Found 308 Abstracts

ABSTRACT FINAL ID: OS01-A;

TITLE: Long-term Prospective Validation of Relationship Between ED Occupancy and Patients Leaving Without Being Seen

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Previous work has suggested the number of patients in ED (excluding observation unit) before 11:00am is predictive of the proportion who do not wait to be seen (DNW) during the whole of the day. Our objective was to prospectively validate this relationship over an extended period and to identify opportunities for intervention. METHODS: Prospective descriptive study of 140 consecutive 24 hour periods beginning 05:00 6 Sep 2010 in a tertiary mixed adult/paediatric ED. Hourly ED occupancy figures with all patients waiting or being treated but not in the observation unit were extracted from the ED information system. The primary hypothesis was that days on which the occupancy exceeded 33 patients (established in derivation study) before 11:00 would have a higher DNW. The secondary hypothesis was that on days exceeding the threshold limited increases in occupancy over the 3 hours after 11:00 would be associated with lower DNW. RESULTS: The days with occupancy below the threshold by 11:00 averaged 164 presentations and 9.6% DNW (95% CI 8.9-10.3) and the days with occupancy above the threshold by 11:00 averaged 168 presentations and 13.4% DNW (12.9-13.9), representing an additional 6.8 patients per day leaving without being seen. Over 90% of DNW patients arrived after 11:00. Subgroup analysis confirmed that on the 11 days when the threshold was exceeded by 11:00 but occupancy remained 40 or below by 14:00, DNW was 10.0% (8.6-11.5). Exceeding the threshold by 11:00 was 77% sensitive and 51% specific for predicting a day with DNW exceeding 10%. CONCLUSIONS: The relationship between occupancy and subsequent DNW is validated in this setting. ED occupancy is not dependent simply on presentations but may be subject to interventions such as admission to the observation ward and expedited transfer of patients awaiting ward beds. Further study should examine the use of such interventions on days identified as high because it suggests that limiting the occupancy increases by 14:00 has beneficial effects on DNW.

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ABSTRACT FINAL ID: OS01-B;

TITLE: Simulated Evaluation of Two Triage Scales in an Emergency Department in Israel

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Triage is a term that describes the sorting of patients based on the severity of their illness or injuries and chance of survival. In the emergency department (ED) of the Sheba Hospital Center as well as many hospitals in Israel there is currently no official system of triage. Using simulated case scenarios, we chose to evaluate the reliability of the Australasian Triage Scale (ATS) which is time based, versus the Emergency Severity Index (ESI) which also takes into account available resources. The objective was to compare the inter-observer reliability of two five level triage scales in an Israeli ED. METHODS: Ten nurses participated in a workshop that consisted of lectures and a practice session on ATS and ESI. The nurses then independently assessed a series of 100 simulated triage scenarios taken from actual ED patients, recording both their ATS and ESI triage scores. Afterwards they answered a brief survey about their demographics, nursing background, and comfort with the two triage scales. RESULTS: Seventy percent of the nurses had previously worked as triage nurses, but only 30% percent underwent a previous triage course. The nurses felt that ESI was slightly easier to use than ATS (4 versus 3.5, respectively, on a 5 point scale). The overall quadratically weighted kappa for ATS was 0.63 (95% CI: 0.56, 0.71), while for ESI it was 0.51 (95% CI: 0.43, 0.60). CONCLUSION: Of the two triage systems evaluated, the agreement among ATS is considered substantial versus that of the ESI which is considered fair, although more nurses found the ESI easier to use. Based on this study and the literature, we plan to implement a standardized triage system in the Sheba Emergency Department in a short time.

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ABSTRACT FINAL ID: OS01-C;

TITLE: Prospective Validation Study: Early Identification of Days with High Risk of Patients Leaving Without Being Seen

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Previous work has suggested the number of patients in ED (excluding observation unit) before 11:00am is predictive of the proportion who do not wait to be seen (DNW) during the whole of the day. Our objective was to prospectively validate this relationship in an audited sample of presentations. METHODS: Prospective cohort study of 35 consecutive 24 hour periods in a mixed tertiary ED beginning 05:00hrs 1-Aug-2010. Chart audit of all presentations with disposition DNW or incomplete disposition details was performed within 5 days to identify actual DNW. Hourly ED occupancy figures with all patients waiting or being treated but not in the observation unit were extracted from the ED information system. The primary hypothesis was that days having occupancy exceeding 33 (established in derivation study) before 11:00 was associated with higher DNW in presentations occurring on those days. RESULTS: 647 actual DNW identified from 699 audited charts out of 5826 presentations. ED occupancy exceeded the threshold of 33 before 11:00hrs on 16 days (46%) with an actual DNW of 13.4% (95% CI 12.1-14.7) compared to 9.2% (8.3-10.3) on days not exceeding the threshold (P<10E-6 Chi-square). Retrospective analysis subsequently showed that a total daily DNW of more than 14% was predicted by occupancy over 33 before 11:00hrs with 87.5% sensitivity. CONCLUSION: This predictor of DNW has been validated in this ED and should be tested with appropriate thresholds in other settings. It has potential to identify days at high risk of DNW before a significant number of patients have left, thus permitting an intervention such as expedited ED discharge and/or ward admission.

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ABSTRACT FINAL ID: OS01-D;

TITLE: Effects of Ambulance Diversion on AMI Mortality Rates

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Ambulance diversion, a practice in which EDs are temporarily closed to ambulance traffic, is especially problematic for patients suffering from time-sensitive conditions. However, there is little empirical evidence on its consequences on patient outcomes. METHODS: We use 100% Medicare claims data and daily ambulance diversion logs from four California counties between 2000 and 2005. We compare the mortality rates among patients whose nearest ED was not on diversion on the day of admission and three treatment groups: patients whose nearest ED were on diversion for <6 hours, 6-12 hours, or greater than or equal to 12 hours. We control for underlying differences in patient population by estimating zip codes fixed-effects multivariate regression models of time-specific mortality rates (7-day-, 30-day, 90-day, and 1-year) that also include patient characteristics, and adjust for seasonal trends. RESULTS: Mortality rates of any time horizon did not differ when comparing treatment groups where diversion of the nearest ED was under 12 hours with the control group. Adverse effects, however, were seen in the group of patients whose nearest ED was on diversion at least 12 hours or longer: they experienced a 2.8 percentage point higher 30-day mortality rate compared with the control group ($p<0.05$). The adverse effect was also present in the 1-year mortality rate (3 percentage points higher, $p<0.05$). CONCLUSIONS: Diversion is a signal of a larger access problem in the health care system. Our results suggest that optimal EMS policy should include provisions that minimize instances where hospitals are on diversion for prolonged periods of time, and that restructuring of hospital and larger system-level resources may be required to improve outcomes of patients in need.

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ABSTRACT FINAL ID: OS01-E;

TITLE: 'Virtual ED'–Utilization of a Discrete Event Simulation-based Framework to Improve Patient Experience Times in an Emergency Department

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Emergency Department (ED) overcrowding and associated excessive Patient Experience Times (PETs) have proven deleterious impacts on patient mortality. Strategies to reduce ED crowding are constrained by the necessity of maintaining concurrent safe patient-care. Computer modelling in a virtual reality has been successfully used in industry, providing real-time solutions. A Virtual-ED computer model, based on a Discrete Event Simulation-Based Framework (DESF) was constructed to determine the best simulation scenarios needed for effective real-time strategies to improve PETs. The 3 scenarios tested were: increasing medical staffing, increasing assessment space, and enforcing the national 6-hour boarding limit (Table 1). METHODS: Real-time patient flow was analysed with arrival rate, acuity, and dynamic interactions between key resources (staffing, physical capacity, and spatial relationships) process mapped with the IDEF0 tool. Extend Suite v.7 software was used to develop the DESF. 59,986 historical patient episodes were analysed and PETS, resource utilisation and Key Performance Indicators compared with the DESF. Scenario variables (Table 1) were added to the DESF and run for 3 month continuous blocks to eliminate confounders. Continuous verification of the DESF was ensured by using Kolmogorov Smirnov goodness of fit test (5% significance). The ultimate results of the simulation model were validated using 3 techniques; face validation, comparison testing, and hypothesis testing, with the deviation between actual and simulated results ranging from 1-9% with a mean 5% deviation. RESULTS: The Virtual-ED model shows that adoption of scenario 3 has the greatest impact on PETs and resource utility (Table 2) especially amongst patients who are discharged directly from ED care (48% improvement in PETs). CONCLUSIONS: Before instigating potentially ineffectual and costly real-time strategies, the construction of novel simulation scenarios in a 'Virtual-ED' may allow implementation of more effective yet inexpensive bespoke alternatives.

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ABSTRACT FINAL ID: OS01-F;

TITLE: Emergency Management of Sepsis: The Implementation of a Modified Triage Tool (SEPTIC) in an Inner City Emergency Department and its Effects on the Management of Sepsis

ABSTRACT BODY:

Abstract Body: OBJECTIVE: In the last decade, treatment of sepsis in a timely and structured fashion has been driven by strong evidence and guidelines. Unfortunately the triage systems for categorizing priority and urgency were developed prior to the era of EGDT and sepsis bundles. We developed a simple tool as an add-on to the Manchester triage system. The tool (SEPTIC) functions as an aide-memoir at the point of triage and allows assignment of higher triage category to the potentially septic patient, mainly in response to deranged observations. METHODS: We audited our management of severe sepsis before and after implementation of this tool, using the College of Emergency Medicine's and the Surviving Sepsis Campaign's agreed standards. We measured the compliance with the following individual surrogate markers. Serum lactate measurement; Timely administration of intravenous antibiotics; Intravenous fluid bolus administration; Blood cultures taken; Documented senior ED or ICU consultation; Urinary output measurement; Documented high flow oxygen; Complete set of vital signs at triage. We retrospectively tracked all admissions with severe sepsis over two fortnightly periods, before and after use of the SEPTIC tool. RESULTS: Our management of sepsis as indicated by compliance with the above surrogate markers improved. Across the specific categories the compliance before and afterwards respectively (with appropriate p values) was as follows: Lactate measurement 58% v 93% ($p<0.05$); IV antibiotics 69% v 93% (p,0.05); IV fluid bolus 62% v 79% ($p<0.05$); Blood cultures 50% v 71% ($p<0.05$); Documented senior help 58% v 57% ($p>0.05$); Urinary output measured 12% v 50% ($p<0.05$); High flow O2 23% v 71% ($p<0.05$); Complete set of vitals 38% v 36% ($p>0.05$). CONCLUSION: We describe a new triage tool for potentially septic patients which improves management of this cohort of critically ill patients.

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ABSTRACT FINAL ID: OS01-G;

TITLE: Regional Implementation of New Intake Processes Improves Access to Care for Mid-acuity Patients in Three Urban
Emergency Departments

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The evaluation of mid-level acuity patients who present to the ED is often hampered by access block. The goal of this study was to describe the impact of a three-phase evolution in re-engineered processes of care for mid-level acuity patients instituted in a three-hospital region serving over one million inhabitants. METHODS: Using administrative databases, access and quality of care were compared during three 5-10-month periods from 2008 to 2010. Phase I (2008) served as a control and involved MDs waiting for patients to arrive in traditional care spaces. In Phase II (2009) known as Waiting Room Care (WRC) MDs assessed patients in spaces located off of the main ED. In Phase III (2010) known as Triage-in (TI) patients were evaluated in dedicated spaces linked to a formal process of care. In both of these latter phases, patients requiring additional therapy or observation could be transferred to treatment or awaiting results zones. Primary outcomes were median time from triage to MD assessment, % of patients seen in WRC/TI, left without being seen (LWBS) and unplanned revisits (UR). Kruskal-Wallis and Chi-square were used for comparisons. All CTAS III patients were included in the analysis. RESULTS: A total of 62 917 CTAS III visits were included. The proportion treated in TI/WRC areas increased from 4.3% to 26.1% to 51.7% ($p < .001$) over the three phases. Median triage to MD assessment time fell significantly over the three phases of the study (157 versus 149 versus 135 minutes respectively ($P < 0.001$ for all comparisons). There was a reduction in LWBS from 12.5% to 10.9% to 8.6% over the 3 periods; $P <0.001$). UR within 72 hours was unaffected over the latter two phases; 7.1 % vs. 8.9 % vs 8.8 % respectively (P = NS for latter two). Potential confounders did not influence these results. CONCLUSION: We describe the impact of the first regionally implemented program for improving ED access times yielding significant improvements in access to care and generated improvements in quality of care.

AUTHORS/INSTITUTIONS: G. Innes, L. Mercuur, D. Wang, S. Dowling, E. Lang, , University of Calgary, Calgary, Alberta, CANADA;

ABSTRACT FINAL ID: OS02-A;

TITLE: Advanced Triage Introduction Utilizing Action Research

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Triage of emergency department (ED) patients is basic to emergency medicine (EM) care delivery. Routine ED triage systems are often not yet in place, however, in developing EM specialty systems. What is meant by 'triage' also varies. In developed EM systems, diagnostic studies are often begun from triage, a practice we have termed "advanced triage" (AT). Because AT is so common in developed EM systems, it is easy to forget that its introduction can be fraught with difficulties. AT represents a practice shift compared to models in which testing is typically ordered after patient examination. Because AT diagnostics are often initiated by nursing staff, it also represents a shift in the provider of this initial diagnostic step to nursing staff. The new nursing role may be viewed positively, as greater use of expert nursing knowledge & autonomy in patient care, but can also be perceived negatively due to uncertainty regarding nursing expertise to select the correct diagnostics, increased workload, & a real or perceived shift in responsibility for care decisions from physicians to nurses. METHODS: A novel program to introduce AT where it had never before been used was developed. This program utilized "action research" (AR) principles. In AR, workers improve both their work practices & understanding of their work environment by taking actions, then researching & reflecting on the consequences. In this case, participants developed a computer simulation model of their own workplace. RESULTS: Simulation allowed clarification of work environment variables & observation of effects for many possible actions. Participant motivation for AT resulted in worker implementation of AT. Actual operational results collected from 10 shifts following real-life AT implementation (n=198) indicated a significant reduction (14% or 14 minutes) in mean length of patient stay compared to baseline (n=506), with no decline in quality based on diagnostic procedures ordered. CONCLUSION: This successful AT implementation demonstrates that rapid transition to nursing-based AT can be accomplished in developing EM systems. AR with computer simulation is a promising way to facilitate that transition.

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ABSTRACT FINAL ID: OS02-C;

TITLE: Emergency Department Work Index and National Emergency Department Overcrowding Scale: Which One is Valid for Measuring Alzahra Emergency Department Overcrowding?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Emergency Medicine as a specialty program has been started in Isfahan University of Medical Sciences for about 2 years. Our Emergency Department (ED) is a level 3 referral center with about 60000 visits per year. After establishing Emergency Severity Index 4 (ESI4) as our main triage system, we focused our concerns on deciding on a valid tool for measuring crowding in our ED. METHODS: In this cross sectional longitudinal study we compared Emergency Department Work Index (EDWIN) and National Emergency Department Overcrowding Scale (NEDOCS) with a Visual Analog Scale (VAS) that was used at that time. We obtained the amount of EDWIN, NEDOCS and VAS values every 4 hours within 21 days. The data were analyzed by Pearson correlation test and Wilcoxon Signed Ranks. RESULTS: There was a significant (P = 0.0001) correlation between NEDOCS and EDWIN as the Correlation Coefficient was reported as r= 0.59. Moreover there was a significant (P= 0.0001) correlation between NEDOCS and VAS as the Correlation Coefficient was reported as r = 0.93. VAS and EDWIN were also correlated (r = 0.36) significantly (P = 0.0001). CONCLUSION: In this study we noticed that the correlation between NEDOCS and VAS was more than that of EDWIN and VAS (0.93 vs. 0.59) and according to the Wilcoxon Signed Ranks Test this difference was significant (P= 0.0001). We concluded that the NEDOCS is a more reliable tool than EDWIN for measuring overcrowding in Emergency Department of Alzahra General Hospital.

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ABSTRACT FINAL ID: OS02-D;

TITLE: Teamwork in the Emergency Department – Effects on Efficiency, Quality of Care, Patient Satisfaction and Staff Work Conditions

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Overcrowding and excessively long waits are a concern for emergency departments around the world. It has been argued that simply adding capacity (such as hospital beds) is not sufficient to fix flow problems. Accordingly, process orientation has been embraced and multidisciplinary teamwork has been suggested as a promising approach to improving care processes in emergency departments (ED). The aim of this study was to study the implementation of teamwork in the ED and its effect on efficiency, quality of patient care, patient satisfaction and staff work conditions. METHODS: A quasi-experimental study using multiple baseline and comparison groups was conducted in a university hospital ED as teamwork was implemented into clinical practice. Teamwork was implemented to reach the 4-hour target by getting the physician involved earlier in the care process and by avoiding multiple handovers between care givers. The multidisciplinary teams consisted of one physician, one nurse and one nursing assistant. Flow managers were also appointed. Data was collected at several time points: during four weeks immediately after the implementation of teamwork when teamwork was altered with traditional work in an ABAB-design, and after four and 12 months. Data from multiple sources was used, including electronic health records, observations, patient questionnaires and self-ratings from healthcare professionals. RESULTS: Compared to traditional work, teamwork was related to some improvements in ED efficiency. Also, patients rated fewer areas in need of immediate quality improvement. They also rated the waiting times to physicians as shorter (although the registered waiting times did not differ significantly). In contrast, staff initially perceived their efficiency as worse and their work as less rewarding. CONCLUSIONS: Teamwork is promising in generating better patient flow and is related to improvement in patients perceptions of quality of care. However, staff needs time to adjust to the changes in work process.

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ABSTRACT FINAL ID: OS02-E;

TITLE: Emergency Department Time and Patient Satisfaction in a High Volume, High Acuity Urban Center October 2010

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Customer satisfaction is a marketing / business term that helps assess if any given product fulfills the clients expectations. However, translating these concepts to patient care can be difficult sometimes, especially regarding the ED, where “first come, first served” and “customer is always right” do not always apply. Once satisfaction is measured, it is possible to assess weaknesses in the system and implement modifications that could exponentially improve quality and efficiency. METHODS: Customer Satisfaction Surveys to 230 patients that received care in the ED at Hospital General Plaza de la Salud were randomly administered during the month of October 2010. The main objective was to determine which aspects of that particular visit to the ED were most influential in the patient’s perception of quality of care and customer satisfaction. RESULTS: Negative perceptions during the ED visit were most influenced by patients' past experiences in other health care centers (importance 0.58 / $p<0.01$, the number of nurses on staff (importance 0.057 / $p<0.01$), staff’s concern about the their illness and needs (importance 0.057 / $p<0.01$), time of response of laboratory test (importance 0.051 / $p<0.01$), waiting time in the ED lounge (importance 0.050 / $p<0.01$). Positive perceptions during the ED visit were most influenced by time of day / day of the week the visit occurred (importance 0.054 / $p<0.01$) and how effective the doctor patient communication was (importance 0.051 / $p<0.01$). CONCLUSIONS: Customer satisfaction surveys were impartial and an accurate method to evaluate patient satisfaction of both ED visit processes and ED personnel. Even though patients perceived as poor both waiting time and laboratory response time, the overall time by triage code was within 30mins and total length of stay in the ED was below 2hrs in most cases. There are some true weaknesses in our ED that arose based on this study which include how overworked/understaffed the ED is in regards to physicians and nurses and how this affects quality time with each patient and personnel rapport.

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ABSTRACT FINAL ID: OS02-F;

TITLE: Analysing Patient Flows and Throughput in an Emergency Department at a Hospital Using Simulation

ABSTRACT BODY:

Abstract Body: OBJECTIVE: With increasing and changing patient demand (ranging from resuscitation to chronic medical conditions), Emergency Departments all over the world are facing a huge challenge to provide high-quality care with limited resources. In the hospital under study, the Emergency Department handles 400 cases per day. One way to improve patients' experiences (e.g. shorten waiting times) is to ensure that valuable resources such as doctors and nurses are well-utilized. METHODS: We built a simulation model of the Emergency Department, so that the impact due to different staffing levels/schedules can be explored without jeopardizing patient care. Our model captures:

- all relevant treatment processes (triage, consultation, lab tests, etc.) and the complexities of intertwining and re-entrant patient-flows,- complicated arrival rates that vary by time and day, and patient category (level of urgency), and
- adjustable staff deployment (shift, breaks, doctors on reserve). Another difficulty in building the simulation model is data incompleteness. While patient data is centralized electronically, not every event is “time-stamped” into the record. Thus, parameters for some key processes (e.g. triage, consultation) cannot be directly calculated. Meta-heuristics (simulated annealing) and optimization (descent search) techniques are used to estimate the needed parameters. RESULTS AND DISCUSSION: Using our model, we can analyse the current patient throughput, identify bottlenecks, and determine staffing levels needed to meet performance targets. One advantage of simulation is that complicated dynamic deployment policies can be studied. Our study considers the patient-queue threshold when an extra triage nurse should be called in from another duty area. By performing sensitivity analysis using our simulation model, we can set the threshold so that service quality is maintained with minimal impact to other hospital operations. These and other insights obtained provide suggestions for operational improvements and effective deployment of the valuable resources in the Emergency Department.

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ABSTRACT FINAL ID: OS02-G;

TITLE: Effect of Stopping Bedside Registration and Triage on Patient Flow Variables

ABSTRACT BODY:

Abstract Body: METHODS: Previously successful bedside registration and triage process was terminated in an urban emergency department. The effect on time to provider and other patient flow variables was immediate. Results represent three months pre and post change 13895 pre and 14552 patients post change. RESULTS: Avg time to provider for 3 months pre and post change was 44 and 59 min respectively. Increased time by 15 min, 34% increase. LOS for discharged patients pre and post change was 214 and 226 min respectively (+12 min), LOS for admitted pts was 371 and 368 min respectively (-3 min). Avg door to disposition decision for admitted pre and post change was 237 and 273 min respectively (+36 min). Avg door to disposition for discharged patients was 198 and 208 min respectively (+ 10 min). Total number of elopements pre and post change was 478 and 684 respectively increase of 206/3 mo 43% increase.

CONCLUSION: Bedside registration and triage is known to decrease time to provider. The effect of reversing the process back to registration and triage up front in triage has not been studied. Reversing the process resulted in an immediate increase in time to provider, door to disposition decision and LOS. The number of elopements during the study period increased by 43% implying decreased patient satisfaction. Limitations: A line at the check in desk may have resulted in some patients being checked in several minutes after they actually arrived. Manual inputs to the tracking system include time of decision to admit or discharge and time patient left the ED. These limitations were in effect both pre and post the change and should not affect the overall movement of data which showed a general lengthening of the ED processes. In conclusion, reversing bedside registration and triage resulted in increased waiting time for patients to initially see a provider and increased time to disposition. There was also an overall increase in LOS for admitted patients. There were also more elopements from the emergency department. Reversing bedside registration and triage negatively impacted ED pt flow variables.

