016, 43.37% of diabetic patients seen by HMCAS refused transport to hospital after initial management and 8.51% of them recalled 999 within 72 h for diabetes complications. This jeopardizes patient outcomes and wastes ambulance resources. We aimed to reduce this recalling percentage by empowering patients through health education.

Methods: We collaborated with the National Diabetes Center and the Qatar Diabetes Association and targeted patients who had a random blood sugar (RBS) <3.5 or >11 mmol/dl. Paramedics completed a pre- and post-intervention survey about health education and received a staff circular, posters encouraging diabetes health education were displayed, and cognitive cards with diabetes education advice were attached to portable monitoring devices.

Results: Recall rates were reduced from 13.46% before April 2, 2017 (start of first intervention) to 8.18% by July 10, 2017 (end of interventions), and 4.82% by July 15, 2018. The patient age ranged from 1 to 100 years. For the postintervention period, the highest refusal rate was 54.2% for the age range of 40–75 years (P = 0.21), then 36.12% for those aged >75 years (P = 0.91), 13.13% for those aged 14–40 years (P = 0.2), and 1.57% for those aged <14 years (refusal signed by the parents) (P = 0.64). Age ranges had no statistically significant effect on refusal rates. The maximum RBS recorded was 26.4 and
the lowest 1.1, both in the postintervention. **Conclusion:** In our study, refusal for transport and recalls within 72 h by diabetic patients has reduced. Providing effective health education to patients saves resources otherwise dispatched to recalls and promotes safer and more centered patient care, which is the goal of Qatar National Health Strategy 2017–2022.

**The Effectiveness of Ebola Virus Disease Training in Increasing the Confidence Level of Frontline Infection Control Response Team, Emergency and Outpatient Department, Al Wakra Hospital**

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**Introduction:** Emergency radiologists (ERs) and outpatient departments (OPDs) are gateways of hospitals. Confidence of staffs in early identification, isolation, and management is important for pandemic threats such as Ebola Virus disease (EVD). **Methods:** The Infection Prevention and Control (IPC) and nurse educators worked on ensuring that response teams are competent for EVD. EVD program consisting of didactics, case studies, and PPE workshops was made for ER and OPD. Formative evaluations checked acceptance of participants to the training program. After 6 months follow-up, cross-sectional survey on confidence levels was done. The survey included (1) identifying EVD, (2) isolation, (3) information cascade, (4) donning PPE, (5) PPE removal, (6) waste disposal, and (7) disinfection of room and equipment. **Results:** Eight sessions conducted from May 20, 2018, to June 11, 2018, targeted frontline staffs and housekeepers in adult, OB-GYNE and pediatric emergency and general and OB-GYNE outpatients. A total of 82 staffs were trained for EVD cases. During immediate evaluation, staffs said that they are strongly satisfied with the program. Follow-up survey of nurses showed that majority have strong confidence in all domains with limitation on disinfection done by housekeepers. **Conclusion:** The EVD training improved frontline staffs’ skills, knowledge, and attitude in providing 24-h coverage as gatekeepers of Al Wakra Hospital. The hospital feels safer knowing that staffs in ER and OPDs are able to early identify and manage suspected or confirmed EVD. Education, follow-up, and access to IPC are keys to ensuring pandemic preparedness.

**Time to Initial Physician Contact in a Busy Emergency Department: One-Year Assessment of Operational Changes**

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**Introduction:** An important goal for the emergency department (ED) is the time to initial physician contact (tMD). The “tMD” helps improve medical care and administrative benefits. The primary aim of the study was to assess the effectiveness of different ED operations’ changes on tMD. **Methods:** The study was a prospectively designed analysis for 1 year. Data were collected by the study center’s electronic medical record. The study was divided into three operations’ time frames (or phases) defined by three ED operation events (increase in number of consultants, change of shift timings, and increase in consultants covering a shift) compared with the baseline (prestudy) period. Data were then downloaded and imported into the statistical software package Stata (15MP, StataCorp, College Station, Texas, USA) for analysis. **Results:** The study commenced on July 1, 2016. During the 52-week study, the ED census was 418,899. The coefficient for tMD slope improvement compared to baseline with confidence interval (CI) and P value was: Phase 1: −2.5 (confidence interval [CI]: −4.1–−0.97 [P = 0.002]); Phase 2: −1.6 [CI: −2.8–0.37 (P = 0.031)]; and Phase 3: −2.4 (CI: −3.4–−1.4 [P < 0.001]). The study phases showed significant improvement over baseline study period. **Conclusion:** This was the first evaluation of ED operations to be conducted in the country using a large dataset. It was useful for guiding operations planning both during the study period and thereafter as operations continue to focus on optimizing tMD.

**Wells Score as a Clinical Screening Tool for Deep Vein Thrombosis in the Emergency Department**

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**Introduction:** Deep vein thrombosis (DVT) is the blood clot that forms inside the deep veins. These blood clots can break off and travel to an artery in the lungs which in turn block the blood flow. This condition is called pulmonary embolism and can be life-threatening. Doppler scans are usually advised as the first-line investigation for patients with a suspected lower extremity DVT. This approach is time-consuming, and so, strategies are needed to safely decrease the utilization of Doppler scans to reduce the length of stay. **Methods:** The study was conducted in Hamad General Hospital, Emergency Department, from March 1, to May 30, 2017. A total of 53 samples were studied to validate the reliability of wells score criteria. Patients presented with complaints of lower extremity tenderness and/or edema and/or erythema were included in the study. The patients were categorized into groups of low (Well’s score of 2–0), moderate (Well’s score of 1–2), or high risk (Well’s score of ≥3) for a lower extremity DVT by utilizing the Well’s score for DVT. The results are then compared with the Doppler results to study the reliability of wells score (https://reference.medscape.com/calculator/dvt-probability-wells-score). Excluded were patients in the outpatient setting, surgical patients, pediatric patients, patients with suspected PE, and patients with suspected upper extremity VTE. **Results:** The total numbers of bilateral and unilateral Doppler scans conducted among the suspected lower extremity DVT cases were acquired (53) which involves six
high-priority, nine moderate-priority, and 38 low-priority cases. The Doppler reports were then compared to the Wells score graded by triage nurses, which show that all the high-priority cases are positive for DVT, one among the nine moderate-priority cases is positive, and none of the low-probability cases are positive. The result shows that a Wells criterion is a reliable clinical tool to assess DVT at the triage.