AUTHORS/INSTITUTIONS: E. Anderson, Emergency, cleveland clinic, Cleveland, OH;

ABSTRACT FINAL ID: OS02-H;

TITLE: Exploring Team Behaviours for Effective Implementation of Team Work in Emergency Care

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Teamwork has been suggested as a promising approach to improving care processes in emergency departments (ED). However, there is a lack of understanding of what team members actually do as teamwork is implemented. Also, there is a need to better understand the contingencies that facilitate or impede teamwork. The aim of this study is to qualitatively describe the implementation of teamwork in an ED and to propose key behaviors for successful implementation. METHODS: Fifty hours of observations of teamwork were conducted for three days during the initial implementation. An observation form was used to collect data on how key behaviors of the planned process were performed for each patient care process. Behavioral analysis was used to understand the contingencies that decreased or increased actual team behaviors in relation to the planned process. RESULTS: We found a great discrepancy between the planned and the observed process. Three behaviors were essential for the consistent implementation of teamwork: taking patient history together, meeting in a defined team room, and communicating with team members. Factors that decreased these key behaviors included waiting for other team members or having trouble locating each other. Moreover, explicit instructions on when team members should interact and communicate about increased adherence to the planned process. CONCLUSIONS: In order to avoid discrepancy between a planned and an observed process, the contextual conditions need to be understood and managed by carefully planning and monitoring the team behaviors as the new process is implemented.

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ABSTRACT FINAL ID: OS03-A;

TITLE: Capnography as a Diagnostic Tool for Pulmonary Embolism (PE) in the Emergency Department (ED): a Meta-analysis

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The diagnosis of PE is a challenge. Capnography (PetCO2) is often used in the ED. PE increases alveolar dead space with a decrease of expired CO2. PetCO2 has shown in many studies to play a contributing role in the diagnosis of PE, but none is strong enough alone to modify our daily clinical practice. Thus, we performed a systematic review and meta-analysis of the accuracy of PetCO2 in diagnosing PE. METHODS: A systematic search was performed for relevant trials (1990 to 2011). Studies meeting inclusion criteria were those evaluating PetCO2 alone or in conjunction with other tests as a diagnostic tool for PE. Previously published guidelines were followed for meta-analysis performance. RESULTS: Among the 14 trials included (2291 patients), prevalence of PE ranged from 5 to 69%. Threshold effect was present except in the sub-groups. Heterogeneity was found among the 14 studies, reason why we made three sub-groups: one of D-dimer positive patients extracted from the 14 trials (9 trials), a second of the most widely used capnography technique (alveolar dead space fraction AVDSf = ((Pa CO2-Et CO2))/(Pa CO2)) (9 trials), a third with AVDSf D-dimer positive (6 trials). Among the 14 trials, the pooled results were: sensitivity 0.80 (CI 0.76 to 0.83), specificity 0.49 (0.47 to 0.51), negative likelihood ratio (LR) 0.32 (0.23 to 0.45), positive LR 2.43 (1.70 to 3.46), diagnostic odds ratio (DOR) 10.4 (6.33 to 17.1). Area under the curve of the summary receiver operating characteristic curve was 0.84. The diagnostic performance of PetCO2 in the D-dimer positive sub-group was similar. In both AVDSf sub-groups, no heterogeneity was found pooling the negative likelihood ratios. Pooled results of the negative LR in the AVDSf group and in the positive D-dimer AVDSf group were 0.38 (0.31 to 0.48) and 0.39 (0.3 to 0.5), respectively. Data are resumed in table 1. CONCLUSION: Following analysis of LR values, PetCO2 alone seems insufficient. Considering heterogeneity of trials, in the future, we need to probe the relevance of its contribution in cases of low clinical probability with positive D-dimer results.

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ABSTRACT FINAL ID: OS03-B;

TITLE: Inter-observer Variance when Measuring Respiratory Rate

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Respiratory Rate (RR) is an important vital sign as it is strongly correlated to in-hospital mortality. At many hospitals, nurses or nurse assistants should measure the RR at admission, but often, this is not done. We believe that one reason for this could be that staff find it difficult to measure RR. We therefore wished to investigate how a group of nurses and nurse assistants would agree on RR when measuring the actual number of respirations per minute and using a predefined scale. METHODS: For this prospective study, we recorded five videos of a young man breathing approximately five, ten, fifteen, thirty and sixty times per minute. The videos were shown, in random order, to a convenience sample of nurses and nurse assistants during an educational session. The participants were randomized to either note the exact number of breaths per minute or to use a predefined scale (breathing very slowly, slowly, normally, fast or very fast). The participants were blinded to the answers from the other participants. Data regarding the graded rapports was analyzed using the Fleiss Kappa Coefficient and data regarding the exact number of breaths was analyzed using inter-class coefficients (ICC). RESULTS: Thirty-three nurses and four nurse assistants participated in the study, 18 in the exact number group and 20 in the scale group. Mean age was 42 years with a mean of 18 years of experience. When comparing the exact number of breaths per minute, we found an ICC of 0.99 (95% CI: 0.97-1.00). When comparing the RR using the predefined scale, we found an overall Kappa of 0.76 (for very slow 0.80, slow 0.58, normal 0.58, fast 0.88 and very fast 0.94). CONCLUSIONS: This is, to our knowledge, the largest inter-observer study on respiratory rate to date. We found a very good agreement when reporting the actual number of breaths per minute and a substantial agreement when comparing the use of a predefined scale. Further studies are, however, needed on the use of scaled comparison of respiratory rate.

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ABSTRACT FINAL ID: OS03-C;

TITLE: Clinical Management of Community-Acquired Pneumonia in Short-Stay Observation Unit

ABSTRACT BODY:

Abstract Body: OBJECTIVE: In Western countries lower respiratory tract infections are the sixth leading cause of mortality and the first, when considering infectious diseases. Community acquired pneumonia (CAP) represents the cause of about 600.000 hospitalizations per year (3.7% of total admissions). In Emergency Departments (EDs), the Emergency Physician (EP) is the first actor in managing the correct clinical pathway of CAP, by the prescription of the first diagnostic procedures and the empirical medical therapy and by choosing the right ward where to admit the patient (i.e. General Medicine Dept., Infectious Diseases Dept., Intensive Care Unit Dept). At this purpose, a 24-48h hospitalization in the Short-Stay Observation (SSO) Unit may represent a good way to manage CAP at low-moderate risk of mortality (Port's class II-III); indeed, in our ED, the EPs have been sensitized to admit such patients in SSO Unit. The aim of this study was to identify if the hospitalization in SSO Unit of CAP at low-moderate risk of mortality prelude to a rapid discharge after a 24-48 h observation, or otherwise to a hospitalization in other Departments. METHODS AND RESULTS: We observed 451 14-year older patients with diagnosis of CAP, admitted to ED of S. Pertini Hospital from 1st January to 31st December 2010 (201 female, 45%; 250 males, 55%). At triage, priority code was green (88%) followed by yellow (21%), red (11%) and white (2%). The seasonal trend agreed with the National average, showing an increase of incidence in the first quarter of the year (202 patients). Among 451 patients studied, 61 were discharged (14%), 191 (42%) were admitted to SSO Unit and 199 were hospitalized in other Depts (26% of these in our Hospital, the remaining 18% transferred elsewhere); ninety-five patients (49.7%) of those admitted to SSO Unit were discharge after an average of 22 hours of observation. CONCLUSIONS: Admission in SSO Unit is a good way to manage CAP at low-moderate risk as it can provide a rapid discharge in about 50% of patients as well as an evaluation of the antibiotic response and the prevention of complications.

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ABSTRACT FINAL ID: OS03-D;

TITLE: Aspiration Pneumonitis: Current and Future Treatment Options

ABSTRACT BODY:

Abstract Body: INTRODUCTION: When the aspiration of stomach contents occurs, it represents a challenging predicament for physicians across specialties, but is especially prevalent in the Emergency department and in Intensive Care. The syndromes that follow carry a significant morbidity and mortality, often requiring days or weeks more in ICU. DISCUSSION: Aspiration pneumonitis can result in extensive damage to the lung tissue and allow for the proliferation of bacteria within the lungs and hence aspiration pneumonia is a frequent outcome. Early identification and management is therefore very important for a positive outcome. The current management of aspiration pneumonitis involves a process of damage limitation through rapid removal of the aspirated materials and supportive care to see if pneumonia will develop. Additional management options may be developed in the future and there are several methods that could be employed. Similarities in the inflammatory responses of adults to aspiration pneumonitis and neonates to meconium aspiration raise the possibility that meconium aspiration syndrome therapies could hypothetically be adapted for use in the treatment of aspiration pneumonitis. Immune modulation presents an alternative avenue for how aspiration pneumonitis treatment may develop in the future and the feasibility of each is considered here.

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ABSTRACT FINAL ID: OS03-E;

TITLE: Performance of the Pulmonary Embolism Rule-out Criteria (the PERC Rule) Combined with Low Clinical Probability in High Prevalence Population

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The pulmonary embolism rule-out criteria (PERC; table 1) rule was created to exclude pulmonary embolism (PE) without further exams, by selecting patients with very low pretest probability (<2%). Its clinical usefulness is currently not confirmed in European studies with high PE prevalence even when combined with low clinical probability assessed by revised Geneva score. Our objective was to compare the performances of PERC rule combined with low clinical probability assessed by revised Geneva score, Wells score or the clinician gestalt in a European population with a high prevalence of PE. METHODS: We analyzed a compilation of 2 prospective collected databases from patients suspected of PE, having 3 month follow-up (n=2810). We collected clinical gestalt assessment prospectively documented and retrospectively calculated PERC rule, Wells score and revised Geneva score. As hormonal treatment was not collected in the second study, the PERC rule was fully estimated only on the first population. On the overall database, we calculated a simplified PERC rule without taking into account this criterion: PERC7 rule. We analyzed performances of combinations of negative PERC and PERC7 rule with low clinical probability. RESULTS: PERC rule was fully applied in 1328 patients (overall prevalence of PE of 28.8%) and 103 patients were classified as negative for PERC rule (7.8%). Among them, 3.9% had a final diagnosis of PE. When PERC rule was combined with low pretest probability assessed by revised Geneva score, Wells score or gestalt assessment, the prevalence of PE was 4.4%, 2.5% and 0%,respectively. The last combination resulted in 100% sensitivity, 100% negative predictive value. Results were similar with PERC7 (Table 2). CONCLUSIONS: Our results suggest that the PERC rule applied in a population with high prevalence of PE could safely rule out PE without further exam when combined with low gestalt probability.

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ABSTRACT FINAL ID: OS03-F;

TITLE: Differences in PE Prevalence Between French and American Suspected PE Populations: Comparison and Analysis

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Recent studies report pulmonary embolism (PE) prevalence of about 20-25% in Europe and 5-10% in North America. We analyse possible causes and potential clinical consequences of these differences by comparing European and American suspected PE and final PE diagnosed patients. METHODS: We analyzed two prospective collected databases of suspected PE patients, one from France (n=3174) and one from USA (n=7940). Clinical characteristics and diagnostic management including pretest probability gestalt assessment and tests performed were prospectively collected. To assess severity of patients and as "altered mental status" criteria was not available in overall population, we calculated a simplified Pulmonary Embolism Severity Index (PESI10) without taking into account this criterion. Overall mortality, PE related mortality and bleeding complications were analyzed. RESULTS: Table 1 compares suspected populations' characteristics. Several criteria significantly differed: French population was older, had higher respiratory rate, lower O2 saturation, more hemoptysis, more personal history of VTE. At the suspicion time, PE was the most likely diagnosis significantly more frequently in the French population. In France, clinical probability assessment classified a more important proportion of patients in moderate or high groups. PE prevalence was significantly higher in overall French population and in each level of clinical probability. Final PE populations differed significantly too (Table 2). In France, the rate of patients with PESI10>85 and PE related mortality were significantly higher while bleeding complications were similar in the 2 populations. The differences of severity or mortality were independent from performed tests to achieve the diagnosis of VTE (CT or others). CONCLUSION: PE prevalence's differences in Europe and America are associated with important discrepancies in suspected PE and final PE diagnosed populations. This seems to be related to differences in physician's thresholds suspicion and could lead to discrepancies in medical practice risk: miss versus over diagnosis.

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ABSTRACT FINAL ID: OS03-G;

TITLE: Heart Failure Mortality: Trends Over a 20 Year Period in Europe

ABSTRACT BODY:

Abstract Body: OBJECTIVE: It is claimed that heart failure (HF) prevalence has increased over time. In parallel, the treatment of chronic HF with low ejection fraction (EF) has improved while the management of acute HF seems not to have improved in the same manner. There may also be some outcome heterogeneity among various European countries because of differences in health systems. Therefore, the impact of treatment on HF as a cause of death, in Europe, is unknown. The aim of this study was to assess death rates related to HF as an underlying cause during the last 20 years in 6 European countries. METHODS: The number of deaths with HF as an underlying cause was collected from national statistic organizations in 6 European countries: Greece, England-Wales, Spain, France, Finland and Sweden from 1987 to 2008. Disease coding for HF was based on international classification of diseases (ICD 9th and 10th versions). We computed age-standardized mortality rates per 100 000 inhabitants. Mean age at death with HF was also calculated. RESULTS: In Greece, Spain and France, the age-standardized death rate related to HF as underlying cause was above 40 deaths per 100 000 in 1987 and continuously decreased until 2008. In England and Wales, Finland and Sweden, it was below 25 per 100 000 in 1987 and remained roughly stable until 2008. During the same period, the mean age at death increased from 80.5 to 84.4 years in the total population of the 6 European countries. CONCLUSION: Over time, patients are dying at an older age in all the 6 countries. Mortality with HF as an underlying cause has been reduced in Greece, France and Spain in the last 20 years, whereas it remained stable in England-Wales, Finland and Sweden at a lower level. These differences may be the consequence of differences in health care systems or in HF management among different countries. The age-standardized mortality rate related to HF as underlying cause seems to converge to the same level around 25 to 35 deaths per 100 000. One possible reason for that may be the large spread of European guidelines on HF management. Potential biases due to differences in the registration process are also discussed.

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ABSTRACT FINAL ID: OS04-A;

TITLE: Cardioversion of Uncomplicated Recent Onset Atrial Fibrillation: A Survey of Practice by Irish Emergency Physicians

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Uncomplicated atrial fibrillation of >48 hours duration is a common dysrhythmia encountered by Emergency Physicians. Most guidelines and textbooks ignore the role played by Emergency Physicians in the management of this condition. The aim of this study was to describe the management of uncomplicated recent onset AF by Irish Emergency Physicians. METHODS: All Emergency consultants and higher specialist trainees were emailed a 24-point questionnaire. Postgraduate training, hospital demographics and practice patterns regarding the management of recent onset uncomplicated AF in the ED was assessed. A fictional clinical case was used for this purpose. Descriptive statistics were used to describe differences in reported practice patterns. RESULTS: We received 54 responses, representing a 64.2% response rate. 40.6% perform rate control only, 25% initial rhythm control and 31.3% rate, then rhythm control. 50% of successful cardioversions are still admitted to the hospital. Beta-blockers are the drug of choice in 97% of cases for rate control. Amiodarone is preferred as the initial pharmacological cardioversion drug in the ED in 67.9%. Respondents believed that the most effective cardioversion method is electrical cardioversion (97% success rate), however this was seldom performed in the ED (8/54 physicians) performed this. Emergency Physicians would prescribe low molecular weight heparin prior to cardioversion in recent onset uncomplicated AF in 60% of cases. CONCLUSION: Irish Emergency Physicians surveyed in this study actively manage this condition in the Emergency Department. There exist wide variations in regional practice especially regarding the use of pharmacological and electrical cardioversion of recent onset AF. This may reflect different work practice environments and support from cardiology teams, as well as level of training and insufficient evidence based guidelines. Further research is needed to determine the optimum evidence based care of this cohort of patients.

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ABSTRACT FINAL ID: OS04-B;

TITLE: Adrenomedullin Changes Predict Survival in Dyspneic Emergency Department Patients

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Adrenomedullin (ADM), a vasodilatory peptide with potent hypotensive effects, can be measured as MRproADM. Elevated in chronic heart failure, it is increased proportionally to disease severity. Our purpose was to determine if ADM changes are associated with survival. METHODS: BACH was a prospective, 15-center international study of emergency department patients presenting with dyspnea. Blood was sampled at admission and repeated 14 to 48 hrs later. High or low ADM was defined by a 2.0 nmol/L cutpoint. Patients were divided into 4 groups defined by initial vs repeat ADM: high-high, high-low, low-low, and low-high. RESULTS: Of 1641 patients, the final diagnosis was AHF in 568 (34.6%), COPD 201 (12.2%), asthma 130 (7.0%), pneumonia 112 (6.8%), chest pain of unknown origin 106 (6.5%), bronchitis 61 (3.7%), arrhythmia 55 (3.4%), ACS 39 (2.4%), pulmonary embolism 38 (2.3%), influenza 27 (1.6%), and "other" in 304 (18.5%). At 90 days there were 130 deaths; 65 had AHF, and 65 were non-AHF. Median time to discharge was 7 days (IQR 3-12) and initial ADM levels ranged from 0.03 to 12.6 nmol/l (median 0.88 nmol/l; IQR 0.57, 1.44 nmol/l). Overall, 532 (32.4%) were discharged on the day of admission. Of the remaining 1109, 981 had >1 blood draw. At admission, 191 (19.5%) had high ADM, suggesting increased mortality. Of these, 70 (36.6%) had ADM levels that declined with therapy. The declining ADM cohort had a survival rate similar to patients who were never at risk based on the initial ADM, see figure. Including serial measurements into a time-dependent Cox model gave added value vs patients with just an admission ADM (p=0.0005). CONCLUSION: A declining ADM identifies a cohort at low risk of 90 day mortality.

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ABSTRACT FINAL ID: OS04-D;

TITLE: Risk Scores Prognostic Effectiveness in Patients Presenting to the Emergency Department with Chest Pain and Nondiagnostic Electrocardiogram

ABSTRACT BODY:

Abstract Body: OBJECTIVE: To compare risk scores in chest pain patients (Grace, Pursuit, TIMI, Goldman, Sanchis, and Florence Prediction Rule) to graded exercise and outcome. METHODS: Low-risk patients with nondiagnostic EKGs, normal Troponins, and unknown coronary disease underwent graded exercise. Patients with positive testing underwent coronary angiography, otherwise they were discharged. Endpoint: coronary stenoses >/=50% at angiography or cardiovascular death, myocardial infarction, revascularization and angina at follow-up. RESULTS: In 291 patients enrolled, the areas under the ROC curves of Grace, Pursuit, TIMI, Goldman, Sanchis, and Florence Prediction Rule were 0.589, 0.683, 0.694, 0.536, 0.663 and 0.740, respectively (Figure: $p<0.05$ Florence Prediction Rule versus Goldman and Grace). Only graded exercise effectively recognized patients at risk of coronary events as compared to Florence Prediction Rule ($p=0.56$) and other scores ($p<0.001$) at univariate analysis. However, both Florence Prediction Rule and graded exercise ruled out coronary events in patients with low risk score (98% versus 99%, respectively; $p=0.58$). Finally, patients with negative graded exercise had high-risk coronary event when they presented high Florence Prediction Rule or history of hypertension or obesity or carotid stenosis or recurrent angina. CONCLUSIONS: In low-risk chest pain patients with unknown coronary disease Florence Prediction Rule showed the best prognostication as compared to other risk scores. Overall, graded exercise was an independent predictor of coronary event; however, it was questionable in the subset of patients with low risk scores. High Florence Prediction Rule and the presence of hypertension or obesity or carotid stenosis or recurrent angina stratified patients with negative graded exercise.

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ABSTRACT FINAL ID: OS04-E;

TITLE: Low Risk Chest Pain Patients Need Scan Strategy Implementation: Novel Insight from the Real World

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Myocardial perfusion imaging (MPI) is effective in stratifying patients with chest pain (CP), a nondiagnostic EKG and low to intermediate likelihood of coronary events. The aim of the present study was to evaluate diagnostic implementation and appropriateness of a costly scan strategy in special subsets of CP patients. METHODS: Patients with negative first-line work-up including clinical evaluation, serial EKGs and serial Troponins underwent stress-MPI. Those with positive testing underwent angiography, whereas the remaining patients were discharged. Endpoint was coronary stenosis >/= 50% at angiography or cardiovascular death, myocardial infarction and revascularization at follow-up. RESULTS: Out of 1,089 patients enrolled, 276 (25%) had positive stress-MPI and 155 (56%) achieved the endpoint. Patients with normal stress-MPI (n=813) had coronary events in 23 (3%). Area under the ROC curves of stress-MPI and exercise-EKG were 0.869 versus 0.567, respectively, p<0.001 (Figure). Moreover, the Negative Predictive Value (NPV) was 97% versus 86%, respectively, p<0.001, and Positive Predictive Value (PPV) 56% versus 43%, respectively, p=0.048. Of note, patients presenting with male gender, hypertension and nonischemic EKG or echocardiography abnormalities showed a PPV greater than others (71%, 68%, 72% versus 43%, respectively, p<0.0001). CONCLUSIONS: Nuclear scan strategy in low to intermediate risk CP patients is a valuable tool for risk stratification and adds incremental prognostic value over graded exercise. Of note, costly scan strategy showed diagnostic implementation and appropriateness in special subsets of patients presenting with male gender, hypertension and and nonischemic EKG and echocardiography abnormalities.

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ABSTRACT FINAL ID: OS04-F;

TITLE: ST-segment Elevation Myocardial Infarction in Emergency Department: Epidemiological, Clinical Findings and Early Prognosis

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The prognosis of ST-segment elevation myocardial infarction (STEMI) depends on appropriate and early management. The aim of this study is to describe the epidemiology of STEMI in the Tunisian setting, using administrative data, clinical findings related to STEMI seen in emergencies, and to analyze the early prognosis of patients. METHODS: A prospective observational analysis of a population-based cohort was done, which included patients with STEMI admitted to the resuscitation room from June 2008 to March 2011. RESULTS: A total of 216 patients with STEMI were admitted in the resuscitation room. The mean overall age was 58 years, the sex ratio was 5. Cardiovascular risk factors: smoking was found in 166 patients (77%), hypertension in 68 patients (32%), diabetes in 63 patients (29%) and a history of coronary artery disease in 17 patients (8%). 65% presented within 3 hours of symptom onset. Reperfusion strategy was considered for 202 patients: thrombolysis with Streptokinase in 172 patients and primary percutaneous coronary intervention (PCI) in 30 patients (15%). Rescue PCI was performed in 77 patients with STEMI who failed fibrinolytic therapy. The early complications were represented by cardiogenic shock in 20 patients (9.3%), ventricular fibrillation in 16 patients (7.4%), atrioventricular block in 9 patients (4.6%) and a ventricular tachycardia in 6 patients (2.8%). The in-hospital mortality was 3% for the patients with STEMI. CONCLUSION: STEMI is a frequent cause of admission in the resuscitation room. Smoking is the major risk factor. Fibrinolytic therapy remains the reperfusion strategy of choice for our region treating patients presenting with STEMI. The immediate prognosis depends on an appropriate management of acute complications.