**Conclusion:** In patients who present with a possible lower extremity DVT (unilateral or bilateral lower extremity edema and/or erythema and/or tenderness), the initial diagnostic test should be guided by the clinical assessment of pretest probability by utilizing the Well’s score for DVT. It can not only screen the DVT in triage but also save the diagnostic costs and length of stay in the hospital.

**A 9-Year Time Trend Analysis of Road Traffic Injuries and Deaths among Infants and Toddlers in Qatar**

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**Introduction:** Road traffic injuries (RTIs) are the leading cause of death in Qatar, but the epidemiology of these injuries in the infant (0–1 year) and toddler (2–4 years) [IAT] population has not been reported. This study aimed to document and analyze the epidemiology of RTI in IATs of Qatar and make targeted and age-specific recommendations to improve road safety for this population.

**Methods:** All data from patients (<5 years) seen, treated, and/or admitted to the Hamad Trauma Center (HTC), the national trauma referral center of Qatar, from January 1, 2008, December 31, 2017, for RTIs were extracted from the Trauma Registry of the national trauma referral center. The data obtained for each patient included demographics, details of injury, and procedures performed. Epidemiologic, demographic, and clinically relevant outcome indicators were compared over time, and comparisons were made between the most common mechanisms of RTI.

**Results:** During January 2008 and December 2017, the HTC attended to 271 patients, aged 0–5 years, who suffered from moderate-to-severe RTIs, and 15 RTI deaths were reported during the study period. Males made up 83.7% of the injured and 60% of fatalities. The average age of the injured was 3 years and for fatalities was 2.8 years. Pedestrian injury (56%) was the leading mechanism of child RTIs. Other leading mechanisms of child RTI included; motor vehicle crashes (41%) and bicycle crashes (3%).

**Conclusion:** RTIs and RTI death rates in infants and toddlers in Qatar have been declining, but proven programs for improved safety of child pedestrians and passengers must be implemented if it is to approximate those in other HTCs.

**Are There Car Seats In Qatar? Results and Recommendations from a Rapid Market Survey**

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**Introduction:** Mortality for young children in motor vehicle crashes in Qatar was highest in those who were unrestrained. Anecdotal reports have attributed low car seat use to their expense and unavailability prompting car seat giveaway programs, but an assessment of the local car seat market has not been conducted previously. This study reports the results of a rapid market survey (RMS) to understand the availability, characteristics, and cost of child restraints and make recommendations for future child-restraint policies in Qatar.

**Methods:** The survey involved locating all retail outlets that sell child restraints in Qatar and collecting standard data: brand, model number, age/weight limits, compliance with standards, availability, and language of owner’s manual.

**Results:** The RMS showed a sufficient number and variety of car seat models (83) available at 19 retail outlets with a wide affordability range ($46–$810). All of the car seats complied with the European standard. Only 2% showed a date of manufacture or expiry. A user manual was available in
only 71% of seats and in a variety of different languages, but only 36% in the native language of Arabic. Conclusion: This RMS demonstrates the availability and variety of child restraint systems in Qatar. Unavailability and expense cannot be cited as barriers to their use, and the market is prepared for legislation requiring car seats for children in Qatar. Areas for improvement include requiring user manuals, especially in Arabic, and that all car seats comply with globally accepted safety standards.

**Al Wakra Hospital Pediatric Division’s Advocacy on Child Safety**

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**Introduction:** The Child Safety Project is an initiative of Al Wakra Hospital Pediatric Division to address child safety issues in the community we served because we believed that children are the future of our nation. Methods: Child safety-related Occurrence, Variance and Accident (OVA), form of electronic incident reporting system was reviewed and there are 711 cases related to child safety in 2016. It raised a red flag alert as it depicts a growing problem in the community as 50% of these patients have previous visits to the pediatric emergency department (PED). The project mandated the whole team to act as patient’s advocates. Educational materials on safety practices were prepared and approved. Pamphlets were given to parents on their visit to PED and child safety videos are played in their waiting areas. Community-based partnership was also launched through the establishment of partner schools and nine school visits were conducted in 2017 to address safety practices. The Child Safety Campaign was conducted and participated during the National Day and company events to spread awareness. Results: The initiatives resulted to a decrease in the incidence of child safety issues. There are 571 cases of child safety issues compared to the 711 cases on 2016 as per the OVA report.

**Self-Reported Contributory Factors for Work-Related Injuries in Qatar: Findings from the Work Related Injury Unified Registry in Qatar (WURQ) Inpatient Survey**

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**Introduction:** Work-related injuries (WRIs) are a leading cause of trauma admission in Qatar; their epidemiologic trends and high-risk populations have been reported. This study aims to explore the work circumstances and environments leading to severe WRIs, to inform the creation of targeted interventions to improve worker safety. Methods: WRI patients admitted to the Hamad Trauma Center were orally consented and interviewed by trained interviewers using a standard questionnaire. The ethical approval for the interviews was obtained under the NPRP 7-1120-3-288 grant by Qatar Foundation. Proportionate sampling, based on leading mechanisms of injuries, was used. Results: Fifty patients were interviewed. 58% had some kind of safety training, and 82% were aware about the risks at work. 78% used some form of personal protection. Approximately 50% of the patients had one form of health insurance. Almost everyone was given treatment on site before being transported to the nearest treatment facility. Self-reported contributory factors, for WRI, included “inadequate training for a new task,” “suboptimal working environment,” and “psychological factors.” Almost all classified their injuries as “accidental” or unexpected. Conclusion: Workers need to be educated and made aware of the fact that injuries “can be prevented.” The areas for improvement include: (1) culturally appropriate safety training, (2) increased use and availability of personal protective equipment, (3) health insurance, and (4) training for new tasks. Further studies on knowledge and attitudes of workers toward safety are needed to better inform occupational injury prevention programs in Qatar and put adequate measures in place to prevent WRIs.