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ABSTRACT FINAL ID: OS04-G;

TITLE: Antithrombotic Therapy in Atrial Fibrillation: Can Enlightenment and Education for Stroke Prevention in a Busy Emergency Department be Effective?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Atrial fibrillation (AF) increases the risk of ischemic stroke. It is well known that anticoagulation therapy (AT) is underprescribed. The aim of our study was to survey AT rates in AF and to present how we educate our patients (pts) in the Emergency Department (ED) to improve patients' knowledge of AF for better AT quality. METHODS: We examined medical records of all pts who presented to the ED with AF between Jan 2009 and Dec 2010. Pts were enrolled if an ECG documenting AF within the past 12 months was available. We used the CHADS2 risk scheme and the CHA2DS2-VASc risk scheme for more comprehensive risk assessment in pts with CHADS2 score of 0 or 1. We compared the 2009 and 2010 data to detect the occurrence of changes in the AT rates. RESULTS: 822 pts were screened in 2009 and 740 pts in 2010. From all pts presenting in 2009, 40(48.9%) pts were on acenocumarol or coumarin medication, 126 (15.3%) pts were on aspirin or clopidogrel, 36 (4.3%) pts were on LMWH. 238 (29%) pts were not on any AT at all although 32 pts had CHA2DS2-VASc score ≥ 1 and 156 pts from the not anticoagulated group had CHADS2 score ≥ 2. 183 patients' INR values were outside the therapeutic range which is 45% of all anticoagulated pts. In 2010 420 (56.75%) pts were on coumarin medication, 138 (18.6%) pts were on aspirin or clopidogrel and 22 (2.97%) pts were on LMWH. Compared to data from year 2009, all the values are slightly higher which suggests an improvement in AT rates. In 2010 only 133 pts were not anticoagulated which represent only 17.9% of all patients compared to the significantly higher value of 29% of the previous year. Review of INR values in the case of 135 pts were outside the therapeutic range which was 32.14% of the total. CONCLUSIONS: Our data confirms that education of pts about the importance of stroke prevention by proper anticoagulation therapy even in a busy ED can be effective. Considering the results there is a clear upward trend in effective AT. Continuing the practice that we established we try to individually educate our patients.

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ABSTRACT FINAL ID: OS05-A;

TITLE: Implementation of PECARN Decision Rule for Children with Minor Head Injury in the Pediatric Emergency Department

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Of the currently published decision rules for the management of Minor Head Injury (MHI) in children, the PECARN rule, derived and validated in the largest multicenter prospective study cohort with high methodological standards, appears to be the best available evidence-based tool to accurately identify children at very low risk of clinically-important traumatic brain injuries (ciTBI) in the Pediatric Emergency Department (PED). The aim was to analyse the effects of implementing the PECARN decision rule on the management of children with MHI in a tertiary care academic PED. METHODS: The PECARN decision rule algorithms for children < and >2 years were introduced to the PED in Padova-Italy, in May 2010. Data from medical charts of 288 retrospective PED visits for MHI (November 2010-April 2010) and 356 prospective visits (June–November 2010) were collected to assess changes in CT scan rate and missed ciTBI (death from TBI, neurosurgery, intubation >24h, or hospital admission ≥2 nights). Medical staff satisfaction was also evaluated comparing results of questionnaires administered before and after the implementation. RESULTS: Of the 644 patients finally included 292 (45.1%) were <2 years. The adherence to the algorithms was on average 93.5%. The CT scan rate did not significantly differ between the two study periods (7.3% vs 8.4%). A ciTBI occurred in 2 (0.7%) and 3 (0.8%) patients respectively, all requiring hospital admission ≥2 nights. None required neurosurgical intervention or died. No ciTBI was missed in either study period. The percentage of medical staff satisfied with the new rule, in terms of ease-of-use for rapid decision making at the bedside, was significantly higher (96% vs 51%, p<0.0001) compared to the previous internal guideline based on the clinical prediction rule published by Da Dalt et al. in 2006. CONCLUSION: The implementation of the PECARN rule in the PED did not result in an increase in the rate of CT scan use or missed ciTBI compared to previous clinical practice and resulted in a greater medical staff satisfaction for the assistance provided in the decision-making process.

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ABSTRACT FINAL ID: OS05-B;

TITLE: Diagnostic Value of Procalcitonin in Well-Appearing Young Febrile Infants

ABSTRACT BODY:

Abstract Body: OBJECTIVE: In the last decade, the procalcitonin (PCT) has been introduced in many protocols for the management of the febrile child in Europe. Some authors have concluded that it is a better marker of serious bacterial infections (SBI) than White Blood Cell (WBC) count and, in some studies, even than C-Reactive Protein (CRP). However, its value among well-appearing infants under 3 months of age is not completely defined. Our objective was to assess the value of PCT in diagnosing SBI (and specifically, invasive bacterial infection -IBI-) in well-appearing infants under 3 months of age with fever without source (FWS). METHODS: Retrospective study including all the well-appearing infants under 3 months of age with FWS attended in seven European Paediatric Emergency Departments between 01/01/10 and 12/31/10 and in whom PCT was performed. A SBI was defined as the isolation of a bacterial pathogen from the cerebrospinal fluid (CSF), blood or urine. An IBI was defined when a bacterial pathogen was isolated in blood or CSF culture. RESULTS: A total of 270,462 patients were attended; 685 (0.25%) were infants under 3 months of age with FWS. There were 557 well-appearing infants in whom PCT and a blood culture were performed (22.1% under one month of age). Among them, 122 (21.9%) were diagnosed with a SBI: 116 UTI (six of them with associated bacteremia), 5 occult bacteremias and 1 bacterial meningitis. Table below shows the area under the ROC curve of PCT, CRP, WBC count and ANC for detecting SBIs and IBI. Two occult bacteremias (S. agalactiae and S. aureus) did not show any altered infectious parameter. CONCLUSION: PCT and CRP showed a similar performance in identifying well-appearing young infants with a higher risk of SBI. However, PCT seems to be more useful for detecting those infants with IBI.

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ABSTRACT FINAL ID: OS05-C;

TITLE: Can Need for Admission for Infants with Bronchiolitis be Predicted?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: To assess if clinical factors predict admission for bronchiolitis. METHODS: Design: Prospective cohort study, recruiting babies less than 12 months old who presented to the Emergency Department (ED) with bronchiolitis. Setting: Tertiary children's hospital. Participants: Babies less than 12 months old diagnosed as having bronchiolitis (diagnosed clinically by ED doctors). Protocol: Children diagnosed with bronchiolitis had clinical signs and symptoms recorded on presentation. These were analysed to determine those factors which predicted admission, both singly and by using multiple logistic regression. RESULTS: 86 children were available for study. 40% were female, age (mean ±SE) 22±1.5 weeks. Five risk factors (shown in Tables - age, gender, heart rate, respiratory rate and oxygen saturation) predict admission in 88% of our cohort. CONCLUSION: This supports but refines the previous observations of Walsh et al1 that clinical factors can be used to predict admission in bronchiolitis; however our study identifies 5 key factors rather than the 12 that were previously identified. These factors can be used to guide general practitioners to decide which babies need referral to secondary care, ED doctors to determine babies who require hospital admission and help reduce unnecessary attendances at the ED. Further work needs to be done to implement this prospectively. Reference: 1 Walsh P., et al. An artificial neural network ensemble to predict disposition and length of stay in children presenting with bronchiolitis. Eur J Emerg Med 2004; 11(5):259-64.

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ABSTRACT FINAL ID: OS05-D;

TITLE: Are 15 Days of Age an Appropriate Cut-Off Point for High Risk Serious Bacterial Infection when Evaluating Young Febrile Infants?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: In recent years the management of febrile infants under 3 months has undergone several modifications. Some protocols recommend distinguishing febrile infants under 15 days as the highest risk group for serious bacterial infection (SBI). In this way, they recommend admitting to the ward all those febrile infants and to consider outpatient management for selected patients over one month of age and, more cautiously, between 14 and 28 days old. Our objective was to determine whether the 15 days of age is an adequate cut-off point for detecting infants in increased risk of SBI. METHODS: Retrospective study based on a prospective registry of infants under 3 months of age with fever without a source (FWS) admitted between September 2003 and August 2010 in the Paediatric Emergency Department of a tertiary teaching hospital. We include in the registry all infants under 3 months with FWS (temperature of at least 38.0 C). RESULTS: 1575 infants were included, of whom 310 (19.7%, 95% CI 17.8-21.7) were diagnosed with a SBI. SBI rate in patients aged 15-21 days was 33.3% (95% CI 24.5 to 43.4%), similar to that in infants from 7-14 days (31.9%, 95% 22.2-43.4%) and higher than that in infants older than 21 days (18.1%, 95% CI 16.2-20.3%). CONCLUSIONS: The febrile infants 15-21 days of age have a SBI rate similar to the younger infants but higher than those older than 21 days old. Establishing a cut-off point for SBI related to the age of 15 days seems to be inappropriate.

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ABSTRACT FINAL ID: OS05-E;

TITLE: Prescribing of Inhaled Corticosteroids for Pediatric Asthma Patients Discharged from Inner City Emergency Departments

ABSTRACT BODY:

Abstract Body: OBJECTIVES: The 2007 National Asthma Education and Prevention Program's Expert Panel Report-3 (EPR-3) recommends initiating inhaled corticosteroids (ICS) for patients with persistent asthma at discharge from the emergency department (ED). This study evaluated change in provider knowledge and behavior compared to 2006 study results of Scarfone and colleagues. Our specific objectives: 1) To understand ED physicians' knowledge of EPR-3 recommendations for initiating ICS for patients with persistent asthma at the time of ED discharge. 2) To assess provider adherence to clinical application of this recommendation. 3) To list barriers cited by ED physicians to initiating ICS therapy. METHODS: This cross-sectional study gathered data using self-administered surveys mailed to physicians at 9 inner city EDs. Data obtained were analyzed using a chi-square test and compared to the 2006 study results. This study was IRB approved and written informed consent was obtained from all research participants. RESULTS: 48% (58/120) of mailed surveys were returned, compared to 50% (391/782) in 2006. Compared to 20% in 2006, 35% ($p<0.03$) of respondents indicated that more than half of their patients were already using an ICS at the time of the ED visit. About 99% of respondents stated they believed that ICS use could reduce ED visits or hospitalizations. Compared to about 20% in 2006, only about 35% report that they prescribe an ICS at ED discharge, which was a significant difference ($p<0.04$). The most common reason for not prescribing an ICS at ED discharge continues to be the belief that it is the role of the primary care physician (PCP) (54.7%). CONCLUSIONS: Although both studies had low response rates, the two data sets pertain to physicians who are responsive to completing surveys. It appears that rates for initiating ICS therapy at ED discharge have improved since 2006. However, the vast majority still believes that prescribing an ICS is the role of the PCP, not the ED physician.

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ABSTRACT FINAL ID: OS05-F;

TITLE: Comparing Parental Satisfaction Between Intramuscular Dexamethasone and Oral Prednisolone for Asthma Exacerbations in Children

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Previous studies have demonstrated that a single dose of intramuscular (IM) dexamethasone is equally efficacious as a 5 day course of oral (PO) prednisolone in treating asthma exacerbations. Compliance with oral medications is traditionally poor in pediatrics, with palatability being a significant contributing factor. Our objective was to compare parental satisfaction with both modes of steroid delivery in an inner-city population. METHODS: Patients were randomized to receive either IM dexamethasone 0.6mg/kg (max 15 mg or PO prednisolone 2mg/kg dose (max 60 mg) for 5 days. Caregivers were interviewed via telephone 1 week after the ED visit. If there was no response, up to 4 consecutive daily calls were made. Caregivers were asked which mode of steroid administration their child received. They were also asked what they would have preferred for their child and why. We compared the mean values for satisfaction on a scale of 1-5 (1-very satisfied; 5-not satisfied) for both groups. Data was collated and analyzed using SPSS. RESULTS: A total of 47 patients were enrolled. Complete data were obtained for 40. Demographic data included 65% male, and 35% female; Mean age 4.26yr (range 1.58-6.9); Ethnicity: 60% Hispanic, 35% African American, 2.5% Africans, others 2.5%. Mothers were the primary caregivers in 90%. Ninety five percent of our patients had previously received steroids in the ED (97% given orally). Steroids were given orally in 65% and 35% IM. The commonest reason for preferring the IM route was single time use (57.5%). Pain avoidance was the reason for preferring the PO route (40%). Struggling during injection was the commonest problem encountered with IM treatment. 67% of parents whose children received IM steroids would make the same choice in the future as compared to 32% of parents in the PO group. Parental satisfaction was 3.54 in the PO group compared with 1.21 in the IM group ($p < 0.001$). CONCLUSIONS: Our results revealed greater parental preference for and satisfaction with IM steroids compared with oral administration.

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ABSTRACT FINAL ID: OS05-G;

TITLE: Urine Output Measured by a Portable Bladder Scanner

ABSTRACT BODY:

Abstract Body: OBJECTIVE: One of the key assessments of children with diarrhoea and/or vomiting (D&V) is urine output (UO). Reduced UO is associated with severe dehydration and impending shock. However in infants wearing nappies and children this can be difficult to assess without resort to catheterisation, a very distressing procedure and one rarely used. We previously demonstrated that a hand-held bladder scanner has potential for assessing urine production and helping determine disposition. Our aim is to determine whether a single bladder volume (BV) assessment on arrival would be as helpful. METHODS: Setting: Paediatric tertiary emergency department. Patients and protocol: A convenience sample of children aged </=60 months with D&V was studied. Clinical parameters were obtained and a baseline BV measured using a handheld portable bladder scanner. An average of 3 measurements was used. Where possible, serial BVs were obtained. BV was assessed as mls/kg (to allow for different body proportions) and UO as mls/kg/hr. Outcome was determined independent of the study data. Outcome measures: Evaluation of BV and UO with admission/discharge. RESULTS: 59 children were studied. Median age 14 months [25th, 75th centiles 9, 26]. For those admitted BV was 4.7 [+/-3.0] mls/kg compared with 2.8 [+/-1.8] mls/kg) for those discharged (p=0.004). Receiver Operator Characteristic (ROC) curve analysis indicates a bladder volume on admission of >5.5 mls/kg will predict discharge with a sensitivity of 50%, specificity of 90%, and a likelihood ratio of 5.7. Urine production was 0.6[+/- 0.5]ml/kg/hr for those admitted vs 1.5[=/-0.7] mls/kg/hr for those admitted (p=0.0002). CONCLUSIONS: This study has confirmed that a simple handheld bladder scanner has the potential to help assess UO and BV objectively in children with D&V. Paradoxically mean BV was higher in those discharged, yet they had subsequent reduced UO. This needs further evaluation. A single BV on admission of >5.5 mls/kg will help determine need for admission, but serial measurements are a better predictor. Normal UO is > 1 ml/kg/hr, and this study has confirmed that the mean UO is 0.6 mls/kg/hr in those admitted.

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ABSTRACT FINAL ID: OS05-H;

TITLE: Auscultatory Signs in Children with Bronchiolitis: Are They Related to Age and Viral Aetiology?

ABSTRACT BODY:

Abstract Body: OBJECTIVES: To assess whether auscultation findings at presentation with bronchiolitis vary with age or viral aetiology. METHODS: Design: Opportunistic prospective cohort study, babies who presented to the Emergency Department (ED) with bronchiolitis. Setting: Tertiary children's hospital. Participants: Children presenting with bronchiolitis (diagnosed by ED doctors). Protocol: Chest auscultation findings in all children were assessed and recorded prospectively at presentation. These were correlated with age and viral aetiology. Outcome measures: Variation of signs with age and viral aetiology. RESULTS: Babies who presented with wheeze were significantly older ((mean ±SE) 26.6±1.9 weeks) than babies who presented without wheeze (17.3±2.1 weeks) (ANOVA, p=0.002). Those who presented without abnormal auscultation findings were younger than those with wheeze or crackles or both (15.1±2.6 weeks vs 24.4±1.7 weeks) (ANOVA, p=0.006). There was no difference in auscultation findings depending on the virus responsible for bronchiolitis. In 68% of cases (n=34) bronchiolitis was caused by RSV, 32% (n=16) by rhinovirus, 10% (n=5) by adenovirus. CONCLUSION: Chest auscultation findings associated with bronchiolitis vary according to age, with babies older than 24 weeks likely to present with wheeze and babies less than 16 weeks more likely to present without chest signs. This is a crucial finding as it has been previously reported that crackles are a consistent feature of bronchiolitis1. Differences in chest signs may reflect differences in pathomechanisms of bronchiolitis and may explain why there are variations in response to medical treatment reported in the literature. Clinicians should be especially vigilant with young babies (<16 weeks) who are relatively more likely to present without any chest signs. Reference: 1 Issacs D. Editorials. Bronchiolitis. BMJ 1995; 310: 4-5.

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ABSTRACT FINAL ID: OS06-A;

TITLE: What do Parents Know and do about Oral Rehydration Therapy?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Significant numbers of children present for emergency care for treatment of vomiting and/or diarrhoea (D&V). Anecdotally we have observed that many parents do not understand how to rehydrate children appropriately, and many use inappropriate methods, often at the behest of clinicians. This is despite good guidance available. To change this situation better information regarding beliefs and practices is needed. The aim of this study is to quantify just what parent's beliefs are with regard to oral rehydration therapy (ORT). METHODS: Setting: A tertiary paediatric Emergency Department. Patients and Protocol: A questionnaire was administered to a convenience sample of parents attending hospital for a range of reasons, but including those with children suffering D&V. Only those with children less than 5 years of age were interviewed. Information regarding knowledge, beliefs and actual practice regarding ORT was gathered and analysed. These opinions and practices were benchmarked against recommendations (NICE and WHO) to determine concordance with established best practice. Data was analysed using Chi-square, correlation and descriptive statistics as appropriate. RESULTS: 292 were questioned, of whom 86 had symptomatic children. 223 (59%) of parents had heard of rehydration solutions but only 140 (37%) were able to name them. Of the parents with symptomatic children, only 48 (56%) had heard of rehydration solutions prior to attending the emergency department, despite 70 (81%) having attended their GP or spoken to NHS 24. 35 (12%) of symptomatic and 16 (19%) of the unaffected children were/would be offered drinks that the NICE guidelines instruct to avoid. Additionally, 51 (59%) of the symptomatic children had been given nothing or less than usual to drink in the 24 hours prior to attendance. CONCLUSIONS: Better education directed at primary care and community resources regarding ORT may help parents improve care for their children with D&V and reduce unnecessary attendance and subsequent admission. Using established guidelines would be a sensible starting point.

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ABSTRACT FINAL ID: OS06-B;

TITLE: The Pediatric Emergency Department Utilization by Infants Less Than 30 Days of Age: Preliminary Report

ABSTRACT BODY:

Abstract Body: OBJECTIVE: To determine the characteristics of pediatric emergency department visits by infants less than 30 days of age and to find out the factors that increase the probability of nonacute admissions. METHODS: We prospectively collected the data of infants aged less than 30 days who admitted to the emergency department (ED) of Hacettepe University Ihsan Dogramaci Children's Hospital, a tertiary hospital in Ankara, Turkey within a three-month period. Presenting problems were classified as acute if diagnostic tests were requested and/or hospitalization occurred. RESULTS: Through this period, 13,439 children (0-18 years of age) visited the pediatric emergency department, of which 257 were infants less than 30 days of age (1,9%). The average age was 14,2 days with a standard deviation of 8,4 days and a median of 14 days. The female to male ratio was 1/1,3. 18,7% of total visits were primary physician referral. 65,4% of patients were early discharged after birth (<48 hours of age); while 33,9% were discharged late. The chief complaints were jaundice (23,4%), irritability (12,8%) and vomiting (7,5%). The most common diagnosis was normal infant (33,5%), indirect hyperbilirubinemia (14%) and colic (6,6%). The acute visits were 69% of total. The infants with less than 37 weeks of gestation were more likely to come with acute problems than the mature ones (in order 84%; 66%). The infants discharged late after birth (≥48 hours of age) presented with acute problems more than the early discharged ones (in order 77%; 64%). The acute presentations were also slightly more for the infants with birth weight of less than 2500 g and infants of the mothers who were multiparous and older than 25 years of age. There were no relationship between the time of presentation and the acuteness of the visits. CONCLUSION: Especially early discharge after birth seems to be related with nonacute presentation. If we pay more attention on education of mothers in the perinatal period, we can diminish the nonacute presentations to the emergency department by infants less than 30 years of age.

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ABSTRACT FINAL ID: OS06-C;

TITLE: Children with Sore Throat at the Emergency Department Do Not Get Best Medical Practice

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Sore throat is a common medical complaint in children at the ED. Even though viruses are responsible for the vast majority of sore throat infections in children, 50% of them receive a prescription for antibiotics (AB). Recent data dispute the use of AB, even in sore throat caused by β Hemolytic Group A Streptococcus (GAS) in otherwise healthy individuals. Our objective is to evaluate if children, admitted to our Emergency Department (ED) were treated with respect to our national guidelines. METHODS: Using a retrospective cohort study design, we analyzed all 2009 medical records of children below 16, who were diagnosed with scarlatina, nasopharyngitis, pharyngitis, tonsillitis, sore throat. Children with underlying chronic diseases were excluded. RESULTS: Out of 14026 records, 904 children met our criteria. Median age was 3.2 years. The most common reported complaints were fever (73%) and pain (73%). Only 60% of the parents did use antipyretics. 97 children (11%) had received at least one dose of AB prior to their visit. The most common reported clinical features were red throat (98%), cervical adenopathy (43%) and tonsillar exudate (36%). Fever was objectified in only 28%.

15% underwent blood analysis, 10% had a chest X-Ray and 43% had a throat swab for GAS culture; of which 24% turned out positive. 4% of the children were admitted to the hospital, for no other reason than their throat complaints. 32% of all children were prescribed AB. Although guidelines specify that first choice AB should be narrow spectrum penicillin, 84% received amoxicillin, and amoxicillin with clavulanic acid accounted for 10%. CONCLUSION: Although Belgian AB guidelines concerning treatment of sore throat are very clear and straightforward regarding uselessness of AB in uncomplicated sore throat in otherwise healthy individuals, one in three children in our ED still received a prescription for AB.

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ABSTRACT FINAL ID: OS06-D;

TITLE: Outpatient Management of Febrile Infants Under 3 Months with Low-Risk Criteria without Systematic Lumbar Puncture or Empirical Antibiotic

ABSTRACT BODY:

Abstract Body: OBJECTIVES: To study the evolution of infants under 3 months with fever without source (FWS) attended in a Pediatric Emergency Department (PED) and discharged without performing a lumbar puncture and without antibiotic therapy. METHODS: Transversal seven-years study (September 2003 to August 2010) including all infants under 3 months with FWS attended in our PED. Those not admitted to the ward were followed by phone or, if not possible, reviewing subsequent reports. RESULTS: 1575 infants were included (serious bacterial infection -SBI- rate: 19.7%; positive blood culture rate: 1.9%). Among the 988 initially diagnosed with FWS, 599 (60.6%) had low-risk clinical and laboratory criteria. Among them, 449 (74.9%) were discharged without performing a lumbar puncture or administering antibiotics. After arriving the culture results, 17 of 449 (3.7%) were diagnosed with a SBI: 16 urinary tract infections and 2 occult bacteraemias (0.4%, one by E. coli and one by E. faecalis). Fifty infants returned to the PED (38 unscheduled visits - 8.4%). Four (0.8%) were diagnosed with lymphocytic meningitis (one with a positive enteroviral culture). None of them was diagnosed with bacterial meningitis. Ten infants (2.2%) were admitted to the ward. Of those 401 infants who did not return to the PED, 8% did not visit their primary care paediatrician after being discharged. All did well. CONCLUSIONS: In infants younger than 3 months with FWS and low-risk clinical and laboratory criteria, outpatient management without systematic lumbar puncture or empirical antibiotic is adequate if parents understand physician's instructions and proper medical follow-up is guaranteed.

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ABSTRACT FINAL ID: OS06-E;

TITLE: Spanish Multicenter Registry of Blood Cultures: Preliminary Data of the First Three Months

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The recent introduction of new vaccines has modified the spectrum of serious bacterial infections and decreased the incidence of occult pneumococcal bacteremia. Our objective is to describe the bacteria isolated in the blood cultures of patients attended at the Spanish Pediatric Emergency Departments (PEDs) and the characteristics of those patients. METHODS: Prospective registry of all the positive blood cultures performed in 14 Spanish PEDs between January and March of 2011. Epidemiological data, complementary tests, treatment and site of care were registered. A follow-up phone call was made for each patient. Bacteria classically considered as contaminants in otherwise healthy patients were excluded. RESULTS: A total of 148,837 patients were attended at the 14 PEDs and 5,668 blood cultures were performed. There were 79 positive blood cultures (1.39% of the blood cultures performed; 0.05% of the total patients attended). Among them, 61 patients (77.2%) were healthy children and 46 (58.2%) had a normal pediatric assessment triangle upon arrival to the PED. The most frequent isolated bacteria were S. pneumoniae (26), N. meningitidis (10), Salmonella species (8), S. pyogenes (7) and S. agalactiae (7). On table below appears the most frequent bacteria isolated for each age group. Six of them were subsequently diagnosed with a confirmed viral infection. Two patients died (1 S. pyogenes and 1 S. agalactiae) and six had sequelae. CONCLUSION: S. pneumoniae remains as the most frequently isolated bacterium in blood cultures among children 3-60 months of age. Most of the patients with bacteremia were previously healthy children and well-appearing upon arrival to the PED. Multicenter surveillance systems are a necessary tool to detect future epidemiological changes.

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ABSTRACT FINAL ID: OS06-F;

TITLE: Quality of Care Received by Pediatric Patients with Acute Poisoning Emergencies

ABSTRACT BODY:

Abstract Body: OBJECTIVE: In a study conducted in 2001-2002 by the Intoxications Working Group of the SEUP some areas for improvement in the management of acute pediatric emergencies and difficulties in measuring the quality of care were detected. This led to design and spread of practice guidelines and the design of quality indicators. Our aim was to study the quality of care of pediatric patients with acute poisoning admitted to Spanish Pediatric Emergency Departments (PEDs) related to previously designed indicators. METHODS: Analysis of the 6 basic designed indicators in two ways: 1. Surveys distributed to 39 PEDs: availability of protocols to manage most frequent and severe poisoning; and availability of antidotes. 2. Data obtained from the Toxicological Surveillance System of the SEUP: initiation of gastrointestinal decontamination in the first 20' after admission in the PED; administration of activated charcoal when performing gastrointestinal decontamination following ingestion of a substance adsorbed by it; Administration of coal in the first 2 hours after the ingestion; and performance of gastric lavage. The standard is ≥ 90% for all indicators except the realization gastric lavage (<10%). RESULTS: 24 PEDs answered (61.5% of the 39 PEDs included in the Working Group). The standard is reached in 2 indicators: Administration of coal after the ingestion of a substance adsorbed by it - 96.7% - and within the first 2 hours - 94.5% - and, except in two hospitals, the availability of antidotes. Three indicators (availability of protocols, beginning decontamination in the first 20'- 86% - and performing gastric lavage - 30% -) did not reach the standard. CONCLUSIONS: According to our indicators, it is possible to improve the quality of care given to patients with acute poisonings in Spanish PEDs. The application of quality indicators in pediatric poisoning is useful to detect deficiencies of care and propose strategies for improvement.

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ABSTRACT FINAL ID: OS06-G;

TITLE: Impact on Quality of Life by Improving Asthma Long-term Control Medication in Patients with Persistent Asthma in a Pediatric Emergency Department (PED)

ABSTRACT BODY:

Abstract Body: OBJECTIVES: Studies have shown the benefits of beginning or stepping up asthma long-term control medication in the PED, but few have followed up these patients to asses their improvement on their quality of life. Our goal was to assess the impact of improving controller medications on quality-of-life in children with persistent asthma symptoms attended in the emergency department. METHODS: Children aged 1 to 14 years attended for acute asthma in the ED and persistent asthma symptoms were included. Demographic, historic, and treatment data were collected during ED visit. At discharge from the PED their long-term control treatment was either begun or improved based on the National Asthma Education and Prevention Program (NAEPP). Two follow-up telephone interviews at 2 and 6 weeks after the ED visit were completed. Parents were asked about child quality-of-life and current overall asthma status using respectively an 8-item asthma-related quality-of-life (ARQoL) instrument and a 6-item pediatric persistent symptoms tool (PACT) previously validated. RESULTS: A total of 164 patients were enrolled between May and December, 2010 and follow-up was complete in 128 patients (78.04%) (mean age: 57.15 ± 37.5 mo). Asthma control treatment was begun in 77 (60.2%), stepped up in 37 (28.9%) and improved in the same step in 14 (10.9%). Ninety four patients (73.4%) experienced a decrease in the persistent asthma symptoms and 78 (60.9%) an improvement in quality-of-life between 2 and 6 weeks after ED visit. Mean ± PACT punctuations and ARQoL scores at 6 weeks follow-up were significantly lower than those registered at 2 weeks, (27.01 ± 11.30 vs 23.09 ± 8.12; $p< 0.01$) (31.42 ± 12.22 vs 26.23 ± 8.82: $p<0.01$) respectively. There was a significant correlation between the ARQoL score and PACT punctuation ($r = 0.815$; $p<0.01$). CONCLUSIONS: Fitting long-term control medications in children attended for acute asthma in ED is associated with a decrease of asthma persistent symptoms and an improvement in the quality-of-life.

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ABSTRACT FINAL ID: OS07-A;

TITLE: Emergency Abdominal Surgery in the Elderly: The Experience of a Peripheral Hospital

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Emergency abdominal surgery may become life-threatening for old patients due to difficulties in diagnosis and concomitant diseases. This study aims to investigate the special characteristics of emergency surgical intervention in the elderly. METHODS: 161 patients aged 60 years and above who had undergone emergency operations during 5 years (2006-2010) were retrospectively studied, according to demographic features, diagnosis, associated maladies, postoperative course, complications and outcome. RESULTS: The mean age of patients was 76.35 years (60-97) and the male-female ratio was 90/71. Octogenarians were 46 (28%). The most frequent causes were strangulated hernias 44 (27%), biliary tract diseases 22 (13.6%), acute appendicitis 20 (12.4%), hollow viscus perforation 19 (11.8%), mechanical bowel obstruction 19 (11.8%) and mesenteric ischemia 18 (11.2%). 140 patients (87%) had one or more associated diseases, cardiovascular and respiratory being the commonest ones. 136 patients recovered, remained free from major complications and left the hospital within 9.4 days (95% confidence interval (95% CI)= 7.2 to 11.5 days). However, the remaining 25 patients developed at least one major complication, including sepsis, cardiopulmonary and renal failure and death, and their mean hospital stay was 15.6 days (95% CI= 12.4 to 18.8 days). 10 re-operations were performed due to hemorrhage, bowel obstruction, postoperative peritonitis and wound complications. The mortality ratio was 11.7% for the early postoperative period. In the fatal cases, 52% were older than 80 years and 67% were assessed as ASA IV or V class. CONCLUSIONS: External strangulated hernias and calculous cholecystitis are the most frequent causes for emergency operations in the elderly. Vigilance and detailed preoperative evaluation are mandatory, because these patients constitute complex cases. Contemporary medical equipment and well-trained medical personnel substantially contribute to a successful outcome. Peripheral hospitals play a critical role in the surgical treatment for this group of patients, especially in rural, isolated or poor regions of the country.

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ABSTRACT FINAL ID: OS07-B;

TITLE: The KUB X-ray: Is it Still a Useful Investigation for Renal Colic?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The British Association of Urological Surgeons advocates performing KUB x-ray as the initial investigation for patients presenting with symptoms suggestive of renal colic. In our institution, patients presenting to the emergency department (ED) with suspected renal colic will have a KUB x-ray performed and those requiring admission will go on to have in-patient CTKUB. The aim of this study was to determine the sensitivity of the KUB x-ray at detecting calculi and refine investigation of renal colic to minimise radiation exposure to patients. METHODS: This was a retrospective study of case notes and radiology reports. Patients were identified that had presented to the ED and were subsequently admitted for investigation of renal colic between the 1st August and 30th November 2010. Only patients that had both x-ray and CT KUB were included. Radiology reports were analysed for each patient and the findings between x-ray and CT scan were compared. Using CT-KUB as the gold standard investigation, sensitivity and specificity were calculated for x-ray stone detection. RESULTS: 56 patients were identified during the study period, of which 36 (64%) were male. Ages ranged from 22 to 83, mean 42. 31 patients out of 56 had stones detected on CT scan of which 10 were causing obstruction. 20 of these 31 were not seen on x-ray. There were 4 false positive results on x-ray. Sensitivity of x-ray for detecting renal calculus in our institution was 35%, specificity was 84% and positive predicted value was 73%. There were no additional x-ray diagnoses, 10 patients had incidental findings on CT, 2 of which were clinically significant. CONCLUSION: KUB x-ray is neither specific enough nor sensitive as an investigation for renal colic in the emergency department. The radiation exposure, in addition to that of CT, cannot be justified.

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ABSTRACT FINAL ID: OS07-C;

TITLE: Emergency Department Activity in Digestive Tract Cancer Patients from a Year to Three Months Prior to Their Diagnosis

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Digestive tract cancers, including esophageal cancer, gastric cancer, hepatic cancer and colorectal cancer, are common in Taiwan. Early detection is essential for better prognosis. We aimed to evaluate any significant change of emergency department activity in digestive tract cancer patients from a year to three months prior to their diagnosis. METHODS: The patient samples of our study were extracted from the databank of National Health Insurance (NHI) between 1997 and 2008. We collected our patient samples by using adequate ICD code. Emergency department activity was defined as different items of clinical imaging and laboratory examination done in the emergency department and collected by adequate NHI code. Digestive cancer patients were considered as case group and traumatic fracture patients as control group. Multivariate logistic regression was used to compare the variables of emergency department activity between case and control group. In order to avoid the confounding effect, we only included the emergency department activity from a year to three months prior to their diagnosis of cancer for comparison. RESULTS: In total, 7502 patients were included in this study, 2187 (29.15%) in the case group and 5315 (70.85%) in the control group. Result of multivariate logistic regression is shown in Table 1 and Table 2. CONCLUSION: The preliminary results of our study showed that emergency department activity increased significantly in patients with digestive tract cancer from a year to three months prior to their diagnosis of cancer. The emergency physicians should be alert regarding this group of patients since early detection can result in better survival rate.

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ABSTRACT FINAL ID: OS07-D;

TITLE: Incarcerated Hernias in Adults: Emergency Surgical Management and Risk of Bowel Resection

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Patients with hernias who have no elective operation may present with incarceration or strangulation, which may require emergency surgical intervention that is associated with significant morbidity and mortality. Our aim was to review the difficulties and complications in the emergency management of incarcerated hernias. METHODS: 71 patients with a mean age of 64.36 years (25-94 years) who underwent emergency operations during the last 5 years (2006-2010) were divided in two groups, one that required intestinal resection (group A) and one that did not (group B). Both were retrospectively studied, according to demographic features, diagnosis, postoperative clinical course, complications and outcome. RESULTS: The male-female ratio was 40/31. 32 patients (45%) suffered from inguinal hernia, 18 (25%) from ventral-incisional hernia, 8 patients (11.2%) from epigastric hernia, 7 patients (9.8%) from femoral hernia and 6 (8.4%) from umbilical hernia. Group A (n=14) predominantly presented with inguinal hernias (2 of which were Amyand's) and incisional ones. Women required intestinal resection more often than men in a statistically significant way ($p<0.05$). Group A consisted mainly of old patients, as only 4 were younger than 65 years of age ($p<0.05$). Patients who had undergone intestinal resection had prolonged hospital stay compared to group B and presented more often with more serious postoperative complications ($p<0.05$). CONCLUSIONS: Incarcerated hernias are more common in men, but intestinal resection is required more often in women. The risk of intestinal resection is higher for female patients with incisional and femoral hernias and for male patients with inguinal hernias. Those who undergo intestinal resection are usually older than 65 years and present higher complication rate. Prolonged hospitalization, concomitant diseases and high ASA score appear to be significant factors for unfavorable outcomes. Taken into consideration that hernia incarceration and emergency operation is associated with high morbidity and mortality, elective repair of hernias should be performed whenever possible.

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ABSTRACT FINAL ID: OS07-E;

TITLE: Initial Clinical Findings of Patients Diagnosed Post-Operatively with Appendicitis at the South of Puerto Rico Hospital's Emergency Department

ABSTRACT BODY:

Abstract Body: OBJECTIVE: It was our main objective to compare the presenting signs and symptoms of patients with acute appendicitis in our southern Hispanic population with those found in mayor textbooks and previous studied population from northeastern Puerto Rico. METHODS: The method consisted of retrieving the main signs and symptoms, as well as laboratory and radiographic data, from medical records of patients with a pathologic exam positive for appendicitis. This data was then compared with those found on mayor textbooks. RESULTS: Our findings demonstrate a significantly lower anorexia complaint as well as emesis in our studied population as compared with major textbooks and reviewed literature. CONCLUSION: The absence of these, once considered hallmarks of appendicitis, must not lead the physician to rule out this surgical diagnosis.

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ABSTRACT FINAL ID: OS07-F;

TITLE: How Useful are Plain Abdominal X-ray Investigations in Emergency Department Patients?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Plain abdominal X-ray exposes patients to very important radiation as it is 35 times the amount delivered by chest X-ray. The Royal College of Radiologists (RCR) has recently made recommendations to codify and limit the prescription of plain abdominal X-ray investigations, but has not specified whether or not these recommendations should be respected in emergency departments. Our objective was to verify if the RCR recommendations are taken into account in our emergency department and to show their contribution to the diagnosis. METHODS: This descriptive prospective study was carried out over 15 days. All hospital files concerned with plain abdominal X-ray investigation were included in the study. A prior record filled by an emergency physician specified the implementation of the recommendations and their contribution to the diagnosis. RESULTS: One hundred patients were involved in the study. Prescription of the plain abdominal X-ray investigation was based on suspicion of urinary lithiasis in 63% of cases, acute intestinal occlusion in 9% of cases, acute pyelonephritis in 9% of cases, perforated ulcer in 6% of cases, biliary lithiasis in 3% of cases, acute appendicitis in 2% of cases, abdominal trauma in 2% of cases. In the remaining 6% of cases, plain abdominal X-ray was prescribed to confirm the diagnosis of acute episode of chronic inflammatory disease of the bowel, acute pancreatitis, upper GI bleeding, ingestion of a foreign body as well as to elucidate an undifferentiated abdominal pain and a post-traumatic testicular pain. Guidelines of the RCR were respected in 78% of cases. In 12.92% of them the recommendations helped in making a diagnosis. The positive predictive value of the guidelines in their contribution to establishing the diagnosis was evaluated at 12.92% whereas the negative predictive value was 100%. CONCLUSION: Prescription of plain abdominal X-ray in accordance with the recommendations of the RCR was partly followed in our emergency department. Adaptation of the guidelines to the context of emergency medicine seems to be necessary.

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ABSTRACT FINAL ID: OS07-G;

TITLE: The Model in Emergency Department, Based on Classification Tree Methods to Stratify the Diagnosis Related Groups of Patients with Right Iliac Fossa Pain

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Building a simple model in emergency department, based on classification trees (CT) that combines classic Alvarado Scoring System (ASS), inflammatory markers, patient characteristics and clinic of right iliac fossa (RIF) pain. METHODS: This prospective observational study, which includes 252 patients, older then 14 years, with RIF pain. The signs, symptoms, laboratory values and pathology reports of each patient were collected and evaluated. The construction of multinomial multivariable model was done using CART methodology (Classification and Regression Trees, autonomic selection of hierarchy of variables, cut-off points of continuous variables and cross-validation). Valuation was done using ROC analysis (AUC (95% CI)). RESULTS: Out of total 252 patients, 53% were males. The age ranged 33.3±16 years. Final diagnosis we divided in 4 groups: 1 - (AA) Acute appendicitis (36,1%), 2 – (NsP) Non-specific RIF pain (46 %), 3 - (IBD) Inflammatory bowel disease (6.0 %), 4 - (NID) other abdominal disease without inflammation (11.9%). Efficiency of simple models: ASS 0,76(0,70- 0,82) and C-reactive protein (CRP) 0,75(0,69-0,81). The CT selects the variables of ASS, CRP, sex and duration of the clinical symptoms determining 7 groups of patients (application of decision rules): 3 groups of probability of AA (59,3-62,5-90,5%), 2 with probability of NsP (68,9-82,6 %) and 2 without probability superior then 50%. The CT shows the efficiency for AA of 0,89 (0,85-0,93), NsP 0,84 (0,79-0,89), IBD of 0,84 (0,78-0,90) and for NID 0,66 (0,57-0,75. CONCLUSION: In the patients with RIF pain, the diagnostic efficiency of ASS and CRP separated, is insufficient to stratify the diagnostic probabilities. The methodology based on CT, offers us an easy way to identify the groups of patients with different possibilities of diagnosis. The CT establishes groups with high probability of AA and NsP, and other groups of patients with questionable diagnosis will be submitted to more diagnostic tests or observation in the emergency department.

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ABSTRACT FINAL ID: OS08-A;

TITLE: Multi-Site Validation of an Emergency Ultrasound Image Rating Scale--A Pilot Study

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Currently bedside ultrasound (BUS) competency in the USA is largely defined by number of exams completed. We hypothesize that quantifying BUS image attributes is a better mechanism for quality assurance feedback and a more accurate indicator of trainee progress. To date there has been no widely accepted BUS image rating scale. Our aim was to introduce and report preliminary testing of a 3-component, 8-point BUS rating scale (URS). METHODS: Gallbladder BUS was selected as the test case. Twenty deidentified BUS image sets (still images and clips) were forwarded electronically to 16 reviewers (13 attendings, 3 fellows) at 6 U.S. training sites, along with detailed instructions and examples for the URS. Each rated the BUS sets using the pilot URS. Training slides and sheets provided explanation, examples, and optimal anatomical landmarks for the URS. The URS rated "Landmarks(L)" from 1-5, "Image Quality(Q)" from 1-3, "Annotation(A)" from 1-2, for a "Total(T)" score range of 3-10. Raters also decided whether each BUS set would be "Clinically Useful" (yes or no)(U). RESULTS: Among 13 faculty raters, experience averaged 7.8 years and 60 images reviewed per week (range 2-15, 5-300). Among all 16 raters, the mean scores were 2.93(L), 2.1(Q), 1.62(A), and 6.68(T) respectively. Kendall's correlation coefficients were 0.55(L), 0.57(Q), 0.26(A), 0.63(T), and 0.45(U). All URS elements correlated significantly with Clinical Usefulness ($p < 0.001$). Spearman's correlation coefficients between Clinical Usefulness and scoring elements were 0.40-0.66. Correlation coefficients between each reviewer and the entire group ranged from 0.31 to 0.69 and was independent of BUS review experience beyond fellowship. CONCLUSION: Our results suggest that development of a valid URS is feasible. The higher correlation for Landmarks and Total Scores may be an artifact of the wider scale ranges or the more explicit training for Landmarks. Next steps: raise the scale ranges to remove difficulties with only 2-3 choices, expand reviewer panel, and add organ systems.

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ABSTRACT FINAL ID: OS08-B;

TITLE: Ultrasound Evaluation of the Effect of Head Rotation on the Relationship of the Internal Jugular Vein and Carotid Artery

ABSTRACT BODY:

Abstract Body: OBJECTIVES: Previous studies have shown that when the internal jugular vein (IJV) is 46-90 degrees in relation to the carotid artery (CA) that safe cannulation of the vein would be difficult, if not impossible. Our goal was to further examine the anatomical relationships of the IJV and CA during head rotation to determine what head position would decrease the risk for CA puncture. METHODS: This is a prospective study using a convenience sample of 100 emergency department patients. Patients were placed in Trendenlenburg and the anatomic relationships of the right and left internal jugular veins and carotid arteries were recorded with head rotation at 0, 45, and 80 degrees. All images and measurements were obtained with a 10-5 MHz linear array transducer in the transverse orientation. A goniometer was used to determine the position of the internal jugular vein relative to the carotid artery. Using the center of the carotid artery as the horizontal axis +0 to +180 degrees depicted the vein as superficial to the artery and 0 to -180 degrees as deep to the artery. The data was then sorted by 45 degree increments and degree of head rotation. Patients who had the IJV in a 46-90 degree relationship to the CA were deemed at high risk for carotid puncture. RESULTS: At 0 degrees of head rotation 10.1% of right IJV and 19.1% of left IJV were in the high risk zone. At 45 degrees of head rotation 16.1% of right IJV and 24% of left IJV were in the high risk zone. At 80 degrees rotation 24.2% of right IJV (p=<0.001) and 39% of left IJV (p= <0.001) were in the high risk group. In addition, 3% of patients had reversal of the normal anatomy placing the CA more superficial to the IJV. CONCLUSION: Our study corroborates the previous studies on this topic. Increasing head rotation will increase the possibly of complications during IJV cannulation. The left IJ appears to have a higher degree of difficulty as compared to the right. Placing the head in neutral position, avoiding rotation, and using ultrasound guidance are suggested to minimize complications.

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ABSTRACT FINAL ID: OS08-C;

TITLE: Can Common Bile Duct Measurements be Excluded in the Emergency Ultrasonographic Evaluation of Patients with Gallstones?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Measurement of the common bile duct (CBD) has traditionally been considered an integral part of gallbladder ultrasonography, but can be difficult especially for novice sonographers. This study examined the incidence of isolated CBD dilation in patients with suspected gallbladder pathology and the need for universal sonographic CBD measurement in ruling out acute gallbladder disease. METHODS: This was a retrospective chart review performed on all patients undergoing a radiology ultrasound (US) and subsequent cholecystectomy between July 2008 and June 2010. Each ultrasound was evaluated for presence or absence of sonographic Murphy's sign (SMS), gallbladder wall thickening (GWT) and pericholecystic fluid (PCF). A "positive" US was defined as a scan including at least one of SMS, GWT or PCF, regardless of CBD diameter. Contemporary lab values were collected, including white blood cell count, alkaline phosphatase, aspartate aminotransferase, alanine aminotransferase, total/direct bilirubin and lipase. Post-operative gallbladder pathology reports were obtained as the gold standard for final diagnoses. RESULTS: A total of 132 charts were reviewed. 125 of these demonstrated a pathology-confirmed diagnosis of cholecystitis (94.7%). 77 cases demonstrated normal CBDs with diameters less than or equal to 6 mm (58.3%) and 55 cases demonstrated dilated CBDs with diameters greater than 6 mm (41.7%). Of the cases with a dilated CBD, 10 (18%) demonstrated a "positive" US, 17 (31%) demonstrated at least one lab value above the accepted normal range and 28 (51%) demonstrated both a "positive" US and at least 1 lab abnormality. There were 0 (0%, 95% CI 0-2.2%) cases of dilated CBD that occurred in isolation without either a "positive" US or lab abnormality. CONCLUSION: Omission of CBD measurement during routine US of the gallbladder is unlikely to result in missed gallbladder pathology requiring cholecystectomy.