**The Epidemiology of Work-Related Road Traffic Injuries in Qatar: Road User Characteristics Inform Injury Prevention Programs**

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**Introduction:** Injuries are the leading cause of death in Qatar, primarily those that occur at work or on the road. However, there is a paucity of data on work-related road traffic injuries (WRTIs) in Qatar. This study describes the epidemiology of WRTIs in Qatar and makes recommendations for targeted prevention programs. It was conducted as part of a larger Qatar Foundation grant (NPRP 7-1120-3-288) designed to initiate and implement a targetted-unified workplace injury registry to inform policies and programs to reduce the health burden and the healthcare costs from WRI’s in Qatar. Methods: Data, on patients with WRTIs treated at the Hamad Trauma Center Trauma Registry from January 2015 to September 2016, were collected and analyzed according to road user type and characteristics. Results: A total of 260 WRTIs were admitted during the study period; 25.5% of all were work-related injuries. The in-hospital mortality rate was 5.4%. Motor vehicle crashes comprised 74% of WRTIs: 51% involved heavy vehicles (trucks or buses), 40% were unrestrained drivers, 15% were rollovers, and 10% were against fixed objects. 21% of victims were pedestrians and 81.8% from left-hand driving countries. There were no significant differences for age, mean Injury Severity Score (ISS), and intensive care unit and hospital length of stay. The mortality rate for pedestrians was twice that for MVC victims (10.9% vs. 4.2%, $P < 0.05$). Conclusion: Occupational safety programs should focus on increasing restraint use by drivers of heavy vehicles, driver education to prevent rollovers, and pedestrian education for workers from left-hand driving...
countries. The significantly higher mortality rate for pedestrians merits more focused analysis in the future.

**Trends and Patterns of Work-Related Road Traffic Injuries Involving Heavy Vehicles in Qatar**

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**Introduction:** Heavy vehicles (HVs) are a very common sight in Qatar due to ongoing infrastructure development, but their effect/s on WRRTIs in Qatar has/have not been reported previously. This study aims to analyze the work-related injuries caused by HVs; it was conducted as part of a larger grant (NPRP 7-1120-3-288) by the Qatar Foundation designed to initiate and implement a targeted unified workplace injury registry to inform policies and programs to reduce the health burden, in terms of deaths and disabilities, and the healthcare costs. **Methods:** A free text search using heavy vehicle terms such as “crane,” “truck,” and “bulldozer” was carried out on the Trauma Registry of the national trauma center. All WRTI patients, from January 1, 2015, to December 31, 2016, were included and their data were analyzed according to road user type and key epidemiologic characteristics. **Results:** Forty percent (40%) of all WRRTIs in Qatar involved heavy vehicles, 57% worked in the transportation industry, 83.8% were truck drivers, and only 8% of them were restrained. The driver victims were involved in head-on collisions (32%) and fixed object crashes (22%). It was also found that pedestrians (20%) and falling object victims (4.6%) had more severe injuries when compared to other mechanisms. **Conclusion:** HV-WRTIs are underappreciated as a major cause of severe WRTI in Qatar. Occupational safety programs should focus on decreasing operating hours by HV drivers and increasing restraint use, pedestrian worksite environmental modifications, and HV maintenance and repair standards. The limited available evidence necessitates more focused data capture and analysis in the future.

**Hypertonic Solutions in Traumatic Brain Injury: A Systematic Review and Meta-analysis**

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**Introduction:** To evaluate whether transcranial Doppler (TCD) monitoring plays a role as a prognostic indicator, by being both a diagnostic and a monitoring tool for increased intracranial pressure and cerebral vasospasm (VSP), in traumatic brain injury (TBI). **Methods:** Electronic databases and grey literature (unpublished articles) were searched under different MeSH terms from 1990 to present. Randomized control trials (RCTs), case–control studies, and prospective cohort studies on TCD in TBI (>18 years old) are included. **Results:** Twenty-five articles that met the inclusion criteria were retrieved and analyzed. Ultimately, five studies were included in our meta-analysis, which revealed that patients with TBI who had hypertonic saline had no statistically significant likelihood of having a good outcome at discharge or 6 months than those who had crystalloid (odds ratio [OR]: 0.01; 95% confidence interval [CI]: 0.03–0.05; *P* = 0.65). The relative risk (RR) of mortality in hypertonic saline versus the crystalloid at discharge or 6 months is – RR: 0.80; 95% CI: 0.64–0.99; *P* = 0.04. Subgroup analysis showed that the group who had hypertonic solution significantly decreases the number of interventions versus the crystalloid group OR: 0.53; 95% CI: 0.48–0.59; *P* < 0.00001 and also reduces the length of intensive care unit stay (OR: 0.46; 95% CI: 0.21–1.01; *P* = 0.05). **Conclusion:** Hypertonic saline decreases the financial burden but neither impacts the clinical outcome nor reduces the mortality. However, further clinical trials are required to prove if hypertonic saline has any role in improving the clinical and neurological status of patients with TBI versus the normal saline/lactated ringers.

**The Role of Transcranial Doppler in Traumatic Brain Injury: A Systemic Review and Meta-analysis**

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**Introduction:** Splenic artery aneurysm (SAA) is the third most common type of intra-abdominal aneurysm and accounts for 40%–60% of all cases of visceral artery aneurysms. The risk of rupture of SAA ranges from 3% to 25% with a mortality rate of 25%–70%. There is currently no management pathway for SAA.

**Methods:** A literature search was performed using “keywords” in Medline and Embase limited to publications from 2008 to 2018. Two hundred and eighty-nine articles were identified during the initial literature search. One hundred and forty-three articles met the eligibility criteria. Eighty-three articles were included in the quantitative synthesis. **Results:** 576 patients were identified with 588 reported SAs. Types of intervention reported were endovascular treatment, open surgery, laparoscopic surgery, and conservative management. 201 (36.0%) patients were managed with endovascular treatment, 122 (21.9%) patients with open surgery, 56 (10.0%) patients with laparoscopic surgery, and 179 (32.1%) patients with conservative management. Mortality rate in patients with endovascular treatment was 0.5% compared to 4.9% with open surgery. 3.4% of patients with conservative management were reported to have aneurysms that grew over time and 2.8% of patients had further intervention. **Conclusion:** Further studies are required to determine the long-term durability of endovascular treatment. Endovascular treatment is the standard of care for splenic artery aneurysms. By introducing a management pathway for SAA, we hope to see an improvement in managing patients with SAA. The management algorithm will require further validation through application with careful and complete follow-up of all cases to improve the pathway depending on patient outcome.

**Modified STONE Criteria: Validation as a Clinical Prediction Tool as a Guide in Imaging Patients with Suspected Uncomplicated Ureteric Colic**

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**Introduction:** Renal calculus is one of the important causes of flank pain. Computed tomography (CT) scan is gold standard in the diagnosis of ureteric calculi. Considering the cost of CT scan and unnecessary exposure in patients with alternative diagnosis a score which can clinically predict the likelihood of ureteric calculi would likely reduce the number of CT kidneys, ureters, and bladders (KUBs) performed from the emergency department (ED). Stone Score: STONE score is a clinical prediction tool in patients with suspected uncomplicated ureteric calculus which includes sex, timing, origin, nausea and vomiting, erythrocyte in urine. By eliminating the origin and also modifying the time of presentation, we use the other components of the STONE score to predict the likelihood of ureteric colic in suspected patients.

**Methods:** It was a prospective observational study conducted in the Department of Emergency Medicine, Apollo Hospitals, Chennai, between August 2018 and October 2018. One hundred patients with suspected ureteric calculi were included in the study.

**Conclusion:** We conclude from our study that high modified STONE score had a sensitivity of 83% for ureteric calculi reducing an alternative diagnosis, and hence, the criteria can be used as a clinical prediction tool in ED and by trying to eliminate high dose CT KUB for this group or usage of reduced dose CT in the future. For patients with mild and moderate scores, we suggest further clinical evaluation and imaging modalities.

**Resveratrol Counteract Oxidative Stress and Endothelial to Mesenchymal Transition Elicited by High Glucose in Human Retinal Endothelial Cells**

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**Introduction:** Chronic hyperglycemia, during diabetes-associated complications such as diabetic nephropathy and cardiopathy, may lead to an increased reactive oxygen species (ROS) generation and oxidative stress, ultimately resulting in a process known as endothelial to mesenchymal transition (EndoMT). This study aimed at investigating whether EndoMT is implicated in the fibrotic process during diabetic retinopathy and evaluating the possibility that resveratrol could counteract EndoMT by inhibiting high glucose (HG)-induced ROS increase. **Methods:** Primary human retinal endothelial cells (HRECs) were either pretreated for 48 h with 1 μM resveratrol or left untreated. After that, glucose at 40 and 70 mM was applied for 4 days, and qRT-PCR was used to detect mRNA expression of CD31, CDH5, VIM, and collagen I. The levels of intracellular ROS were also measured using the ROS-sensitive fluorescent probe carboxy-DCFDA. **Results:** Treatment of HRECs with HG elicited an increase of intracellular ROS levels along with the cellular phenotype shift through EndoMT, as evidenced by the decrease in the endothelial marker CDH5/CD31 and the increase in the mesenchymal markers VIM and collagen I. Noteworthy, HG-elicted ROS generation and EndoMT transition were counteracted by resveratrol treatment. **Conclusion:** We believe that demonstrating the occurrence of EndoMT in diabetic ECs and the efficiency of resveratrol treatment to counteract HG-induced oxidative stress and EndoMT may pave the way for a potential protective therapy to prevent diabetic-associated complication including fibrosis. Further analysis is needed to study the effect of different dosage of resveratrol on ROS formation as well on the EndoMT markers. Moreover, a more prolonged glucose exposition may be necessary to mimic the hyperglycemic condition during the long-term complications associated with diabetes and be able to observe a complete HRECs phenotype shift.

**Funding:** This research was supported by grants from the Qatar University (QUCG-CHS-2018-2019-1/QUST-2-CHS-2017-7/QUST-2-CHS-2017-8).

**Protein Kinase C Mediates High-Dose Resveratrol Toxicity on Human Endothelial Cells**

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Introduction: Endothelial cells (ECs) play a pivotal role in maintaining cardiovascular homeostasis, and reactive oxygen species (ROS)-induced ECs dysfunction is a critical step in cardiovascular diseases development. Dietary intake of natural antioxidant (NA) is thought to provide cardiovascular benefits. Resveratrol (RES) is a natural antioxidant present in the diet. Although many scientific evidences show that RES decreases oxidative stress, we have previously demonstrated that high dosage of RES induces mitochondria-dependent pro-oxidant damage of human ECs, which is mediated by cytochrome CYP2C9 ROS production and AKT downregulation. Methods: Human umbilical ECs were treated with 1, 10, 50 μM RES and then experimentally processed. Results: High doses of RES negatively impact protein kinase C (PKC) activity inducing ECs apoptotic death as evidenced by the increased DNA fragmentation. Downregulation of PKC activity correlated with the inhibition of Bel-2 gene expression and the increase of Bax, which play respectively an anti- and pro-apoptotic role. Ulterior molecular analyses indicated the inhibition of c-myc and ODC gene expression, two genes involved in the regulation of cell cycle progression. Indeed, impairment of cell cycle progression was further confirmed by cyclin D1 protein downregulation and accumulation of ECs in S or G1/G0 phase. Conclusion: Besides providing new molecular insight concerning the impact of NA on ECs, our results also suggest that identification of an optimal dosage is essential to have a great benefit–risk ratio in all the forms of RES consumption.

Funding: This research was supported by grants from the Qatar University (QUCG-CHS-2018-2019/1/QUST-2-CHS-2017-7/QUST-2-CHS-2017-8).

Posttraumatic Stress Disorder: Insights from a Level 1 Trauma Center in Qatar

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Introduction: Traumatic injuries may impact victims psychologically. Posttraumatic stress disorder (PTSD) is a condition in which an individual, who has gone through or witnessed a life-threatening experience, manifests symptoms of anxiety and avoidance, besides others. Not every such person develops PTSD. This study aimed to assess the prevalence of PTSD among patients of traumatic injury in Hamad Medical Corporation (HMC), Qatar. Methodology: This prospective study enrolled patients admitted to trauma units in HMC during 2018–2019, following traumatic injury. Consenting patients were included in the study and completed the PTSD Checklist (PCL-5) after 1 month of the injury, in the preferred language of the patient. Patients with score ≥33 on the checklist were considered positive for PTSD based on DSM-5 diagnostic criteria. Data were tabulated and assessed for the prevalence of PTSD. Results: A total of 207 patients consented to participate in the study and 115 (109 males and 6 females) completed the PCL-5 checklist for PTSD. There were 44% drop-outs. Twelve patients met the cutoff score. The overall prevalence of PTSD was found to be 10.4% of which 33% were Qatari nationals and 67% were non-Qatari residents. 67% of patients, who developed PTSD, had age ranging from 20 to 35. PTSD developed in 11.5% patients of motor vehicle Crash, 50% assault victims, 16.7% motorcycle crash, and 14.28% fall from height. Conclusion: These scores indicated that PTSD has high prevalence in the patients of traumatic injury and psychological intervention could assist healthy re-integration into the society.