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ABSTRACT FINAL ID: OS08-D;

TITLE: Systematic Review: Emergency Department Bedside Renal Ultrasonography for Diagnosing Nephrolithiasis

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The use of ultrasound to diagnose kidney stones has been well studied in the radiology literature. There is no systematic review of the Emergency Department (ED) experience with ultrasonography for diagnosing nephrolithiasis. We reviewed systematically the literature for the operating characteristics of ED ultrasonography for kidney stones. METHODS: We searched Pubmed and EMBASE databases for randomized controlled trials from 1965 through November 2010 using a search strategy derived from the following PICO formulation of our clinical question: Patients: Patients (18+ years) suspected of having a kidney stone. Intervention: Bedside ED ultrasonography to detect hydronephrosis or calculi. Comparator: Gold Standard for kidney stones was either a non-enhanced Computer Tomography (CT) or Intravenous Pyelography (IVP). Outcome: Operating characteristics (Sensitivity, Specificity, Predictive Values and Likelihood Ratios) of ED renal ultrasonography wee analyzed using a Forest Plot (95% CI) calculated by Review Manager Version 5.0 (Revman 5.0) Qualitative methods were used to summarize the study results. RESULTS: Our initial search strategy identified 546 articles, 462 were excluded by relevance of title or abstract, 47 by not being in the ED, 25 with no kidney stone, 10 retrospective. Leaving 2 studies with 108 and 83 patients respectively. Sensitivity 90% - 72%, Specificity 59% - 73%, PPV 72% - 58%, NPV 28% - 42%, LR+ 2.12 – 2.67, LR- 0.17 – 0.38. The heterogeneity between the 2 studies can be explained by the studies' small sample sizes and variability in operator ultrasound experience. CONCLUSION: We identified 2 high quality studies of the operating characteristics of ED bedside ultrasonography in diagnosing nephrolithiasis. Depending upon the pre-test probability of a patient with a kidney stone ED ultrasonography may be appropriate to diagnose but not exclude nephrolithiasis.

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ABSTRACT FINAL ID: OS08-E;

TITLE: Bedside Urinary Bladder Duplex Ultrasonography for the Detection of Obstructing Ureteral Calculi in the Emergency Department

ABSTRACT BODY:

Abstract Body: OBJECTIVE: On multiple occasions, patients with a known history of nephrolithiasis present to the emergency department (ED) with a history consistent with renal colic, resulting in repeated exposure to ionizing radiation. The objective of this study is to determine the test characteristics of ED bedside urinary bladder ultrasonography for the diagnosis of obstructing ureteral calculi. METHODS: We conducted a prospective observational pilot study on a convenience sample of adult ED patients with suspected renal colic. All patients received urinary bladder duplex ultrasonography (UBDU) at the bedside. Non-clinician research assistants were trained how to perform UBDU during two 30 minute sessions. UBDU consisted of counting the number of ureteral jets emanating from each ureterovesicle junction (UVJ) over a 4-min period. The total jet frequency (TJF) was defined as the total number of jets counted from each UVJ over 4 minutes. The relative jet frequency (RJF) was defined as the number of bladder jets on the symptomatic side divided by the TJF. RJF ≤ 40% was considered an abnormal test. Patients were excluded if they had an empty bladder on ultrasound or if the TJF was ≤ 3. UBDU was compared to computed tomography (CT) urogram for the diagnosis of obstructing ureteral calculus. The ultrasound operator was blinded to CT results. RESULTS: 60 patients were enrolled; 19 were excluded due to an insufficient TJF. Of the remaining 41 patients, 12 patients had ureteral calculi > 4 mm in size, and seven patients had ureteral calculi ≤ 4 mm in size. Using an RJF ≤ 40%, UBDU has an overall sensitivity of 90% (95% CI 67-99), specificity of 67% (95% CI 41-87), positive predictive value (PPV) of 74% (95% CI 52-90), and negative predictive value (NPV) of 86% (57-98). Of note, the two ureteral calculi that were not identified by an abnormal RJF were located in the proximal ureter. CONCLUSION: UBDU may be a useful bedside diagnostic test for the detection of ureteral calculi, potentially minimizing the need for ionizing radiation in patients with a normal RJF.

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ABSTRACT FINAL ID: OS08-F;

TITLE: Can Ultrasound of the Optic Nerve Sheath be Used to Predict and Monitor Changes in Intracranial Pressure?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: We seek to determine if serial measurements of the diameter of the optic nerve sheath made by ultrasound examination can reliably be used to monitor changes in intracranial pressure (ICP). METHODS: A convenience sample of 16 patients identified in the emergency department (ED) as requiring placement of an invasive ICP monitor was chosen for this study. Using ultrasound, serial measurements of the optic nerve sheath diameter (ONSD) were taken and recorded at 30-minute intervals following placement of the ICP monitor for the four hours, and a single measurement was made and recorded at both 24 and 48 hours. At each interval, the ICP as measured by the invasive ICP monitor was also recorded. RESULTS: The data obtained was initially analyzed using both the Pearson correlation coefficients and scatter plots. Mixed model regression was then used to evaluate whether optic nerve diameter was a valid predictor of ventriculostomy measurement. Time does not change the correlation between ONSD and ICP as measured by intracranial monitoring. There was a statistically significant relationship between the measurement of the right ONSD and ICP ($p<0.0001$). There was a relationship between the left ONSD and ICP ($p=0.0013$). The measurements of the right and left ONSD were found to consistently correlate with each other. CONCLUSION: There appears to be sufficient evidence to suggest that ultrasound of the optic nerve sheath can reliably be used to monitor changes in intracranial pressure over time. However, this relationship appears to be stronger using the right ONSD for evaluation than the left.

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ABSTRACT FINAL ID: OS08-G;

TITLE: Can Emergency Physicians Diagnose Appendicitis In A Pediatric Population Using Bedside Ultrasonography?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Our objective was to assess the ability of emergency physicians trained in ultrasonography (US) to diagnose appendicitis in a pediatric population. METHODS: Design: Prospective case series. Population: A convenience sample of emergency department (ED) patients, ages 3-18, who were suspected to have appendicitis by the attending emergency physician. Protocol: Informed written consent was obtained from the caregiver. One of five ED physicians trained in US, not involved in the patients' care, performed a bedside ultrasound of the right lower quadrant. The US was considered positive if the appendix was non-compressible with a diameter greater than 6mm, or if a fecolith was present. The patient, family, treating emergency physician, nurses, radiologists, and surgeons were blinded to the results of the bedside ultrasound. Findings were compared with the criterion standard, which included imaging from the radiology department, pathology reports, or telephone follow up at two weeks. We calculated the sensitivity, specificity, likelihood ratios, and the 95% confidence intervals (95% CI). RESULTS: Fifty four patients were enrolled: 16 had a computerized tomography of the abdomen (CT), 33 had an US by radiology, 7 had both on the day of the visit, 9 had only a surgical consult. Eighteen patients were found to have appendicitis. The bedside US by the ED physicians had a sensitivity and specificity of 61% (95% CI 38% to 84%) and 98% (95% CI 96% to 100%) respectively. Positive Likelihood Ratio (LR) 28.7 (95% CI 4 to 207, Negative LR 0.4 (95% CI 0.2 to 0.7). The average time to perform the bedside US was 10 minutes. CONCLUSION: In pediatric patients presenting with signs and symptoms suspicious for appendicitis, a positive bedside ultrasound performed by a properly trained emergency physician may obviate the need for further testing. However a negative bedside ultrasound does not exclude the diagnosis of appendicitis.

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ABSTRACT FINAL ID: OS09-A;

TITLE: Beds Problem Downstream an Emergency Department: Needs and Perspectives

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Several studies have pointed to the lack of hospitalization beds as a major factor in overcrowding in emergency departments (EDs). Despite the computerization of data, we find it difficult to obtain reliable data on inpatients. We wanted to gather some data to further understand the management of inpatients in our ED. Our main objective is to compare the ideal orientation for the physician with the real orientation. Another objective was to gather a sense of the doctor on matching the final destination and the disease of the patient. METHODS: Prospective, observational, single center study. We asked doctors (seniors and juniors) to fill out a form for every patient admitted or transferred from our ED over a 15 days period. Questions were asked about the ideal orientation for the physician, the actual orientation, the fit between the orientation and the patient's pathology. RESULTS: During the study period 291 patients were admitted corresponding to 13% of the patients that attended our ED. The mean age of the patients was 57 years (16-97). One third of inpatients were over 75 years. The Emergency hospitalization unit was considered as an ideal orientation for 6.5% of inpatients but was the final destination of 29.9%. The geriatric ward was noted as the ideal destination for 8.9% of patients but was the final destination of 5.8%. Internal medicine was the ideal destination in 9.6% of inpatients but received 16.5% of admitted patients. 83.5% of patients were admitted in our hospital and 16.5% transferred. Reason for transfer was lack of bed in 52.6% and lack of the required specialty in 34.2%. The final orientation of patients was considered by the treating physician as optimal in 56.1%, correct in 30.7%, limited in 9.4% and inadequate in 3.8% of cases. CONCLUSION: ED overcrowding is a daily problem. A reflection should be conducted in each hospital to improve flow and provide the ED with beds available in quantity and quality. Possible areas of work should be to explore in each hospital the ratio of planned hospitalizations/hospitalizations through the ED. Another issue is the day and time of exit from the hospital for the patients.

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ABSTRACT FINAL ID: OS09-B;

TITLE: Preliminary Results of a New Mobile Intensive Care Ambulance Program

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Ubonratchathani is a north-east Thailand province that covers 15,744 km2 with a 1,803,772 population. Patients who live in rural communities have barriers to receiving high quality health care that is available in urban areas. In critical/emergency case such as trauma, Acute Coronary Syndromes, stroke and shock, transfer to specialists may reduce mortality and complications. In December 2010, The Mobile Intensive Care Ambulance network was implemented. Critical referral guidelines were developed with stakeholders such as emergency physicians, general physicians, nurse both in referring and receiving hospital and supplied to the community hospital with real time monitoring instruments, ventilator, digital cameras in ambulance, called Mobile Intensive Care Ambulance: MICA. In addition, a 4-month education and software training to send and interpret ECGs, vital sign and patient care were implemented for referring nurses who work in MICA. Mortality rate, The outcomes in this study were length of stay (LOS), and re-admitted rate. METHODS: Data was abstracted from critical care registry and mortality, LOS were calculated when patients discharged from hospital. Re-admitted rate was calculated when patients revisited to emergency department in 30 days after discharge. Type of discharge were discharge by doctor, refer back to community hospital and death. RESULTS: A total of one thousands twenty four patients were evaluated remotely from December 2010 through January 2011. 62.8% of whom were males; the mean age was 56.14 years (SD 23.25). Overall mortality rate was 11.89%. In surviving patients, discharge by doctor rate was higher than refer back to community hospital (53.12 and 10.53 %). LOS was 6.39 days (SD 8.24) and non-trauma patients had shorter LOS than trauma patients (5.93 and 8.89 days). Re-admitted rate was 7.56% and statistical significant in non-trauma patients (p 0.012). CONCLUSION: The Mobile Intensive Care Ambulance program proved to be an effective means of improving critical care during patient transfer. This result could be utilized for future planning and improve quality or care for rural population.

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ABSTRACT FINAL ID: OS09-C;

TITLE: A State-wide Survey Investigation of the Reasons for Lack of Availability of Plastic Surgeons for Emergency Department Call

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Changes in the United States healthcare system have resulted in a lack of specialist availability for Emergency Department (ED) call. Plastic surgery is the specialty that the greatest proportion of ED's report difficulty in obtaining. Our objective was to determine the reasons that plastic surgeons are reluctant to take ED call. METHODS: This is a prospective survey study. Using SurveyMonkey.com, a link to a nine question multiple choice survey was emailed to plastic surgeons listed in the American Society of Plastic Surgeons website as practicing in our State. They were asked about their call status, reasons for taking or not taking call, and inducements to take call. Non-responders were sent another email 2 weeks later encouraging response to the survey. RESULTS: 26/80 plastic surgeons responded to the survey (32.5%). Half take ED call, all of whom are required to do so by the hospital where they have privileges. Fewer years in practice is a significant predictor for taking call ($p = 0.0288$). The single statistically significant reason for reluctance to take call ($p=0.024$) was "being consulted for cases where I don't feel my services are needed" (31% who take call (TK), 89% who don't (NTK)). Financial reasons were the only statistically significant inducements to taking call. 100% of TK and 75% of NTK surgeons would take call voluntarily if they were paid a stipend ($p=0.0061$), 100% TK and 75% NTK would take call voluntarily if they were guaranteed payment for uninsured patients ($p=0.0113$), and 92% of TK and 50% of NTK would take call voluntarily if their malpractice insurance were covered by the hospital. CONCLUSIONS: In our State, plastic surgeons would be more available to take call if they were consulted more selectively and if they were offered better financial compensation. Limitations: The study was performed in one state. The response rate of 32.5% is low, but is standard for a survey study.

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ABSTRACT FINAL ID: OS09-D;

TITLE: Changing Triage Systems – Impact on Emergency Department Performance

ABSTRACT BODY:

Abstract Body: OBJECTIVE: There are few studies of the impact of a triage system on the overall performance of an emergency department (ED). The validity of individual triage systems and their ability to predict patient outcome has been reported but the effect on the overall ED performance is not as well studied. We wanted to measure performance indicators to assess the impact of two different triage systems on the performance of one ED. In 2007 Manchester Triage System was used, and in 2008 Adaptive Process Triage (ADAPT) was implemented and used. The aim of this study was to assess changes in ED quality expressed as performance indicators after the switch of one triage system to another. METHODS: This was a single-site, retrospective comparative study. Eligible for inclusion were all adult patients presenting for the first time within the study period July – December 2007 and 2008 at the ED at Södersjukhuset, Stockholm, Sweden (n=62928). The following performance indicators were assessed; 7 day mortality rates (7M), Length of Stay (LOS), Time to Doctor (TTD), patient Leaving Before Treatment was Complete (LBTC). Main outcome was 7 day mortality rates. Data was collected from the hospital administrative computer systems. We used Fischer exact test for dichotomous outcomes and Mann-Whitney U test for the continuous ditto. RESULTS: Background variables are presented in table 1. There was a 14% decrease in 7M (1.4% vs. 1.2%, p=0.01) between 2007 and 2008. LOS and LBTC were improved, while TTD worsened. For all the secondary outcomes statistical significance was proven, results are shown in table 1. CONCLUSION: The study at hand shows that values were better using ADAPT over MTS in all but one of the studied performance indicators. The clinical significance of the results is difficult to assess, while the changes in measured indicators are small and one clinically important indicator, TTD, showed worse values. Furthermore there were small but significant differences in background factors, all in favor of the 2008 group.
This raises interesting questions of the feasibility of using ED performance indicators to assess organizational changes.

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ABSTRACT FINAL ID: OS09-E;

TITLE: Cost-Effectiveness Study of the Introduction of a Semi-Automatic External Defibrillation Program in Galicia (Spain)

ABSTRACT BODY:

Abstract Body: OBJECTIVE: 63.000 myocardial infarctions occur annually in Spain, a third of them die before reaching the hospital. The semi-automatic external defibrillator (AED) device may sort this problem out if it is applied shortly after the collapse. Once the assistance results are analyzed, this study is intended to evaluate the cost-effectiveness relationship of the AED program, which has been carried out by the emergency service of Galicia (ES-061). METHODS: A cost calculation is done, by the means of the identification, classification and quantification of costs structure. In order to measure the effectiveness of the AED program, three indexes were established, each of them reflecting either the progress or the worsening resulting from the program implantation, regarding the following criteria: Criterion 1: Number of assisted patients (attempted resuscitations); Criterion 2: Vital signs recuperation; Criterion 3: Survival to hospital discharge. In order to find out the cost-effectiveness of the AED program, the cost-effect ratio will be calculated, taking survival as the effect: saved lives as a consequence of AED program implantation. RESULTS: Results are presented in the following order: total pre-AED; 12 months pre-AED; total post-AED. AED patients; 790; 451; 776. Defibrillated patients; 259; 148; 244. Return of spontaneous circulation at the point; 119; 68; 141. Survival to hospital discharge without any impairment; 48; 28; 90. Criterion 1 Index: 172,06; Criterion 2 Index: 207,36; Criterion 3 Index: 321,43. AED program cost-effectiveness (cost per patient discharged from hospital): 8.783,90 €. CONCLUSIONS: The AED program carried out by the ES-061 is undoubtedly effective, causing an increase of the number of assisted CRA, vital signs recuperations and hospital discharges. The cost of a saved life attributed to AED implementation is 8.783,90 €. AED program cost-effectiveness relationship in the Galician autonomous region is very high, as confirmed by this study.

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ABSTRACT FINAL ID: OS09-F;

TITLE: Family's Company at the Patient's Bedside - Evaluation of the Portuguese “Patients’ Accompaniment Law" at a Major Emergency Department (ED)

ABSTRACT BODY:

Abstract Body: OBJECTIVE: To allow the presence of family members at the bedside of their acutely ill relatives represents a challenge for overcrowded EDs. Until last year families’ were only exceptionally given permission to stay with their ill relatives in most of the Portuguese EDs. In order to humanize patient's care, the Portuguese Parliament adopted a law that provides the right for patients to be accompanied by a person of their choice from July 2010. METHODS: The authors describe how this law was implemented in a Portuguese central hospital with about 105000 ED visits per year. A task force developed rules and processes in order to operationalize the new law according to the department’s specificities. Information and sensitization sessions were organized for all professionals. From July 2010 every patient was allowed to choose an accompaniment. Invasive procedures and cardiopulmonary resuscitation were excluded. Ten months later relatives were asked to fill in a self-administered satisfaction questionnaire about how patient's families’ perceived patient's admission, their own welcome, professionals’ performance, facilities as well as their global satisfaction. The answers were submitted to a Statistical Package for the Social Sciences Analyses. RESULTS: The families' global satisfaction was high. Nonetheless there was felt to be a need of improving their reception, insufficient privacy, space and noise control and communication by healthcare professionals. CONCLUSIONS: The Portuguese "patients’ accompaniment law" was successfully put into practice in the authors' ED. An important step towards a more humane hospital environment was achieved. Nonetheless there is still room for improvement. There is also a need to learn whether healthcare professionals recognize the family's presence as an advantage by winning a new partner in their patient's treatment or rather a disadvantage by increasing overcrowding and feeling permanently questioned. It remains also unclear whether relatives should remain present during invasive procedures and cardiopulmonary resuscitation.

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ABSTRACT FINAL ID: OS09-G;

TITLE: Adverse Occurrences in a Tertiary Care Emergency Department

ABSTRACT BODY:

Abstract Body: OBJECTIVE: To identify adverse occurrences in the Emergency Department and their effects on patient health care management. METHODS: This was a retrospective chart review, during a period of two years (2008-2009) done in KFSHRC ER, a tertiary health care center in Kingdom of Saudi Arabia. The ED has 60,000 annual visits (75% adults vs 25% pediatrics) staffed by emergency medicine trained consultants, residents and interns. The hospital developed a computer based adverse occurrence report system that was available for hospital employees to report any adverse occurrences which impacted the quality of care given to the patient. The occurrences were classified according to an international system called Severity Assessment Code (SAC) to classify the level of severity and impact on quality of care. RESULTS: The adverse occurrences were classified as medical vs non-medical. Each of these categories were sub classified as serious, major, moderate or minor depending on the consequences either on the patients, the staff or the environment. Data analyses showed that medical related adverse occurrences were 25.5% vs 74.5% (non medical). Of the medical occurrences 1% were serious, 1% major, 10.1% moderate, 74.9% minor and 13% near misses. There were 3 deaths documented. The remainder were management related representing a total of 43.5% of total medical related errors, medication related represented 34.8%, and intravenous line related were 7.25%. The other major group was the non-medical of which 81% were minor. The majority of the non-medical adverse occurrences were specimen related representing 76.9%, followed by documentation related accounting for 5.6%, and communication related 5.5%. CONCLUSION: The medical adverse occurrences were one fourth compared to non-medical. However there were 3 deaths highlighting the fact that even a smaller percentage of AE can have significant impact. The difficulty with non-medical AEs is that they indirectly affect patient care and to determine the actual effect is variable and unpredictable. However it is encouraging to document that a higher percentage of occurrences are easily rectifiable.

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ABSTRACT FINAL ID: OS10-A;

TITLE: Analysis of Violence at the Emergency Room Against Health Professionals

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Health professionals are likely to be victim of both physical and verbal assault more than other workers. An Australian study shows that 30% of respondents experience at least one aggression daily. However, both in Italy and internationally, there has been an inadequate categorization of the incident types which staff are exposed to, leading to greater difficulties in defining and comparing research results. Our objective was to settle the actions needed to improve the safety of the health personnel working at two Emergency Rooms of the local health trust through the analysis and management of violence. METHODS: The local health trust forms reporting violence collected during the period September 2008 and August 2009 were analyzed and a bibliographic research in both national and international literature was carried out. A questionnaire consisting of 22 questions was developed and administered in September 2009 to 120 health professionals, 90 of whom responded. The results of all 90 valid questionnaires returned were analyzed. RESULTS: This study has identified the level of violent or aggressive incidents that staff are exposed to, the average assailant profile, the assaulting procedures, the area of greatest risk and the degree of concern about the attacks. CONCLUSIONS: The study gave a sight of reality that is close to studies in the scientific literature. The results allowed us to define the actions needed to increase safety for health workers.

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ABSTRACT FINAL ID: OS10-B;

TITLE: Are Safety-net Hospitals at Higher Risk of Closing their Emergency Departments than Non-safety-net Hospitals?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: EDs are required to care for all patients regardless of ability to pay, and therefore may be vulnerable to variations in market forces that govern health care in the US. This study aims to analyze factors associated with closures to determine whether safety-net hospitals are at higher risk of ED closure than non-safety-net hospitals. METHODS: We obtained ED and hospital information from the American Hospital Association Annual Surveys for all general, acute, short-stay hospitals in the US from 1990 to 2007. We merged financial information for the hospitals from Medicare hospital cost reports. Safety-net hospitals were defined as hospitals providing more than double the Medicaid care compared with competing hospitals in the region. Outcomes considered in this study were ED opening and closing years. Discrete-time proportional hazard models were used to analyze risk factors for closure. In adjusted hazard ratios we controlled for factors including county population demographics, hospital characteristics, and market factors. RESULTS: Our study sample began with 2,466 urban EDs in 1990 and dwindled to 1,954 by 2007. A total of 2,814 hospitals were analyzed. 10% of closed EDs were safety-net providers, compared with 6% of those that remained opened. A higher percentage of closed EDs were for-profit (28% versus 10%, $p<0.01$), smaller in size (23,786 visits compared with 33,992, $p<0.01$), and in the lowest quartile of the profit-margin distribution compared with EDs that remained open ($p<0.01$). Unadjusted hazard ratios indicated that safety-net hospitals were 1.6 times more likely to close their EDs compared to non-safety net hospitals ($p<0.01$). The trend persisted even after accounting for other market-based forces in adjusted hazard ratios (HR 1.4, 95% CI). CONCLUSION: This study shows that market forces influence ED survival. These findings are particularly compelling given that underserved populations utilize EDs at greater rates than other populations. Future policy initiatives must address our weakening ability to provide emergency care, particularly to vulnerable populations.