Incidence, Etiology, and Characteristics of Adult-Onset Anaphylaxis in Qatar

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Introduction: Adults constitute 83% of the total population of Qatar where no data related to anaphylaxis have been recorded. We sought to describe the clinical presentation, inducers, management, and disposition of adult-onset anaphylaxis in Qatar. Methods: Data were accumulated over 3 years (July 2014–2017) from the Adult Emergency Department. Patients 14 years and older were selected using International Classification of Diseases-9 diagnostic codes for allergic reactions, anaphylaxis, and food allergy. Cases were classified according to the criteria set by the National Institute of Allergy and Infectious Diseases/Food Allergy and Anaphylaxis network for anaphylaxis diagnosis. Results: A total of 478 cases were identified and reviewed. The mean age was 38 years and females (72%) had a majority over males (27.8%). Triggers such as insect bites were 51.36% (where black ant was 34.10%), food 44.67%, medication 5.98%, and idiopathic cases 19.8%. Comorbidities such as asthma and eczema were 17.6% and 6.4%, respectively. Other chronic illnesses included diabetes mellitus, hypertension, and thyroid problems in 48.1% patients. In food etiology, seafood was 6.1%, eggs 2.1%, tree nuts 1.25%, poultry and beef as 2.3% cases. Cutaneous symptoms included localized rash 50%; generalized skin manifestation (i.e., urticarial rash, angioedema, and pruritus) 98%; and other symptoms including 39.1% respiratory, 37.7% cardiovascular, 16.6% gastrointestinal, and 11.7% neurological. Concomitant adrenaline as the first-line drug was used in 22.3% cases and antihistamines were used predominantly in 91% cases for management. Epi-pen was prescribed in 6% cases and 15.2% were followed up with an immunologist. Conclusion: Emergency department physicians must be educated to use adrenaline as the first-line treatment. Referrals to seek consultation by an immunologist must be encouraged to prevent frequent reactions.

Etiology and Characteristics of Patients Presenting with Anaphylaxis to the Pediatric Emergency Centers in Qatar

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Introduction: Anaphylaxis is a serious, life-threatening allergic reaction. With five pediatric emergency centers (PECs) distributed countrywide, it serves an average of 610,000 patients annually. The triggers, comorbidity diseases, and management due to anaphylaxis have not been investigated before in Qatar, and this is the first study on this topic.

Methods: Patient records of children younger than 14 years presenting to PEC from 2011 to 2016 were identified using International Classification of Diseases-9 diagnostic codes for anaphylaxis. The patient charts were reviewed and classified according to the criteria set by the National Institute of Allergy and Infectious Diseases/Food Allergy and Anaphylaxis Network for Anaphylaxis diagnosis. Results: Anaphylaxis was identified in 395 out of 1051 files reviewed. The incidence of anaphylaxis was 13.3 per 100,000 visits. Patients below 1 year of age were 17% with 69% males. The mean age was 3 years. Among triggers, food items were 53.1%, insect venom 25%, medication 7%, aeroallergens 3%, idiopathic 10%. Asthma was associated with all five cases admitted to PICU and with 55% of recurrent anaphylaxis. Bihpastic reaction observed was 2%, and no deaths reported. Comorbidities include asthma in 42% and eczema in 27% with 23% below 1 year of age. Among the food, tree nuts/mixed nuts were 30.5%, dairy products 10% with 85% of these cases below 2 years, sesame seeds and egg 7% for each, seafood 4%, while camel milk in 1 case. Black ant was seen in 48% of the insect bites. Presenting symptoms include cutaneous 95.2% of cases, respiratory 70.1%, gastrointestinal 41.2%, cardiac 8.1%, and neurological 5.3%. Adrenaline was used for the treatment in 91.6%, antihistamines in 93.9%. Epinephrine auto-injectors were prescribed upon discharge for 88%. Referral to an allergy clinic was seen in 82%, where 60% were followed up and investigated. Conclusion: Anaphylaxis affects an estimated 1 in 1000 Qatari pediatric population. While food allergy was predominant, black ant was also common. Physician and community awareness of anaphylaxis, its etiology, management, and comorbid diseases associated with it is highly recommended.

First Electronic Trauma Data Bank in Sri Lanka: Development and Implementation

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Introduction: Organized trauma systems have been shown to save lives, but the lack of quality injury data remains a major obstacle. To address this issue, some countries have deployed electronic databases called trauma data banks (TDBs), but in most developing countries, TDBs either do not exist or, where they exist, are not up to the expected standards. Our objective was to create the first ever electronic TDB (eTDB) in Sri Lanka. Methodology: A multidisciplinary team was established and focus group discussions were held to identify core data set and hardware and software requirements. Injury severity calculation was based on anatomic and physiologic scoring system and calculations were validated using an online tool of trauma.org. The system also captures routine injury surveillance data and generates pre-determined reports and customizable reports. Database of the eTDB was developed using MySQL and PHP, front end using Javascript and hosted on a Linux server. The system was deployed in central serves with a backup at local level. Laptop computers and mobile devices were used for data collection. Results: The eTDB was implemented at the Accident and Orthopedic Service at the National Hospital of Sri Lanka with careful planning and change management. Users were given formal lecture-based training and on the job, hands-on training. Different user levels were created with different levels of accessibility to the system. Conclusion: The introduction and use of the eTDB have led to several improvements in clinical management, surveillance systems, and policy measures for the care of injured patients.

Clinical Case Abstracts

Idiopathic Spontaneous Rupture of Urinary Bladder: Case Report and Use of Bedside Ultrasound

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Introduction: Spontaneous rupture of the urinary bladder is a rare condition. It is often difficult to diagnose in the busy emergency department (ED). Significant morbidity and mortality can result from a missed or delayed diagnosis. Case Report: A 27-year-old male patient presented at the ED, Hamad General Hospital, with the inability to pass urine since last night associated with abdominal pain. The pain initially started in the suprapubic region and then became generalized all over the abdomen. No other symptoms and no history of trauma were noted. He was a nonsmoker or alcoholic. On examination, the patient was conscious, oriented, but in severe distress and diaphoretic. Vital signs are as follows: heart rate: 154 b/m; respiration rate: 26 b/m; blood pressure: 156/98 mmHg; and SpO2 99% on room air and temperature 36.6°C. On examination, abdomen was soft, non tender with audible bowel sounds. Bedside ultrasound showed positive free fluid. A urinary catheter (F14) was inserted which revealed frank hematuria. A provisional diagnosis of rupture bladder was made with an emergency consultation to a urologist on-call which confirmed the bladder rupture through contrast computed tomography scan. Discussion: Idiopathic spontaneous bladder perforation is a rare, life-threatening clinical condition. It is not always possible to diagnose by radiological imaging. A small number of idiopathic spontaneous bladder perforation cases have been reported in the literature. Bedside ultrasound is a useful diagnostic tool during the initial assessment of the ED. Conclusion: Bedside ultrasound is a useful tool in the initial assessment of such patients. It can be used to expedite management in this disease entity with time-sensitive high mortality rates.
Masquerade as Malignancy: A Recurrent and Progressive Disease of the Urinary Bladder
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Introduction: Primary bladder amyloidosis assumes clinical importance as it clinically masquerades as a malignancy as in the case presented. Isolated bladder amyloidosis is most frequent in the fifth and sixth decades. It has equal sex preponderance. It was first described by Solomon in 1897, with <200 cases reported worldwide. Case Report: A 41-year-old man presented for the first time to the Accident and Emergency Department in 2012 complaining of hematuria that lasted for 10 days duration that was intermittent, painless, terminal, and frank, with passage of clots associated with mild dysuria. The patient was a nonsmoker with no comorbidities. Discussion: Primary isolated amyloidosis of the urinary bladder is a rare disease with 200 cases reported by Michael et al. The amyloid was first described by Virchow in 1854. The first case of isolated urinary bladder amyloidosis was described by Solomin in 1897. This condition is a disease of protein metabolism characterized by amyloid protein fibril deposition in the extracellular spaces of body tissues. Conclusion: Primary amyloidosis of the urinary bladder is a rare disorder. The etiology remains unknown and most patients present with intermittent, painless gross hematuria. Cystoscopic and histopathological examination is important to diagnose this condition as it resembles bladder malignancy. This case demonstrates that primary amyloidosis of the urinary bladder is a recurrent and progressive nonmalignant disease. Transurethral resection and fulguration of the lesion remain the standard treatment with long-term follow-up with annual check cystoscopy.

Minor Trauma Can Surprisingly Cause Posterior Sternoclavicular Joint Dislocation with Serious Complications! A Clinical Warning
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Introduction: Sternoclavicular joint (SCJ) dislocation is a rare injury; posterior dislocation is the rarest subtype. Approximately 120 cases of posterior SCJ dislocation have been documented in the medical literature since it was first described by Sir Astley Cooper 170 years ago. All cases reported in the literature were associated with major trauma, sporting injuries, and motor vehicle accidents which account for the most causes of SCJ dislocation. We report a case where the patient had mild trauma associated with serious complications due to compression of the retrosternal structures. Case Report: A 22-year-old male patient with no underlying any medical condition presented to the emergency department complaining of pain over the left shoulder and the collarbone plus dysphagia after having a minor fall on his left outstretched arm. His examination revealed localized tenderness over the left SCJ with mild swelling and normal [Figures 1 and 2] vitals. Plain X-ray films were completely normal; in light of high clinical suspicion, computed tomography (CT) with contrast was ordered showing posterior SCJ dislocation with retrosternal hematoma causing a shift of the trachea and esophagus to the right side. Conclusion: SCJ dislocations are rare but with potentially life-threatening consequences. It does not need high energy force to happen, so vigilance and high clinical suspicion are usually warranted. Routine radiographs are often difficult to interpret and may falsely appear normal, CT with contrast is the preferred diagnostic tool.

Simultaneous Bilateral Neck of Femur Fracture in a Young Adult
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Introduction: Simultaneous bilateral fractures of the femoral neck are considered very rare injuries. Few cases were reported in the literature. Most of reported cases were elderly
and had been associated with high energy trauma, seizure, electrical shock, severe Vitamin D deficiency, osteoporosis, parathyroid hormone dysfunction, renal dysfunction, or malignancy. **Case Report:** We report a case of a 31-year-old male patient who presented to the emergency department with bilateral hip pain and inability to bear weight after a sudden loss of consciousness and fall while running on a treadmill. The patient had recent history of anabolic steroids, growth hormone, and other supplements used for bodybuilding. Radiological studies confirmed bilateral neck of femur fracture. Laboratory investigations revealed pan-pituitary axis insufficiency and mild Vitamin D deficiency. The patient was treated with three 6.5 mm cannulated cancellous screws on the one side and dynamic hip screw on the other side and was followed with strict physical therapy rehabilitation plan; 6 months from the injury, a radiographic bilateral union achieved with the patient back to his normal daily activity and noncontact sports. **Conclusion:** We report this rare case of bilateral neck of femur fracture in a young adult with low energy trauma and mild Vitamin D deficiency. Ruling out other biological underlying etiology, early diagnosis and early fracture anatomic reduction and fixation is crucial to decrease potential complications such as avascular necrosis and fracture nonunion.

**Upper Respiratory Tract Infections in Children: Look for a Foreign Body Too!**

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**Introduction:** Nasal foreign bodies in children can get overlooked and inadvertently misdiagnosed as simple rhinitis due to overlapping clinical features. **Case Description:** A 2-year-old female child presented to the emergency department with a 2-day history of a unilateral nasal discharge. A day earlier, she had attended the pediatric emergency center and another childcare clinic for the same complaint. An upper respiratory tract infection was diagnosed with treatment prescribed accordingly at both healthcare centers. However, her symptoms worsened over the next few hours. The concerned parents decided to get her nasal X-rays done at a diagnostic center. The images revealed a radiopaque circular foreign object lodged in the nose. The patient was brought to the emergency department again. On clinical examination, the right anterior nasal cavity was found filled with a frothy yellowish discharge. An anteroposterior imaging confirmed the presence of a button battery in the right nasal cavity. Immediate otorhinolaryngology consultation was sought, and the battery was removed under general anesthesia in the same evening. Operative findings showed extensive mucosal necrosis in the right nasal cavity with partial erosion of the septal cartilage. **Conclusion:** In winters, due to a higher prevalence of respiratory illness in the pediatric population, there is a risk of missing any concurrent nasal foreign body. The contents of a button battery can leak and cause severe complications. A high index of suspicion must be maintained for any purulent nasal discharge. Whenever in doubt, nasal X-rays must be obtained as soon as possible.