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ABSTRACT FINAL ID: OS10-C;

TITLE: The Effects of Traumatic Situations on Emergency Medicine Practitioners

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Emergency workers are exposed to events involving human pain. They work to rescue individuals and they learn to deal with stressful events, some of them could have a lasting impact. Vicarious trauma is a concept that is used to describe the experience of health workers who develop symptoms of traumatic stress as a consequence of working with traumatized individuals. The purpose of this study was to investigate this concept in emergency work. METHODS: The research was conducted in an ED (including a mobile intensive care unit). The sample consisted of 10 physicians, 25 residents, 5 nurses. The research utilized a self-report questionnaire format. The Trauma Attachment and Belief Scale is designed to assess the impact of directly and indirectly experienced trauma; it measures disruptions in beliefs related to five need areas that are sensitive to the effects of trauma: safety, trust, esteem, intimacy and control. Statistical analysis was performed. RESULTS: Most of the participants were women (72.5%), the mean age was 33.45 years. 48.7% reported a work experience for 3 years and 30.8% for over 15 years. The females had greater disruption in beliefs about safety, and physicians had greater disruption in beliefs about trust. Heightened disruption in beliefs about esteem and trust were associated with a high level of work experiences. The nurses did report more distress and dysfunctional beliefs about trust in oneself and others than residents, the physicians did report more distress and dysfunctional beliefs about trust than residents. CONCLUSIONS: The results support the hypothesis that the stressful events at the workplace lead to changes in how people think, feel and behave in relation to others and themselves. The females had greater disruption in beliefs about safety and residents had less disruption in beliefs about trust in themselves and others. Heightened disruption in beliefs about esteem and trust were associated with a high level of work experiences. Our hypotheses were confirmed: the context of emergency work could have a lasting impact on distress and beliefs about safety, esteem and trust about oneself and others.

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ABSTRACT FINAL ID: OS10-D;

TITLE: Immigration: Health Emergency?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The continuous gradual increase of immigration in Western Countries leads to not few concerns in the social, political, economic and health fields. In the latter context there is growing concern that the newcomers are not only carriers of dangerous diseases, but "exploit" resources and beds. METHODS: To verify this hypothesis, we analyzed the data on access of the ED of the San Carlo Borromeo Hospital of Milan, Italy, from 2005 to 2010. RESULTS: Annually our ED receives from about 80 to 85,000 patients of which, the percentage of foreigners, has gradually increased from 13.64 to 16.07%. Comparing the national patients group vs the foreign one, the average age is 42.77 vs 36.35 years, the percentage of top priority code (Red and Yellow) assigned by triage is 14.28 vs 10,78% and, as proof of this, the hospitalized patients in the former group are 14.84% against 10.31% of the second, while who left the ED before the end of clinical tests, is the 6.33 and 11.37% respectively. CONCLUSIONS: Data obtained from 564,887 patients overall, including 72,883 foreigners, lead us to believe that they have needs definitely all of health care resources that a civilized country can and must provide, but with all respect due to those who fear a waste of resources, these are primarily costs for preventive and hygiene and for the maternal and perinatal conditions, while those far more expensive related to the emergency-urgency, those about to the cardio-cerebro vascular conditions and their hospital stays, home care expenses and the ones for care of older people will remain still for a long time, the dubious privilege of western citizens.

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ABSTRACT FINAL ID: OS10-E;

TITLE: A Dedicated Staff of Emergency Physicians Leads to a Progressive Improvement in Test Appropriateness and Consequent Cost Reduction in the ED

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Modern health policy and quality control foster better appropriateness in investigation tests aimed at cost reduction for health care. Appropriateness is enhanced when diagnostic process follows evidence-based protocols. In the ED a dedicated and specifically trained medical staff is more keen to follow specific protocols. METHODS: In our Department, a level I ED in northern Italy managing about 40.000 patients per year, the medical staff was progressively changed during 2010 from non dedicated rotating physicians from different specialties to a dedicated staff trained in Emergency Medicine. In this year a series of diagnostic-therapeutic procedures for several emergent and urgent conditions were prepared and validated. This led to a revision of the informatics system available for blood test request and some blood tests were removed from standard laboratory routines and could be requested only manually. We recorded the number of requests for all the lab tests that were formerly included in a standard routine and since the beginning of 2010 were removed, and calculated the variation in percentage and the eventual cost reduction. RESULTS: In the following table and graph are represented the data observed from 2008 to 2011. The data for 2011 are a projection based on the results of the first 4 months. Looking at the trend for 2011 it can be a preview to cost reduction of more than 85.000 €. CONCLUSION: Our data demonstrate that the good application of quality control criteria and appropriateness in test requests are more likely obtained in the ED with a dedicated and trained medical staff, with a clear economic efficiency.

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ABSTRACT FINAL ID: OS10-H;

TITLE: Patient Safety in Emergency Departments: The Critical Role of Communication in the Patient Experience

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Effective communication and interpersonal skills have long been recognised as fundamental to the delivery of quality health care. There is mounting evidence that the pressures of communication in high stress work areas such as hospital emergency departments (EDs) present challenges to the delivery of quality care. Failures in communication have consistently been identified as a major cause of critical incidents resulting in patient harm and triggering many patient complaints. METHODS: In this paper we discuss findings of a three-year project in five EDs in Australia that involved recording and describing patient-clinician interactions through the ED from triage to disposition — identifying features of both successful and unsuccessful interactions. We used a qualitative approach with detailed communication analysis, including 1093 hours of observations, 150 interviews with staff and patients and 82 patients recorded from triage to disposition. RESULTS: The paper presents an analysis on interpersonal and experiential patterns in the discursive practices of patients and doctors. Key findings are outlined including how the absence of information about processes, the pressure of time within the ED, divergent goals of doctors and patients, the delivery of diagnoses and professional roles impact on patient experiences. We will describe the communication features of the interactions, contrasting transcripts where knowledge is shared and negotiated compared to others where patients are positioned as having little or no knowledge or control over their treatment. In these, patients' cues are missed, they rarely ask questions and are not informed about processes or protocols. CONCLUSION: We will present a framework that describes the communication strategies doctors' use to establish effective rapport with their patients. The framework divides these strategies into two categories — one relates to the way medical knowledge is communicated between doctor and patient and the second relates to the way doctor-patient relationships are developed. Both these aspects are necessary to achieve effective patient-centred care.

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ABSTRACT FINAL ID: OS11-A;

TITLE: Managing Chest Pain Patients in the Real World: Tailored Observation or Stress Testing Strategies?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Open label study to update management with stress testing or tailored observation in chest pain patients. METHODS: Low-risk patients (years 2008-2009) with nondiagnostic EKG and normal Troponin on admission underwent prolonged tailored observation with dedicated and skilled personnel or stress testing strategy. Patients who experienced recurrent angina or positive EKGs or positive troponins during observation or patients with positive stress testing were considered for angiography; otherwise they were discharged. End-point: Coronary stenoses ≥50%, or cardiovascular death, myocardial infarction, revascularization and rehospitalization for angina at follow-up. RESULTS: Out of 3.924 patients considered, 2.860 with atypical chest pain were discharged; 1.064 with typical chest pain were enrolled. Patients with known coronary disease, comorbidities, older age and female gender were likely managed with observation. Comparison of stress testing strategy and tailored observation showed areas under ROC curves as in Table and endpoint 15.0% versus 21.9%, respectively, during in-hospital stay and 3.7% versus 4.7%, respectively, at follow-up (Figure); the negative predictive value was 95.6% versus 94.0%, respectively, p=0.44. CONCLUSIONS: Questionable management of low-risk chest pain patients with prolonged tailored observation could be a valuable tool as compared to early stress testing strategy, in the real world.

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ABSTRACT FINAL ID: OS11-B;

TITLE: How to Manage Atrial Fibrillation in the Emergency Department: Novel Insight from the Real World

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Novel facilities as an Intensive Observation Unit (IOU) and an Outpatient Clinic (OC) could result in improving management of atrial fibrillation in the Emergency Department (ED). METHODS: Out of 3,475 patients enrolled, group A, with 1,120 patients presenting in years 2004-2005, was managed with a standard approach; group B, 992 patients, years 2006-2007, was managed with IOU; group C, 1,363, years 2008-2009, was managed with IOU and OC. The primary endpoint was reduction of admissions. RESULTS: Lack of rhythm control, diabetes and comorbidities were independent predictors of hospitalization. Admissions significantly decreased from group A (47%), B (37%) to C (22%), $p<0.001$. Predictors of admission accounted for 459, 389, 504 patients in group A, B, C, respectively, and actual admissions were 49%, 42%, 23%, respectively, $p<0.01$ (Figure; *$p<0.01$). Of note, one-third of patients of group C with lack of rhythm control and comorbidities were managed by the OC avoiding admission. Eventually, patients with AF lasting <48 hours (n=2,189) and without comorbidities (n=1,399) achieved sinus rhythm in 90% of cases. Spontaneous conversion occurred in 26%, electrical in 18% and pharmacological in 56%. Overall, antiarrhythmic drugs class III and IC gained sinus rhythm in 18% and 82%, respectively, $p<0.001$. Adherence to guidelines was confirmed by the increasing use of Class IC in patients without structural heart disease from 72% in group A to 85% in group C, $p<0.001$. CONCLUSIONS: The novel organization of the ED significantly reduces admissions irrespective of independent predictors of hospitalizations. Selected patients achieved sinus rhythm in 90%, the most with class IC antiarrhythmic drugs.

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ABSTRACT FINAL ID: OS11-C;

TITLE: Emergency Department Evaluation of Chest Pain by Stress-echo

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Diagnostic assessment of patients admitted to the Emergency Department (ED) with spontaneous chest pain represents a frequent and challenging task for emergency physicians. METHODS: Between 2008, June 15 and 2010, December 31, 408 subjects with an episode of spontaneous chest pain, non modified EKG and negative cardiac necrosis markers after at least 12 hours from the index event, were evaluated with exercise stress-echo (ESE, 208 subjects) or dobutamine stress-echo (DSE, 200 subjects) if unable to perform an adequate physical stress. Patients with inducible ischemia (Ii) were asked to undergo a coronary angiography (CA). Patients with a negative exam were discharged and they were contacted by telephone at least one month after discharge, to investigate symptoms recurrence or new cardiovascular events. The study population was divided into two subgroups, according to the presence of inducible ischemia (ES+ presence of Ii, ES- absence of Ii). RESULTS: Twenty patients showed non-diagnostic tests. Among 119 patients with ES+, 92 carried out CA, while 27 refused to undergo it. CA showed the presence of significant coronary artery disease (CAD) in 72 subjects. Among 269 patients with ES-, 1 patient referred an acute coronary syndrome at follow-up and 8 patients underwent CA, according to treating physician indication, with results positive in 7. As shown in Table 1, patients with ES+ were significantly older, more frequently affected by carotid or peripheral arterial disease. At baseline echocardiogram (Table 2), ES+ subjects showed larger left atrial and ventricular dimension, a worse left ventricular global and segmental systolic function. The stress-echo showed a sensitivity of 80%, a specificity of 97%, a positive predictive value (PPV) of 90%, a negative predictive value (NPV) of 94% and an accuracy of 93%. These results were confirmed by preliminary analysis on follow-up at six months (sensitivity 80%, specificity 97%, PPV 92%, NPV 93% , accuracy 93%). CONCLUSIONS: Stress echocardiography is a very accurate and reliable diagnostic tool for the assessment of patients presenting to the ED with spontaneous chest pain.

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ABSTRACT FINAL ID: OS11-D;

TITLE: Chest Pain Management: Role of Early Exercise Test in the ED

ABSTRACT BODY:

Abstract Body: OBJECTIVE: ED admissions for Acute Chest Pain (ACP) are about 4-5%. ED ACP protocols must be able to identify high-risk ACS patients who need immediate treatment, and those medium/low risk for ACS who could be discharged after an adequate diagnostic assessment. The aim of this retrospective study is to verify the role of early exercise test (EET) in the ED in the management of patients (pts) with ACP. METHODS: In our ED (Sandro Pertini Hospital 300 bed - ED adm 85,000 pts/yr; interventional Cardiology 24 /7, on call night shift) about 4.3% of patients are admitted with “ACP” as a main symptom. In 2009 a new ACP management protocol that includes an EET before discharge was introduced. Criteria for inclusion: pts presented to our ED with ACP age>16yrs, excluded trauma and gynecological, Group A (2008) and Group B (2010). In the absence of contraindications, ECG abnormalities, alteration of ACS biomarkers (Tni;0-6-12) and after 6 hours chest pain free 54 pts Group A underwent EET before discharge, the others had an EET booked at the outpatients’ dept. in about 3 days; while 334 Group B had EET. Patients with negative tests were discharged, while pts with positive/dubious/non diagnostic tests or with contraindications to undergo EET were admitted in cardiology or emergency medicine dept. to have a Stress Echocardiography (SEC). All pts with positive EET or SEC underwent coronary angiography. RESULTS: Group A (2.442 pts/ 4,29%) had 54 EET with 3 positive (5,5%); Group B (2.382 pts/ 4,47%) 334 EET with 12 positive (5,5%). Both groups had no adverse effects during EET. Diagnosis of ACS was 20,9% in Group A and 20,1% in Group B, and other diagnoses (pericarditis, pulmonary embolism, aortic dissection, pneumothorax) were 3,2% in Group A and 3.4% in Group B. Hospital admissions for ACP were 19,1% in Group A and 4,1% in Group B ($p < 0.005$); discharge diagnosis were: “unstable angina” 19.1% Group A and 79,6% Group B; “Chest Pain” 76.4% Group A and 20.4% Group B ($p < 0.001$). CONCLUSION: ACP management protocol, with EET in the ED, reduces time for pts to complete a diagnostic track, improves security in discharging and reduces inappropriate admissions.

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ABSTRACT FINAL ID: OS11-E;

TITLE: Clinical and Epidemiological Characteristics of Patients with Acute Heart Failure: Gender-Dependent Survey

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Heart failure (HF) is one of the leading causes of death worldwide. The aim of the present study was to investigate clinical and epidemiological characteristics of the Emergency Department (ED) patients (pts) presenting with acute HF (AHF). METHODS: In the Sisters of Mercy University Hospital there were 22,713 ED pts in year 2010, 1,526 (6.7%) with a diagnosis of AHF. Prospective, observational study included 726 AHF patients treated during six months period. Symptoms, comorbidities, physical findings, clinical presentation of AHF, APACHE II and SAPS II were recorded. RESULTS: Out of 726 pts there were 317 (43.6%) males and 409 (56.3%) females, who presented with dyspnea (85.5%), fatigue (61.1%), orthopnea (53.1%), and chest pain (24.9%), without significant difference in hospital outcome. There were statistically significant differences in comorbidities and clinical presentation between males and females, Table 1. Females had higher blood pressure (32.8:20.7%; $p<0.001$) and atrial fibrillation (AF) incidence (53:44.4%; $p=0.028$) on admission, were treated with digoxin more frequently (38.3:28.2%; $p=0.011$); presented with hypertensive AHF (26.7:19.7%; $p=0.046$), Fig.1, and with higher SAPS II score (28.5:26.6 points; $p<0.001$). Frequency of dilated cardiomyopathy (15.5:5.9%; $p<0.001$), lower ejection fraction (39.1:45.4%; $p=0.003$), dilatation of all four heart chambers (18.3:6.3%; $p=0.022$), and clinical presentation of AHF following acute coronary syndrome (ACS) (5.7:2.2%; $p=0.046$) were higher in males. Males also presented more frequently with right-sided pleural effusion (PE) (16.8:14.7; $p=0.002$), bilateral PE (19.0:14.0%; $p=0.019$), and hepatomegaly (36.9:16.0%; $p=0.002$. There were more cigarette smokers (27.1:11.5%; $p<0.001$) and COPD pts (32.0:21.2%; $p<0.001$) among males. CONCLUSION: Early identification and treatment of gender dependent comorbidities and clinical presentation of AHF could improve life quality of AHF pts and help to treat them more efficiently. Early identification and tenacious treatment of hypertension and AF in females, and ACS and COPD in males might improve outcomes of AHF pts.

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ABSTRACT FINAL ID: OS11-F;

TITLE: PE in Emergency: Improving Diagnostic Accuracy

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The venous thromboembolism pathogenesis (VTE) involves bleeding disorder and surgical risk; in recent years also medical diseases assumed increasing importance in determinism of VTE. The Wells score combined with D-dimer assay as a tool in decision-making for the implementation of contrast-enhanced CT is currently the gold standard in international guidelines however this does not cover all patients co-morbidity and risk factors. METHODS: In this retrospective study we examined all Pulmonary Embolism (PE) cases of last two years (2009/10), diagnosed in the emergency dpt. of two hospitals in Rome-Italy, assessing the role of the Wells score, D-dimer assay and risk factors of medical consensus on the definition of the risk of PE. RESULTS: In the study period there were 173 PEs diagnosed, with prevalence of females (52%) and average age 70 years. Presenting symptoms were: dyspnea (52%), tachycardia (47%), chest pain (22%), syncope (16%), suspected DVT (9%). Prevailing factors risk were: heart disease (19%), bedding and fractures (20%), DVT in place (18%), neoplasm (18%), previous VTE (15%), obesity (13%), respiratory failure (10%) sepsis (6%), diabetes (8%), autoimmune diseases (3%), chronic renal failure (3%), coagulopathy (1%). 37% of the sample had Wells score of PE likely (Wells ≥4), 45% had a Wells score of unlikely (Wells <4) for PE but a percentage of D-dimer >500 ng/ml. Te remaining 18% had both Wells score <4 and D-dimer assay <500 not suggestive of PE but their symptoms, clinical signs and risk factors have strongly suggested CT allowing diagnosis. We also evaluated a control group of false positive patients who underwent CT that yielded negative results having cancer as most common diagnosis, severe heart disease and respiratory failure.
CONCLUSION: The strict application of guidelines integrated with the evaluation of co-morbidity of patients allowed greater accuracy in diagnosing PE. Females were found to be prevalent contrasting international guidelines. The most frequent alternative diagnosis in patients with increased D-dimer assay is tumor followed by severe heart disease and respiratory failure.

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ABSTRACT FINAL ID: OS11-G;

TITLE: Treatment of Hypertensive Crisis in our Emergency Department

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The new criteria proposed in a review published in the journal "Emergency" of 2010, should be diagnosed as hypertensive crisis (HC): systolic blood pressure (SBP) ≥ 180 mmHg and / or diastolic blood pressure (DBP) ≥ to 120 mmHg, without affecting the target organs. The purpose of this study is to describe the therapeutic approach in patients with HC who come to the emergency department of our hospital. METHODS: Retrospective epidemiological study by reviewing medical records. In 2009, a total of 1106 attended the emergency department with a discharge diagnosis of HC, selecting 672 to meet the criteria referred in the definition. The study variables were age, sex, analysis done: SBP and DBP on arrival and at discharge and the rate of decline in blood pressure and the treatment used, final destination, revisit within 72 hours and if you had a cardiovascular event within one month. RESULTS: Of our 672 patients, 65.5% were women and 34.5% men. The mean age was 64.44 years. The mean SBP on arrival was 202 and DBP 100.9. 154.4 being the high SBP and DBP 81.7. 44%, the figures were reduced by more than SBP 25% and up to 29% for the DBP. 98.4% received treatment being the most used e.g., captopril 64.7%, 24.4% e.g., diazepam and e.g.,lorazepam 23.5%. Stated after new blood making a second drug by 31.7%, the most used drugs in this second step captopril 18%, furosemide 6.7% and 6.1% lorazepam. Needed a third step of 8.8% of patients, indicated recovery from a substance captopril in 3.6%, e.g.,furosemide at 2.5% and lorazepam at 1.8%. Were discharged 94.8% of patients remained under observation and logging 4.2% to 0.9%. Re-appointment within 72 hours for the same reason by 5.7%. Had a cardiovascular event within 1 month, four patients. CONCLUSION: Both captopril and lorazepam are used as drugs of choice in the three treatment sequences. Furosemide is reserved for the second and third step. About half of those seen in the case of SBP was reduced over the blood pressure levels. Nearly 95% of our patients are discharged from the emergency department and less than 1% require admission. The number of reconsultations was poor.

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ABSTRACT FINAL ID: OS12-A;

TITLE: Malignant Renal Tumor Presenting in the Form of Acute Coronary Syndrome and Genital Bleeding. Importance of Urgent Transthoracic echocardiography in the Differential Diagnosis of ACS at the Emergency Department

ABSTRACT BODY:

Abstract Body: CASE REPORT: A 77 year-old woman presented with acute symptoms of retrosternal chest pain, dyspnoea on exertion and palpitations. Past medical history: hypertension, type 2 diabetes and coronary artery disease. Percutaneous coronary angioplasty of the left anterior descending artery with drug eluting stent had been performed 10 months prior, for which she should have been on double antiplatelet therapy, however she omitted clopidogrel 2 month before, because of recurring, mild intensity vaginal bleeding. On examination she was in good clinical condition, with bibasilar rales and expiratory wheezing on auscultation, tachyarrhythmic heart sounds with no murmurs, and bilateral lower extremity edema. Abdominal examination revealed no tenderness or resistance. At the time of examination, no obvious genito-urinary or gastrointestinal bleeding was detectable. ECG showed atrial fibrillation and previously known LBBB. Lab results included normal cardiac biomarker levels and marked normochromic anaemia (Hgb: 82 g/l). According to our local protocol, a bedside transthoracic echocardiography was performed at the ED, which proved preserved left ventricular function without any new wall motion abnormalities or significant valvular disorder, but revealed a huge tubular mass in the right atrium, which seemed to be originating from the inferior vena cava (IVC) and protruding into right ventricle through the tricuspidal annulus. Further evaluation of the mass by abdominal CT scan showed a left sided renal tumour propagating to the right atrium through the IVC. To clarifiy the source of the vaginal bleeding, detailed gynaecological examination was completed, but no obvious aetiology was found, however, selective renal angiography revealed a dilated collateral vein from the neoplastic left kidney draining to the uterinal venous plexus, which was a reasonable cause for the recurring vaginal haemorrhage. Following cardiothroracic and urosurgical consultation and stabilisation of the patient, successful nephrectomy was performed.