**Anaphylaxis as the Initial Presentation of an Isolated Pulmonary Hydatid Cyst**

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**Introduction:** Anaphylaxis as the initial presentation in pulmonary hydatid cyst is rare with reported incidence of 0%–3%. **Case Report:** A 28-year-old gentleman presented to the emergency department with sudden-onset cough and breathlessness while having dinner. On arrival, his vitals were as follows: respiratory rate – 32/min, SpO$_2$ – 80% on room air, pulse rate – 130/min, blood pressure – 90/60 mmHg. Generalized flushing was noted on arrival. He was immediately started on oxygen at 10 L/min and intravenous fluids. Further evaluation revealed bilateral rhonchi in the chest and reduced breath sounds in left inframammary and left infra-axillary areas. With a clinical diagnosis of anaphylaxis, epinephrine 0.5 ml (1:1000)

Figure 1: Chest X-ray showing oval homogenous opacity on the right and a cystic cavity with air-fluid levels on the left

Figure 2: USG showing cyst on the right
was administered intramuscularly in the anterolateral aspect of thigh. In addition, hydrocortisone 200 mg and pheniramine maleate 2 ml (45.5 mg) were given intravenously. Within 5 min, his vitals improved to respiratory rate – 24/min, SpO₂ – 94%, pulse – 110/min, blood pressure – 100/70 mm Hg with reduced rhonchi and erythema. He improved further in the next 5 min with stabilization of vitals and disappearance of rhonchi. A chest X-ray was done in view of reduced breath sounds on the left side. It revealed an oval homogenous opacity on the right and a cystic cavity with air-fluid levels on the left [Figure 1]. Bedside ultrasound showed a cyst on the right [Figure 2] and a cyst with membranes on the left [Figure 3]. Contrast-enhanced computed tomography chest confirmed the diagnosis of spontaneously ruptured left hydatid cyst and intact cyst on the right [Figures 4 and 5]. The patient was admitted and underwent thoracoscopy and unroofing of the cyst on the right side with the injection of scolicidal agent and thoracoscopy-guided drainage on the left side and was later discharged in stable condition.

Discussion: This case illustrates the importance of considering hydatid cyst as a cause of anaphylaxis and its emergency management for optimum patient care.

A Case Series of Antepartum Uterine Rupture in Emergency Department

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Introduction: Uterine rupture is a rare and life-threatening complication encountered in the emergency department (ED). It most commonly occurs during labor; hence, uterine rupture during the antepartum period in ED is a rare event. This is a case series of four females in their third trimester presented to the ED with nonspecific clinical features of uterine rupture who were diagnosed early with the help of bedside ultrasound, and emergency surgical intervention was done. Methods: A series of four cases of uterine rupture were observed in ED of BMH, Calicut. Results: Three cases out of four had a history of two previous LSCS, but one was a primi without any risk factors for uterine rupture. Abdominal pain and decreased fetal movements were the most common presenting complaints. Typical signs of shock and hemoperitoneum were absent in all cases initially. Bedside ultrasound showed massive hemoperitoneum and absent fetal cardiac activity in all cases initially. There was one maternal mortality. Conclusion: Uterine rupture is a rare obstetric emergency. High index of suspicion is the key for early diagnosis since the absence of typical clinical features and risk factors does not rule out uterine rupture. Signs of shock may be delayed due to physiological changes in pregnancy. Peritoneal signs may not be present because of the lifting of anterior abdominal wall, which makes the role of bedside ultrasound more important in early diagnosis. Emergency physicians should be aware of this rare complication since aggressive resuscitation with early surgical intervention is the only definitive treatment.

Traumatic Right Diaphragmatic Hernia with Liver Herniation and Intestinal Obstruction: A Case Report

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Abstracts

**Introduction:** Right diaphragmatic hernia is a rare injury after blunt abdominal trauma due to the protective function of the liver as well as the congenitally stronger right hemidiaphragm. It can be missed initially due to its nonspecific symptoms and signs and present several years after the trauma with complications. We report a case of delayed presentation of traumatic right diaphragmatic hernia with liver herniation and intestinal obstruction which presented 19 years after road traffic accident. **Case Report:** A 31-year-old male presented to the emergency department with complaint of abdominal pain and constipation for 10 days duration, associated with projectile vomiting. He had an accident 19 years ago resulting in colonic injury requiring left colostomy which was closed later on. His physical examination revealed tenderness in the lower abdomen with diminished bowel sounds. Laboratory findings were not significant. X-ray abdomen showed elevated right hemidiaphragm, multiple dilated bowel loops with air-fluid levels in the right subdiaphragmatic region. Computed tomography thorax and abdomen with contrast showed large right anterior diaphragmatic defect containing herniated liver, gallbladder, and multiple dilated fluid-filled small bowel loops showing air-fluid levels up to T4 level with intestinal obstruction. The patient was admitted for exploratory laparotomy, right diaphragmatic hernia repair, adhesiolysis, and segmental bowel resection and anastomosis. His postoperative course was complicated with wound infection which was treated with intravenous antibiotics. He was discharged after 20 days in good clinical condition. **Conclusion:** Right diaphragmatic hernia is a rare injury that should be considered during evaluation of trauma patient to avoid complications.

**Case Report of Leprosy Diagnosis in the Emergency Department: A Potential Challenge in Nonendemic Areas**

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**Introduction:** As per the World Health Organization definition of prevalence lower than 1 case per 10,000 persons, leprosy has been eliminated as a public health threat. However, it is not clear how many unreported cases exist in less-developed world; leprosy is likely more common than currently reported. Current estimates are that 220,000+ new cases are diagnosed worldwide each year. **Methods:** We encountered a 29-year-old Indian male who presented to the emergency department (ED) with nontender skin eruptions, left forearm numbness, and low-grade fever for 2 weeks. **Results:** Physical examination revealed decrease in sensation of the left arm, left hand, and dozens of nontender nodular skin lesions of varying diameter. The patient was treated with a multidrug regimen and underwent various blood imaging tests and skin biopsy. **Conclusion:** The fact that leprosy may be more common in some parts of the world than indicated by available data stands in contradistinction to the rarity with which the disease is seen in highly developed countries. ED physicians in countries such as Qatar have never seen leprosy, and with globalization of economies and labor forces, it is likely that leprosy may increase in incidence in developed countries. Literature reveals that leprosy tends to be frequently misdiagnosed or mismanaged when presenting in countries with low incidence. The ED physician is thus well advised to consider a patient’s geographic origin and consider leprosy as a potential cause for skin lesions and findings such as described in this case – the main barrier to diagnosing leprosy in nonendemic areas is not considering it.

**Clinical Presentation and Outcome of Spinal Cord Injury without Radiological Abnormality Patients: Experience from Qatar**

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**Introduction:** Following trauma, the commonly used radiological investigations, plain X-rays and computed tomography (CT) scan do not rule out injury to the spinal cord. Spinal cord injury without radiological abnormality (SCIWORA) is an uncommon presentation which is usually seen in the extreme of ages. We aimed to determine the clinico-radiological correlation of patients with SCIWORA. **Methods:** The study population consisted of all patients with suspected cervical spine injury with neurodeficit. A total of 149 out of 677 patients of spine trauma had neurodeficit on clinical examination. SCIWORA was defined as neurodeficit despite normal radiography or a neural injury on magnetic resonance imaging. A retrospective review of all patients admitted to our verified Level-1 trauma center with cervical spinal cord injury was performed. All patients with vertebral injury identified on CT scan of the cervical spine were excluded. **Results:** Neurologic findings at the time of diagnosis and in the early and late periods vary independent of radiological findings. A total of 11 patients were documented as SCIWORA. A large number of our patients suffered trauma due to falling object and falls. **Conclusion:** Clinical findings and prognosis demonstrate no correlation with radiological findings.

**Perspectives of Emergency Ultrasound in Scrotal Injury**

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**Introduction:** Ultrasound (US) is proven to be the modality of choice for the initial evaluation of patients with scrotal injury. It helps the attending physician to decide the management approach, whether conservative or surgical. A range of findings are depicted from intra-and extra-testicular hematomas to testicular rupture. **Methods:** This is a nonrandomized retrospective study. This study aims to analyze the different US findings in scrotal injury, their associations, site of injury, and complications if any. Inclusion criteria: All patients admitted to Hamad General Hospital Emergency Department with scrotal trauma and had been investigated by US as part of their diagnostic workup. Cases were collected from Clinical Imaging.
Department RIS/PACS system at HGH. Period: (January 2014 to May 2018). Exclusion criteria: Cases with no documented clinical and/or ultrasonic diagnosis. Results: Total patients included in the study were 25 cases with median age of 31 years (8–45 years). Blunt trauma was the main mechanism of injury followed by penetrating trauma; both hemi-scrotums were affected with the right side more than the left. Total US findings of testicular injury in the 25 cases are 54 as a single finding or in combination. Intratesticular hematoma and rupture testes were the most common US findings in 17 cases and 15 cases, respectively, followed by haematocoele in 13 cases, epididymal injury in six cases, extratesticular hematomas in two cases, and one case of testicular rupture being complicated by infarct. Conclusion: The presence of multiple US findings is common in testicular injury, and this association appears to increase with severity. Management is determined by the severity of the injury. Hence, familiarity of the radiologist and attending physician with these diverse appearances is paramount. Most important is vascularity assessment with color Doppler.

Postpercutaneous Nephrolithotomy Hematuria: Alarming One
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Introduction: Intrarenal pseudoaneurysm is a rare, yet clinically significant, complication of percutaneous nephrolithotomy (PCNL). A high index of clinical suspicion is necessary to recognize pseudoaneurysm as the cause of delayed bleeding after PCNL and angiography confirms the diagnosis which allows endovascular management. Case Report: A 42-year–old patient, with a 2 cm calculus located in the pelvis of the left kidney, underwent supine PCNL. Percutaneous access was achieved through the lower calyx: the procedure was uneventful and the intra-operative blood loss was minimal. On the 10th postoperative day, the patient developed gross hematuria and severe pain of the left loin. A significant drop in the hemoglobin level was noted (from 13.5 g/dL to 11.8 g/dL), but she remained hemodynamically stable and the coagulation parameters were within normal limits. She was initially treated conservatively with bed rest, but gross hematuria persisted. An abdominal computed tomography scan revealed the presence of a large left perinephric hematoma with active extravasation of contrast. An urgent selective left renal angiogram was arranged to achieve endovascular control of the bleeding vessel. Access was achieved through the right common femoral artery, and selective catheterization of the left renal artery was performed. Discussion: Percutaneous access to the upper urinary tract was first described in 1955, while PCNL was introduced 20 years later. Since then, PCNL has undergone many refinements and is considered to be the current method of choice for the management of large, or otherwise complex, renal stone disease. Despite being a minimally-invasive technique, PCNL is associated with clinically significant bleeding, with transfusion rates in contemporary literature between 5% and 18%. Major vascular complications caused by vessel injury during PCNL namely, PAs or arteriovenous fistula, usually present as delayed postoperative bleeding after a mean delay of 8 days. The percutaneous tract disrupts the normal vessel wall and a PA is formed from the tissues surrounding the high-pressure arterial system, resulting in recanalization between the intravascular and extravascular space that produces a pulsating, encapsulated hematoma. Conclusion: As a result of its high efficacy, interventional radiology has largely replaced open surgery for the management of renal pseudoaneurysm related to PCNL. Recent technical advancements have allowed the use of covered stent grafts as an alternative to embolization for the angiographic management of visceral artery pseudoaneurysm located in other organs.

Warfarin-Induced Spontaneous Retroperitoneal Bleed from the Renal Vein: an Uncommon Etiology for Abdominal Pain with Shock in the Emergency Department
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Introduction: The overall major bleeding rate in atrial fibrillation patients on warfarin therapy is approximately 4%. Of these 4%, spontaneous retroperitoneal hemorrhage (SRH) is a rare presentation, but potentially lethal, with a nonspecific presentation that can lead to missed or delayed diagnosis. Current literature is limited, providing little direction in diagnosis and management. Anticoagulation-related SRH appears to have high mortality, about 20%. A prompt diagnosis is crucial despite the vague presentation to reverse anticoagulation and prevent further bleeding. Computed tomography (CT) of the abdomen with intravenous contrast is the imaging of choice in suspected cases. SRH patients require aggressive management with blood transfusions, interventional radiological procedures, percutaneous drainage, or surgical evacuation of the hematoma. Case Presentation: We report a case of warfarin-induced SRH from the renal vein that presented to our Emergency Department as a case of acute nonspecific abdominal pain with shock. The diagnosis of warfarin-induced SRH was based on the clinical suspicion and characteristic CT findings. The patient was managed conservatively at first, then embolization of the right renal artery was performed during the late course of hospital stay, and he was discharged with good recovery. Conclusion: Spontaneous retroperitoneal hemorrhage should be considered among the differential diagnoses of abdominal pain, hypotension, and/or drop in hemoglobin, in patients on anticoagulation therapy, especially in those with pre-existing end-stage renal disease.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.