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ABSTRACT FINAL ID: OS12-C;

TITLE: Asymptomatic Brugada Anomaly Unmasked by Fever

ABSTRACT BODY:

Abstract Body: CASE REPORT: A 27 years old healthy man came to the emergency department complaining of epigastric burning and fever. Two days before he was taking oral amoxicillin/clavulanic acid preparation for an upper respiratory infection. At time of presentation body temperature was 38° with heart rate of 112 bpm, blood pressure 110/80 mmHg and SpO2 of 98% on atmospheric air. No specific signs were found on physical examination and laboratory tests were compatible with an ongoing infection. Chest X-ray was non-diagnostic but the ECG, apart from sinus tachycardia, showed a typical Brugada type I pattern with ST elevation, a gradually descending ST segment and a negative T-wave from V1 to V3 (Figure 1 and 2). After specific interrogation family history resulted completely free of sudden death events for known relatives. No syncope was reported in the patient's personal history. Together with the cardiologist, only symptomatic therapy for the fever (acetaminophen) was administered, and the antibiotic already started. No indications for electrophysiological study or ICD implantation were given. A cardiologic follow-up was planned. After a short observation period the patient was discharged. At one month the infection was resolved and the cardiologist confirmed indication for a conservative approach. At 5 months from the diagnosis no adverse cardiac events have been reported. DISCUSSION: Brugada Syndrome is a hereditary illness that can cause sudden unexpected cardiac death in apparently healthy individuals. Controversy is still ongoing about the best management of these patients because data in support of a definitive recommendation are not available. Actually there is no published evidence that an implantable defibrillator is of sure benefit in asymptomatic individuals coming from asymptomatic families. Even the real predictive value of an electrophysiological study is still unclear. Given the possible complications of the procedures, after a good patient information a conservative approach seems to be reasonable. Fever can be the event that triggers an electrocardiographic diagnosis, however there is no evidence of an increased arrhythmic risk associated with the temperature peak.

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ABSTRACT FINAL ID: OS12-D;

TITLE: Role of Sonography in the Evaluation of PEA Patients

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Cardiac arrest is a condition frequently encountered by physicians in the hospital setting including the emergency department, intensive care unit and medical/surgical wards. We aimed to evaluate the effects of sonography on final outcome and mortality rates of pulseless electrical activity patients. METHODS: 100 patients who referred to emergency department of Rasul-e-Akram hospital were chosen and divided into two groups - one were evaluated by sonography during resuscitation and the other group underwent CPR only. RESULTS: 100 patients with mean age 58.5 years including 56 males and 44 females were assessed for in the study. There were no significant difference among them for mortality and final outcome. We found a significant reduction in the diagnostic time and number of real diagnosis in the sonographic group. Those who had cardiac motion in their monitoring had an increase chance to survive finally. CONCLUSION: Sonography could act as a rapid and safe device in ED. We rather to have a comparative cost benefit study to complete data about sonography. According to the results, no case of ROSC was seen among patients without cardiac motion, so prolonged CPR is not recommended in this group but in patients with cardiac motion it can be helpful.

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ABSTRACT FINAL ID: OS12-E;

TITLE: Differentiating between COPD and HF Presentations in the Emergency Department by Quantitative Lung Sound Measurements

ABSTRACT BODY:

Abstract Body: OBJECTIVES: The presentation of acute dyspnea to the emergency department (ED) sometimes results in a diagnostic dilemma of differentiating between dyspnea originating from obstructive airway disease or from cardiac disease, which is important for clinical outcome. The objective of this study is to validate the use of quantitative lung sound measurements to aid in differentiating between chronic obstructive pulmonary disease (COPD) and heart failure (HF) presentations. METHODS: Data from 80 patients (54% male; age range 47-96 years), who presented to the ED with acute dyspnea underwent bedside lung sound recordings with the Vibration Response Imaging (VRI) device (Deep Breeze, Or-Akiva, Israel). The device algorithm evaluated the following quantitative data: distribution of lung sounds (right versus left lung and upper versus lower lung regions); presence of crackles and wheezes and lung sound development in the dynamic image. The diagnosis reached using the VRI data analysis algorithm was compared to final physician discharge diagnosis (ED diagnosis in discharged patients, inpatient diagnosis in admitted patients), based on clinical findings, chest x-ray, medical history, and EKG. RESULTS: By combining the quantitative data parameters, overall VRI accuracy was 85% for correctly differentiating patients with a final ED/inpatient diagnosis of COPD or HF: 86% (49/57) and 83% (19/23), respectively. CONCLUSION: The rapid, non-invasive and radiation-free measurement of quantitative lung sounds by VRI appears to be a sensitive test that is superior to published data for clinical judgment (47-73%) and additionally helpful to CXR and other combined measures (41.7-85.4%).

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ABSTRACT FINAL ID: OS13-A;

TITLE: New Synthetic Cannabinoids Intoxications in Italy: Clinical Identification and Analytical Confirmation of Cases

ABSTRACT BODY:

Abstract Body: OBJECTIVE: At the end of 2008 the Department for Antidrug Policies (DPA) in Italy activated the National Early Warning System for Drugs (NEWS), with the Pavia Poison Centre (PPC) identified as the Coordinating Centre for clinico-toxicological aspects. METHODS: We report cases in which synthetic cannabinoids use was related to specific analytical data and contribute to the endorsement of regulatory actions. RESULTS of the case series: During 2008-2010, PPC identified 17 cases of synthetic cannabinoids poisoning, age range 14-55 years. The product names were identified in 15 cases: Spice (1 case) , N-Joy (6), Forest Green (3) and Jungle Mystic Incense (5); in the other 2 cases the products were defined as “JWH” and “tisane”. Clinical manifestations were: tachycardia (13), agitation/anxiety (12), confusion (8), mydriasis (7), hallucinations (5), paresthesias (5), palpitations (4), drowsiness (3), xerostomia (3), coma (2), seizures (2), syncope (2), vertigo (2), tremor (2), hypertonia (1), chest tightness (1), clonus (1), choreoathetosis (1), aphasia (1), nystagmus (1), diplopia (1), hypotension (1), hypertension (1), dyspnoea (1), vomiting (1). In 11/17 synthetic cannabinoids were identified in the blood: JWH-122 (5 cases), JWH-122 and JWH-250 (3), JWH-018 (2). Patients received symptomatic treatment and benzodiazepines for neuroexcitatory effects and were discharged asymptomatic within 24 hours from exposure; no sequelae were observed. CONCLUSION: The early PPC identification of “sentinel” cases contributed to identifying health risks related to use of cannabis substitutes. The laboratory confirmation of products and patients (performed in a few hours) permitted us to ascertain the relationship between substances and clinical effects. This is crucial to permit regulatory actions to be finalized for prevention/control. These cases permitted to the DPA and Ministry of Health to activate procedures to include these substances in the Italian list of drugs of abuse and illicit psychotropic substances. Acknowledgements: Study carried out with the support of the Italian Department for Antidrug Policies - Presidency of the Council of Ministers.

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ABSTRACT FINAL ID: OS13-B;

TITLE: Effects of Mad Honey (Grayanotoxin) on Acute and Chronic Pain Behavior

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The aim of this experimental study was to investigate the effects of mad honey (grayanotoxin, GTX), used in complimentary medicine for a variety of purposes including pain treatment, on acute and chronic (diabetic neuropathic) pain. METHODS: Hind paw withdrawal pain threshold was measured with a plantar analgesia meter in a mouse model using normoglycemic animals and diabetes-induced animals for chronic neuropathic pain. Time-dependent effects of different concentrations of intraperitoneally administered GTX were determined in both acute and chronic pain. RESULTS: In the acute pain model, the latency values for painful behavior increased significantly and time-dependently following administration of 0.1 mg/kg GTX (control: 2.1±0.2, 0.1 mg/kg GTX: 3.5±0.7 (10th min), 3.9±0.5 (20th min), and 3.2±0.7 (30th min) $P < 0.01$). The effect lasted for 100 min. GTX in three different dosages produced no initial change in diabetic neuropathic mice latency, while a statistically significant decrease was determined at the 60th and 100th mins ($p<0.05$). In diabetic neuropathic mice the mean latencies were reduced from the pre-GTX treatment value of 3.2±0.6 s to 3.0±0.9 s at 10 min, 3.2±0.6 s at 20 min, 3.4±0.6 s at 30 min, 2.6±0.5 s at 60 min and 2.4±0.6 s at 100 min after administration of 0.1 mg/kg ($p<0.05$). Administration of 0.2 mg/kg GTX was reduced the mean latency values from 3.2±0.4 s to 2.6±0.8 s at 60 min and 2.4±0.5 s at 100 min ($p<0.05$). CONCLUSION: The results from this experimental study indicate that GTX has significant analgesic activity, and especially significant analgesic effects in neuropathic pain. This is in agreement with the wide use of grayanotoxin containing mad honey as alternative medicinal therapy. Further studies involving long-term applications are needed for a more decisive conclusion regarding the usefulness of GTX as an analgesic, especially in the treatment of painful neuropathy.

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ABSTRACT FINAL ID: OS13-C;

TITLE: Is Grayanotoxin Directly Responsible for Mad Honey Poisoning-Associated Seizures?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Toxins (grayanotoxin) taken up by bees from rhododendron flowers directly lead to poisoning by combining with honey. Grayanotoxins exhibit toxic effects by binding to sodium channels in cell membranes. Several cases of seizure resulting from grayanotoxin poisoning have been reported in the literature. The aim of this study was to investigate the effects of grayanotoxin on epileptiform activity experimentally induced in rats. METHODS: Epileptiform activity was induced with intracortical injection of penicillin G potassium. Forty-two male Sprague Dawley rats were equally divided into one of seven groups. Thirty minutes after induction of epileptiform activity, five groups were administered 0.5, 1, 2, 4 or 8 µg/2 µl grayanotoxin-III by the intracerebroventricular (i.c.v.) route. Electrocorticogram (EcoG) records were taken pre- and post-injection. Epileptiform activity spike frequency and amplitude were converted into numerical data using an electrophysiological data acquisition software program following the experiment. RESULTS: Forty-five minutes after the administration of grayanotoxin-III, mean epileptiform activity spike frequency and amplitude values in the 0.5, 1, 2, 4, and 8 µg dosage groups were 19.8±2 spike/min - 1199±221 µV; 21.6±1 spike/min - 996±181 µV; 20.1±4 spike/min - 780±265 µV; 12.5±3 spike/min - 718±282 µV and 8±2 spike/min -103±36 µV, respectively. CONCLUSION: Five minutes post-injection, grayanotoxin significantly reduced epileptiform activity, especially at higher doses. This acute effect subsequently declined, but a dose-dependent decrease was observed through to the end of the experiment. This suggests that the first observed effect of grayanotoxin on spikes probably takes place through the action of GABA, while its secondary effect comes about by blocking voltage-gated sodium channel inactivation. In conclusion, grayanotoxin's suppression of epileptiform activity in this experimental study indicates that grayanotoxin is not directly responsible for mad honey poisoning-associated seizures observed in a clinical context.

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ABSTRACT FINAL ID: OS13-D;

TITLE: The Use of Antivenin for Copperhead Snake Bite: Does Location of the Bite Matter?

ABSTRACT BODY:

Abstract Body: OBJECTIVES: In 2001, Crotalidae Polyvalent Immune Fab (ovine) was approved for the treatment of patients with North American Crotalid envenomation. However, the use of antivenin for Agkistrodon contortrix (Copperhead) envenomation remains controversial. These snake bites usually cause only mild to moderate local tissue effects and rarely causes significant systemic effects. There is some evidence that antivenin may be helpful for these patients. Our objective was to determine if the physician decision to use antivenin is affected by whether the copperhead snake bites the upper or lower extremity. METHODS: This was a retrospective case-control study of snake bite patients who received antivenin and those who did not. We reviewed all Agkistrodon contortrix bites reported to the Texas Poison Center Network (TPCN) from 2005-2009. Inclusion criteria included all human exposures where copperhead was listed as the substance and bite/sting as the route of exposure. The cases were reviewed for gender, age, bite location on body, type of snake, and whether ovine Fab antivenin was used. RESULTS: There were 389 patients with copperhead snake bites reported to the TPCN during the 5 year study period. Most were male (65.8%). Over one-fourth were under 20 years of age and only 2.6% were over 70 years. Only 222 (57.1%) received ovine FAB antivenin. Of the 227 (58.3%) patients who were bitten on an upper extremity, 144 (64.8%) received antivenin. Of the 168 patients who were bitten on a lower extremity, 78 (48.1%) received antivenin (p=.003). There were no statistically significant differences for those who received antivenin for male or female (55.9% and 59.4%, p=.504) or age range (p=.62). CONCLUSION: This is the largest analysis of bite location of copperhead snake bite patients. The use of antivenin differs according to bite location but not for gender or age of the patient. It is not clear why physicians are more likely to use antivenin for upper extremity bites (64.8%) compared to lower extremity bites (48.1%). Limitations of this study include the accuracy of self-reported data to the poison centers.

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ABSTRACT FINAL ID: OS13-E;

TITLE: Heart-Type Fatty Acid-Binding Protein is a Useful Marker in the Evaluation of Patients with Carbon Monoxide Poisoning

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The early evaluation of patients with carbon monoxide (CO) poisoning is critical for appropriate treatment in the Emergency Department (ED). The aim of this study was to investigate the serum heart-type fatty acid binding protein (H-FABP) levels in CO poisoned patients and the possible role of H-FABP in clinical follow-up of this poisoning. METHODS: Forty patients with acute CO poisoning admitted to the ED were involved in this study. In addition, 15 healthy adults were included in the study as control group. Serum H-FABP levels of patients were studied on admission, and at the 6th, 12th and 18th hours. Patients were divided into three groups according to clinical severity as mild, moderate and severe. They were also divided into two groups as treated with hyperbaric oxygen (HBO) and treated with normobaric oxygen (NBO). RESULTS: Serum H-FABP levels of the patients were higher than that of control group. There was a negative correlation between H-FABP levels and Glasgow Coma Scale score on admission. Levels of H-FABP were significantly higher in patients in the severe group as compared to the others. H-FABP levels in patients treated with HBO were significantly higher than in patients treated with NBO ($p<0.05$). The cut-off value of serum H-FABP as an indication for HBO treatment was determined to be ≥1.5 ng/ml. For this cut-off value, sensitivity was 85.7%, specificity was 69.7%, positive predictive value was 21.4% and negative predictive value was 91.7%. As a result of serial H-FABP measurements of patients, it was determined that H-FABP level reached its peak level at the 6th hour, and reduced over time but still stayed higher than the control group at 18th hour. CONCLUSION: H-FABP is a promising novel biomarker in the evaluation of clinical severity and in the management of patients with CO poisoning.

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ABSTRACT FINAL ID: OS13-F;

TITLE: Driving Under the Influence: More than Meets the Eye?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: A considerable amount of all traffic accidents can be attributed to driving under the influence of alcohol, illicit drugs and/or registered drugs. We wanted to analyze the prevalence of ethanol and other psychoactive substances in accidents in our population. METHODS: Patients from traffic accidents admitted to the Stuivenberg hospital, Antwerp, Belgium, were prospectively screened by blood and urine tests for the presence of ethanol, legal and illicit drugs. Ethical committee approval was obtained. RESULTS: 60 patients were included. 8 (13%) patients refused to blood and/or urine testing. 52 patients underwent blood and urine testing: 38 (73%) were negative and 14 (27%) were positive. 9 (17%) of the positive patients used one substance, whereas 5 (10%) tested positive for multiple substances. The following substances (22) were found, with their relative percentage: cannabis 41%, ethanol 32%, cocaine 9%, benzodiazepines 9%, amphetamines 4,5% and opiates 4,5%. Of the 9 hospitalized patients there were 6 (66%) patients under the influence (3 (33%) poly intoxicated, 3 (33%) mono intoxicated); 1 refused and 2 (22%) were negative. Of the drivers, there were 5 (10%) poly-intoxicated, 7 (14%) mono-intoxicated, 6 (12%) refused and 31 (63%) were negative. In the passengers group there were 0 poly-intoxicated, 2 (18%) mono-intoxicated, 2 (18%) refused and 7 (64%) were negative. CONCLUSION: We found a high prevalence of substance abuse (27%) among patients from traffic accidents. If we consider refusals to be positive, the prevalence rises to 36,6%. In the hospitalized group the prevalence is 66% (or 77,7% with refusals). The ethanol prevalence of 13% correlates to other studies. Remarkably, all patients have ethanol levels above the local legal limit (50 mg/dl). The cannabis prevalence of 17% is astonishingly high. Cannabis abuse seems to be more important than ethanol abuse in our study. The total prevalence of drugs was 29%, which is in line with similar studies. In conclusion, we found a high prevalence of alcohol and drug use in patients from traffic accidents admitted to our ED. Cannabis and ethanol are the most prevalent substances used.

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ABSTRACT FINAL ID: OS13-G;

TITLE: Usefulness of Point-of-Care Rapid Urine Testing for Ruling Out Paracetamol (Acetaminophen) Ingestion in Patients with Suspected Acute Drug Overdose: A Cohort Study

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Paracetamol (APAP) is the most common drug of intentional overdose in the United Kingdom and the most common cause of acute liver failure. Rapid detection or rule out drugs that have the potential to cause a lethal damage is a challenge for emergency physicians. Triage® TOX Drug Screen (TTDS) is an immunological test by fluorescence which allows a rapid qualitative urinary determination (time results = 15 minutes) of 11 drugs that include APAP (detection cut-off ≥ 5 mg/L), which is already present in urine thirty minutes after ingestion. Aims: 1. To analyze the interest of TTDS in urine APAP detection and its correlation with the blood APAP concentration (blood APAPc); 2. To check if a negative urine test for APAP permits to avoid the measurement of APAP in blood. METHODS: A cohort study was performed from June 2009 to April 2011. Patients ≥ 18 years admitted for suspicion of drug overdose were studied. All included patients had a blood APAPc measurement (colorimetric method; negative result if < 10 mg/L) and a urine toxicology screening. RESULTS: A total of 541 patients (336 women and 205 men; median age 40.2 years) were enrolled. No patient had a drug ingestion-admission TI lower than 30 minutes. All patients (n=70) with a positive blood APAPc value (≥ 10 mg/L) had also a positive urinary screen for APAP (sensitivity of screening 100%). On the other hand, the specificity of screening was of 85%. All patients (n=400) with a negative urine screen for APAP (< 5 mg/L) had also a negative blood APAPc < 10 mg/L (NPV: negative predictive value 100%; CI 98.5-100). The positive predictive value was of 49.6%. CONCLUSION: This is the first cohort study to validate the hypothesis that a negative qualitative rapid urine screen for APAP is highly predictive of a negative blood APAPc (NPV 100%), and definitely rule out APAP ingestion in ED patients with suspected acute drug overdose. This makes it possible to avoid the blood APAPc measurement, and is valid for any suspected APAP poisoning with a drug ingestion-admission TI of less than 20 hours.

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ABSTRACT FINAL ID: OS13-H;

TITLE: The Importance of Heart-Type Fatty Acid Binding Protein in Determining the Severity of Carbon Monoxide Poisoning

ABSTRACT BODY:

Abstract Body: OBJECTIVE: In this study, we aimed to investigate the importance of the use of heart-type fatty acid binding protein (H-FABP) in evaluating the myocardial damage in patients admitted to the emergency department with moderate to severe carbon monoxide (CO) poisoning. METHODS: All patients admitted to the emergency department with severe acute CO intoxication were enrolled the study. The H-FABP and cardiac biomarker levels were assessed at the 0, 6th and 24th hours. The patients were divided into groups as those with normal echocardiography findings and with wall motion abnormalities. The differences between the groups for these parameters were compared. RESULTS: The mean age of 80 patients was 32.3±12.9 years old. 42 of them were male. On admission, 29 (36.3%) had elevated serum troponin I levels and 56 (70.0%) had elevated serum H-FABP levels. At the 6th hour, 4 (5.0%) of 80 patients had higher serum H-FABP levels and 23 (28.8%) of them had higher serum Troponin I levels than 0 hour. The patients with wall motion abnormality had significantly higher serum H-FABP levels compared to the patients with normal echocardiography findings at the 6th and 24th hours ($p=0.001$ and 0.009). While the serum COHb and H-FABP levels tended to decrease continuously in time ($p<0.001$), the serum troponin I levels increased at the 6th hour and then decreased at the 24th hour ($p=0.017$). CONCLUSION: The serum H-FABP levels are useful in identifying the myocardial damage in patients admitted to the emergency department with moderate to severe carbon monoxide poisoning at an early phase.

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ABSTRACT FINAL ID: OS14-A;

TITLE: The Italian National Early Warning System for Drugs of Abuse: The Toxicovigilance on New Psychoactive Substances

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Clinical effects of new drugs of abuse (e.g. synthetic cannabinoids, cathinones, smart-drugs) are not well defined and generally poorly known for emergency physicians. Moreover, number and severity of patients admitted to emergency departments for new drugs abuse is unknown in Italy. In this field, the National Early Warning System (NEWS) was created to identify new sentinel cases, to collect and evaluate the few available clinical information, to diffuse clinical signals to the health system, and to promote preventive/regulatory actions. The activities of NEWS in 2009-2010 are analyzed. METHODS: Activities of NEWS concerning (i) improvement of the number of Collaborative Centres included in the system (ii) response capability of the Coordinating Centres, (iii) rapidity of signal release, and (iv) percentage of the delivered signals distinguishing among 3 established levels (information/attention/alert) were evaluated. RESULTS: The number of Collaborative Centres increased from 25 at the beginning of 2009 to 50 in October 2010. The Coordinating Centres were able to release the critical response in 100% of cases, with a mean reaction-time that decreased from 34 to 22 hours during the last year. The delivered clinical/toxicological signals were 42 in 2009-2010, comprised of 33 (78,6%) information, 4 (9,5%) attentions and 5 (11,9%) alerts. The signals were delivered by the NEWS and addressed to all the national EDs and Collaborative Centres. CONCLUSIONS: In accordance with the EU Council Decision 2005/387/JHA, the Department for Antidrug Policies - Presidency of the Council of Ministers has activated in Italy the NEWS for drugs, whose interface with European and international institutions is the Reitox Italian National Focal Point (within the Department). The first evaluation of the performance of the system shows an increase of the number of the Collaborative Centres, of the response capability, of the reaction-time of the system, and of the knowledge of substances for abuse in the operative services of national health system (e.g. EDs and PCC).

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ABSTRACT FINAL ID: OS14-B;

TITLE: Belgian Cost-Utility Analysis of Hydroxocobalamin (Cyanokit®) in Known or Suspected Cyanide Poisoning

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Assess the cost-utility of hydroxocobalamin (Cyanokit®) versus best supportive care (BSC) in known or suspected cyanide poisoning based on clinical trial results regarding efficacy and on clinical assumptions regarding cost and quality of life in Belgium. METHODS: No published burden-of-illness or cost-effectiveness studies on cyanide poisoning exist. A health-economic model has therefore been developed in order to determine the cost-utility of Cyanokit® in suspected (smoke inhalation) and known (intentional/accidental exposure) cyanide poisoning. Probabilities for neurological sequelae and mortality were applied based on phase III trials (both hydroxocobalamin arms), literature data (BSC arm in suspected cyanide poisoning) and the hydroxocobalamin preclinical trial (BSC arm in known cyanide poisoning). Since no cost and utility data for cyanide poisoning exist, the costs and utilities of comparable diseases (stroke and Alzheimer's considered representative for neurological sequelae due to cyanide poisoning), derived from Belgian publicly available sources and literature were applied. Direct medical costs from the public healthcare payer's perspective were used. The time horizon was 1 year. Sensitivity analyses were performed to assess uncertainty in the results. RESULTS: Base-case analyses versus BSC revealed highly cost-effective results (ICER = 9921 €/QALY) in suspected cyanide poisoning and even dominance (more effective and less costly than BSC) in known cyanide poisoning. For Belgium it was determined that 17 lives were saved and 1 sequela prevented per year. The one-way sensitivity analyses varying efficacy, costs, utilities and time horizon, demonstrated the robustness of the results. Results were most sensitive to the probability of death and neurological sequelae, but remained within acceptable limits of cost-effectiveness. Furthermore it was demonstrated that with a longer time frame (5 or 10 years) better cost-effectiveness results were obtained. CONCLUSIONS: Hydroxocobalamin is projected to be highly cost-effective to dominant (life- and cost-saving) versus BSC in cyanide poisoning.

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ABSTRACT FINAL ID: OS14-C;

TITLE: Hallucinogenic Plants of Abuse in an ED of Romania

ABSTRACT BODY:

Abstract Body: OBJECTIVE: In present-day society, there is greater access to ethnobotanical drugs and a growing trend among the younger generations to experiment with these products. The study was performed to analyze the profile and evolution for the patients with ethnobotanic plants poisoning in ED. Also we analyzed some of the most consumed products, which are packaged and sold as “bath salts” or “fertilizer for plants”. METHODS: This study included all patients who had ingested or inhaled “ethnobotanics” and visited the ED of Sf. Spiridon Hospital Iasi, Romania, from the 1st of June 2009 to the 31st of December 2010. The patients were analyzed with regards to sex, age, residence, consumption method, clinical symptoms, hemodynamic parameters, ECG abnormalities and mortality. The “ethnobotanics” products were analyzed by thin layer chromatography. RESULTS: Data from 37 hallucinogenic-plants-poisoned patients were included in the final analyses. Statistically higher poisoning were associated with male sex (78.94%), urban residence (84.21%), teenagers (18-20 years) and Valentine’s Days (21%). Preferred method of use was smoking (75%), followed by intranasal route (21%). Dominant clinical symptoms were: psycho-motor agitation (94.1%), palpitations (77.4%), headache (40%), tachypnea (38.0%). On ECG we detected a high frequency of(90.27%) arrhythmias: supraventricular tachycardia, PVC and atrial fibrillation. Examination of the ethnobotanical products identified MDPBP (3',4'-methylenedioxy-α-pyrrolidinobutiophenone) and MDPV (methylenedioxypyrovalerone), banned substances in our country and in many other countries. All the patients received treatment- i.v. fluids, oxygen, benzodiazepines, blood glucose correction. The time spent in the ED was between 2 - 16 h, the admission rate was 6.2%. The mortality rate was 0. All of them were orientated to psychological counseling. CONCLUSIONS: In Romania this is a new pathology. The symptoms and the treatment are nonspecific and depends largely on how quickly it’s diagnosed correctly by anamnesis. Ethnobotanic plants abuse is a serious problem in Romania and a suitable prevention program should be developed.

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ABSTRACT FINAL ID: OS14-D;

TITLE: Should we Bring to the ED the Empty Drug Boxes with the Intoxicated Patient?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The difficulty in taking care of patients attempting suicide by ingesting several drugs is usually related to identifying the nature of the products involved and the amount swallowed. The aim of our study is to assess whether bringing the empty drug boxes and blisters to the Emergency Department (ED) is the most accurate way to answer these questions, and thus improves the quality of care of the intoxicated patient and decreases adverse outcomes. METHODS: We conducted a prospective study of all intoxicated patients admitted to our ED from January 1st, 2007 to December 31st, 2009. Data collection concerning the drug involved and the Supposed Ingested Dose (SID) were from: Anamnesis, family or other relative or witnesses, medical prescriptions (of the patient or one of the relatives), patient's letter of intention, empty drug boxes and blisters and/or toxic analysis. RESULTS: 2000 patients were included throughout the study time; mean age 31yo (16-76), sex ratio 3F/1M (table 1). CONCLUSION: Our study shows that the best way to identify the drug involved and the amount ingested by the suicidal patient remains in finding the boxes and blisters. Anamnesis, from the patient and/or the relatives is yet imprecise, and may probably be related to the impulsiveness of the act and/or the amnesic effect of these drugs. We recommend that all the emergency actors, Dispatch Center, Emergency Medical Services, Mobile Intensive Care Units etc. should be aware of that, and look for the boxes at the scene. The fear is that, the patient will hide them or use pillboxes, which will be in this case, an increased severity risk factor.

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ABSTRACT FINAL ID: OS14-E;

TITLE: Portal Vein Air Embolism after Hydrogen Peroxide Ingestion: An Unexpected Complication or an Underdiagnosed Finding?

ABSTRACT BODY:

Abstract Body: INTRODUCTION: H_2O_2 can cause portal embolism due to the passage of O_2 bubbles into the portal vasculature. This is probably due to a sudden expansion of gas inside the gastrointestinal tube and a possible entry into submucosal tissue through ulcerative lesions. HBO therapy can be considered the definitive treatment of this lesion. Case Report – A 35-years old woman with negative past medical history referred to the ED of Alessandria (Italy) 90 min after the accidental ingestion of a 30% solution of H_2O_2. She complained of abdominal pain, nausea and vomiting; vital signs were normal as was her mental status. She was submitted to laboratory tests, which did not show any particular abnormality. She had a gastroesophageal endoscopy, which showed ulcerative mucosal lesions. Due to the persistence of abdominal pain, it was decided to perform an abdominal CT scan that showed air in the portal system (Fig. 1a). Our Hyperbaric Chamber in Novara was alerted and the patient received an emergency treatment at 11 hours after ingestion. She received HBO therapy at 2.8 ATA for 2.30 minutes. She had an immediate resolution of symptoms and was discharged two days after a control CT revealed a complete resolution (Fig. 1b) with no occurrence of any other complication. DISCUSSION: The contact between H_2O_2 and the mucosa provokes its immediate dissociation in O_2 and water. Even a simple sip is able to produce even 3.4 L of oxygen gas1 that can pass through the mucosa (especially if ulcerated) and produce a gas embolism than can result in portal hypertension, bowel edema and abdominal pain. HBO may act by reducing the volume of gas emboli and increasing solubility of oxygen into the tissues and blood.Further reports and studies can make it clear if portal embolism is an unexpected complication or a more common consequence that is usually underestimated in its potential risks.

References

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ABSTRACT FINAL ID: OS14-F;

TITLE: Acetaminophen Overdose in a Premature Infant with Hepatic Disease: Nomogram, Don't Fail Me Now!

ABSTRACT BODY:

Abstract Body: INTRODUCTION: It is unknown if premature infants warrant a different threshold for treatment of acetaminophen (APAP) overdose. Although multiple reports exist of patients being treated at APAP levels below the Rumack-Matthew Nomogram, there is no data to guide this practice. We report an APAP overdose in a 7 month old NICU patient with hepatic disease in which NAC was not given and no significant hepatotoxicity occurred. CASE: A 7mo infant with prematurity, necrotizing enterocolitis, short-gut syndrome, and TPN cholestasis (pre-exposure AST 101 IU/L, ALT 65 IU/L) was given 100mg/kg of oral APAP, followed 30 minutes later by emesis. The error was discovered 3 hours later, at which time the Poison Control Center was contacted and recommended obtaining a 4-hour APAP and hepatic transaminase (AST/ALT) levels. A 4-hour APAP level was 48 with AST of 135 and ALT of 139. No NAC treatment was recommended; repeat labs 4 hours later: APAP 15, AST 181 and ALT 146. Follow-up values at 24 hours post-exposure: APAP 0, AST 117, ALT 144, and at 48 hours, AST 108, ALT 106. DISCUSSION: Although heightened concern with the premature infant seems reasonable, there is no data to advise lower treatment thresholds in APAP overdose. In fact, in older healthy children some authors have advocated a higher treatment threshold due to presumed increased detoxifying capacity. However, multiple reports exist in which premature infants were treated at levels below the nomogram. Although this patient had significant risk factors for APAP toxicity (prematurity, liver disease), NAC therapy was not advised due to a 4-hour level <150mg/dL, overdose of <150mg/kg, and concerns regarding risks and administration of NAC in this patient. In conclusion, in this case, despite numerous risk factors, an approach consistent with general NAC treatment guidelines was suitable and not associated with significant hepatic injury. This may be generalizable to premature infants as a whole. Further study is needed to evaluate the need for NAC therapy in premature infants with sub-nomogram APAP overdoses.

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ABSTRACT FINAL ID: OS14-G;

TITLE: Spice Drugs: A Case Series and Review

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Synthetic cannabinoid receptor agonists are becoming increasingly popular with adolescents as an abused substance. Chronic use of these drugs can lead to addiction syndrom and withdrawal symptoms similar to cannabis abuse. Due to their potential health risk, several countries have banned these substances. Our objective is to report the clinical presentation and legislation status of synthetic cannabinoids in “Spice” products and alerts the healthcare community about the identification and risk assessment problems of these compounds. METHODS: We retrospectively reviewed cases presenting to our emergency department during a 3-month period with reporting chief complaints of spice drug use prior to arrival. RESULTS: Six cases presented to our emergency department after using Spice Drugs. Two patients were admitted after reporting seizures. All but one presented with tachycardia. Two patients had hallucinations. The average length of ED observation was 2.8 hours. No patient with seizures had recurrent episodes. CONCLUSION: Spice drugs can cause potentially serious healthcare conditions that necessitate ED evaluation. Most cases can be discharged from the ED after a period of observation.

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ABSTRACT FINAL ID: OS15-A;

TITLE: Deep Venous Thrombosis in Emergency Departments: Prospective Evaluation of Doppler Ultrasound Performed by the Emergency Physician

ABSTRACT BODY:

Abstract Body: OBJECTIVES: 1) To evaluate the feasibility of Doppler ultrasound scanning (US) in three sites (common femoral, superficial femoral and popliteal) performed by the emergency physician to confirm the positive diagnosis of deep venous thrombosis (DVT), 2) To determine the necessary duration of training to achieve the required skill. METHODS: Prospective study carried out over 4 months (Sept to Dec 2010) involving patients with suspected DVT on the basis of suggestive clinical features (Wells score) and/or laboratory findings (D-Dimer >500 µg/l). Patients included had a double-blind triple ultrasound examination of the lower limbs. The first Doppler US was carried out in three sites by an emergency physician who had received training in venous Doppler US during 6 months in a specialized department (operator A). The second examination was performed in three sites by another emergency physician who had undergone a 12-hour training course prior to the study (Operator B). A reference Doppler US examination was done by an angiologist. Data collection was carried out independently by another member of the team. A random number was attributed to each operator. Agreement between the three operators on the presence or not of a proximal DVT (independently of the site) was evaluated by kappa test. RESULTS: The study involved 14 patients aged 60 +/- 16 years on average. Venous thrombosis in the lower limbs was diagnosed in 64.3% of cases. The similarity between findings obtained by operator A and the angiologist was kappa A=0.83% (95% IC 0.53-1) with an agreement =0.92 (95% IC 0.64 – 0.99). As for the operator B, Kappa B=1 with an agreement = 1. The similarity between the results obtained by the two operators A and B was Kappa C=0.85 (95% IC 0.6 – 1) with an agreement =0.92 (95% IC 0.64 – 0.99). CONCLUSION: Both operators obtained very similar results in agreement with those reached by the angiologist. A short-term training course in venous Doppler US examination seems enough to permit an emergency physician to be able to diagnose a suspected proximal DVT.

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ABSTRACT FINAL ID: OS15-B;

TITLE: Diagnosis of Deep Venous Thrombosis of Lower Extremities: Accuracy of B-mode Compression Technique

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Deep vein thrombosis (DVT) is prevalent in the emergency room patients. Nearly 60% of them may lead to pulmonary embolism. A complete color - flow duplex ultrasound (CFDU), performed by the radiologists, is the most common diagnostic method used to detect DVT. A limited B-mode compression technique (BMCT) can also be useful for the emergency specialists visiting suspicious cases. The purpose of this study was to compare the sensitivity, specificity and accuracy of a BMCT done by emergency medicine residents with that of a CFDU in diagnosing proximal DVT of lower extremities. METHODS: This prospective study was conducted on 74 patients (41 men and 33 women) presenting with painful and swollen lower limbs in the Emergency Room of Imam Khomeini Hospital. First, the affected lower extremity was examined by a BMCT carried out by one of the two emergency medicine residents. Then, the CFDU was performed by a radiologist blinded to the results of the BMCT. The sensitivity, specificity and accuracy of the BMCT were compared to that of the CFDU as a gold standard. RESULTS: The mean age of the patients was 55.16 ± 17.4. Positive results were reported in 35 patients (47.3%) using the two tests. Compared with CFDU, BMCT had a sensitivity, specificity, accuracy, positive and negative predictive values of 100%. CONCLUSION: These findings suggest that BMCT performed by the emergency medicine specialists to diagnose proximal DVT of lower extremities is not only an acceptable method but also less time consuming when compared with CFDU.

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ABSTRACT FINAL ID: OS15-C;

TITLE: Bedside Emergency Physician Versus Radiology Department-Performed Pelvic Ultrasound and Effect on Patient Length of Stay

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Does emergency physician performed pelvic ultrasound (EPU) decrease length of stay when compared to radiology performed pelvic ultrasound (RUS)? METHODS: Nonconsecutive patients at an academic emergency department (ED) requiring pelvic ultrasound as part of their workup were enrolled between the hours of 08:00 and 23:59. Research associates tracked triage time, ultrasound study time, EPU vs RUS, type of pelvic ultrasound (transabdominal versus transvaginal), disposition time, and discharge diagnosis. RESULTS: We enrolled 66 patients. Of these, 20 patients had EPU only, 33 had RUS, and 13 patients had pelvic ultrasounds done in both departments. The mean length of stay (LOS) for patients with EPU only was 253 min (95% CI 187-342), whereas those receiving RUS only had a mean LOS of 448 min (95% CI 35-132). Those receiving ultrasounds in both departments during their stay had similar LOS to patients getting RUS only. An ANOVA analysis with these three groups showed significant results with a $p < 0.00005$. CONCLUSION: Based on preliminary results in this ongoing study, there is a significant decrease in the length of stay for ED patients requiring pelvic ultrasounds as part of their workups when EPU is performed as opposed to RUS. There are multiple variables that contribute to this decreased length of stay. In EPU, there is no transport time involved, no lag in physician study interpretation. It may be that certain diagnoses requiring longer workups are being sent to the Radiology Department for more thorough pelvic ultrasounds, but as a result of the complicated diagnoses would have a longer LOS even if EPU were performed. Another possibility is that during times when the ED is busy when a patient's LOS is going to be lengthened regardless of workup required, EPs are not willing to take the time out to do their own ultrasounds and are sending these patients for RUS.

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ABSTRACT FINAL ID: OS15-D;

TITLE: CAT (Critical Appraised Topic): Ultrasound Versus Radiography in Identifying Wrist fractures in Children.

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Fractures of the wrist are frequently seen in children. Traditionally a 2 way wrist x ray is performed and in most cases treated with cast immobilization and analgesics. Although radiation effects of radiographs is minimal, any reduction of unnecessary radiation should be encouraged since the cumulative effect over a life time can become a problem. The use of ultrasound seems a good alternative to detect fractures of the wrist because it is non invasive and there are no radiation effects. It is also time and money saving, as there is no need to go to another department for radiography. A disadvantages is that it can not be used once cast material is applied. Our question, “Is there a difference in identification of a fracture of the wrist between the use of ultrasound and radiography in children?” METHODS: Ppopulation: Children with an injury of the wrist; Imaging: Ultrasound, Comparison: Radiography; Outcome: Identifying fractures. Search strategy and results: Mesh terms and regular terms where used. The following search was conducted in Pubmed:[Radius fracture OR ulna fracture OR greenstick fracture OR torus fracture OR wrist fracture OR forearm fracture] AND [ultrasound OR ultrasonography] AND [radiography OR plain film OR x ray] AND [Child OR children OR pediatric OR infant]. No limits were activated. RESULTS: Using this method 25 articles were found, with 6 relevant articles.

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ABSTRACT FINAL ID: OS15-F;

TITLE: Innovations in Simulation: Market Based Models - Pericardiocentesis

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Simulation (SIM) in healthcare is a new field, allowing novice learners the ability to get a feel for the logistics, operations and hands-on qualities of relevant procedures. Ultrasound is becoming more frequently used in both procedures and SIM alike. Most SIM models to date are expensive, high technology based products. We have developed a model that mimics both human tissue feel, as well as real life US images including real-time procedure guidance. No pericardiocentesis SIM models are validated to date with regards to efficacy for real life procedure preparation. We present this model as a low cost, readily available model that can be helpful for any institution with US capability to practice on. METHODS: A chicken based model was used to mimic the soft tissue structure of a small thorax, with a water filled zip-lock bag (pericardial fluid) overlying a water filled balloon (fluid filled heart) to mimic a model of pericardial effusion/tamponade. Model capabilities include real-time needle stereotactic insertion via US guidance and safety alerts for cardiac puncture. Practicioners can feel real-life thorax/pleural puncture with the zip-lock bag model for pericardial puncture. Pericardial fluid will be dyed with food coloring to alert the practicioner when the proper fluid has been aspirated. On contact with the needle, the cardiac model (water balloon) will pop, thus serving as a safety tool to realize when one has inserted the needle too far. CONCLUSIONS: Each model cost ~$25 with the capability of serving ~50-100 practicioners; 1 chicken ~$10, 100 water balloons $5, 100 zip-lock bags $10. High cost SIM models cost ~$40,000 for equivalent training capabilities. This model can help under-funded institutions have the ability to train practitioners in invasive procedures without the substantial cost of a high-tech SIM model. This model has not been formally studied yet, but future study is warranted.

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ABSTRACT FINAL ID: OS16-A;

TITLE: A Comparison Between Performing Lumbar Puncture using Traditional with Ultrasound Guided Method

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Lumbar puncture is an essential procedure in the diagnosis and treatment of a series of illnesses especially in emergent conditions. This procedure is performed routinely in daily clinical activities of emergency departments using external landmarks to find the most appropriate inter-spinous space. In the current study we compare performing lumbar puncture using palpation of external landmarks with ultrasound guided methods. METHODS: This prospective clinical trial was conducted at the emergency department of Hazrat-e-Rasoul Akram medical complex from March 2009 to March 2010. Eighty patients were randomly allocated in two equal groups using a table of random digits. In the first group, lumbar puncture was performed by ultrasound method and in the second group it was performed with palpation of external landmarks of spinal column. We compared the following outcome variables in the two groups: pain score at the time of procedure, number of attempts for successful dural penetration, numbers of traumatized and atraumatized patients and total length of time to perform the procedure. RESULTS: The mean age of patients was 42.3±3.5, among them 60% were female. Ten score numerical rating scale, times of attempts, number of traumatized patients, and whole length of time for successful procedure (min) in the first group were: 4.4, 1.4, 5, 3.5. In second group those factors were: 7.4, 2.6, 18, 6.4 (P-Value < 0.05). There are significant differences between the two groups. Also, in obese patients, ultrasound guided lumbar puncture coincided with better results in each of the outcomes. CONCLUSIONS: This study shows that lumbar puncture procedure conformed to more simplicity and lesser complications.

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ABSTRACT FINAL ID: OS16-B;

TITLE: Birds and Balloons: A Novel Simulation Model for Ultrasound-guided Central Venous Catheterization

ABSTRACT BODY:

Abstract Body: INTRODUCTION: There are many models used to aide in ultrasound-guided central venous catheterization training. Two common problems with simulation models are durability and realism, but the more important factor is cost. We describe a simple, inexpensive poultry model that demonstrates remarkably realistic ultrasound images. We purchased balloons, commonly used to make animal figures, and filled them with water. We tied the balloon 1/3 of the way down and repeated until we had three areas within the balloon filled with water. We then used chicken legs and pulled the balloons through the thighs using a needle driver (see picture A). Using the ultrasound the balloon can be located in the chicken and then cannulated. DISCUSSION: One of the advantages is the feasibility of purchasing the materials within a tight budget and the ease of set up (1 to 2 hours). Another advantage was the ability of the chicken legs to accurately simulate human tissue under ultrasound. The balloon filled with water also simulated the appearance of a central vein well, creating the “bounce and compressing the vessel technique" commonly taught in vascular ultrasound. Limitations include: (1) Handling raw chicken-gloves and strict hand washing. (2) The ability to cannulate the vessel only once. Although multiple knots in the balloon extends the amount of trials. (3) The ability to visualize the balloon coming through the chicken and thereby “cheat” by relying on visualizing where the balloon was laying verses relying on the ultrasound. This limitation could be mitigated by laying cloth over. Clearly more studies are needed to further assess its utility as an educational model in resident and medical student training compared to other modalities. Recent literature has shown that simulation improves resident accuracy, appeases anxiety, and decreases complications. It's important to continue to improve the educational tools of simulation. We feel that this model would be an excellent addition in the repertoire of central line simulation models and especially useful for those with limited funds.

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ABSTRACT FINAL ID: OS16-C;

TITLE: Characteristics of Patients Presenting to the Emergency Department with Significant Pericardial Effusions or Pericardial Tamponade

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Early diagnosis of pericardial tamponade in the Emergency Department (ED) is critical in order to decrease morbidity and mortality. One of the basic "procedures" for the emergency physician (EP) is cardiac ultrasound to determine the presence of pericardial fluid. We present data from a cohort of patients who presented to the Sheba Medical Center ED from October 2007 until January 2011 and were diagnosed with either tamponade or significant pericardial effusion by an EP using bedside ultrasound. Since not all patients present classically, the importance of publishing this data is to aid the EP in suspecting tamponade, and to emphasize the proficiency of emergency cardiac ultrasound in the hands of the EP. Our goal is to describe the characteristics of patients presenting to the ED with significant pericardial effusions or tamponade diagnosed by an EP using ultrasound. METHODS: Data was collected from the ED patient's file: triage complaint, age, sex, EP ultrasound result, cardiology echocardiogram result, vital signs, EKG, chest x-ray, past medical history, amount pericardial fluid drained, hospital course, length of stay, and final diagnosis. All drainage procedures were performed by either cardiology or cardiothoracic services. RESULTS: There were 18 patients in this series. The pericardial effusions ranged from moderate to large with hemodynamic compromise. Significant past medical history included malignancy, autoimmune disease, and renal failure. The average age was 65, 83% female. Average presenting vital signs: blood pressure 116/72, pulse 104. Pericardiocentesis or operative procedure was performed in 83%. The average amount of pericardial fluid removed was 649 cc. All but one patient survived to hospital discharge. The average length of stay was 6 days. CONCLUSION: High clinical suspicion based on presenting symptoms and signs combined with bedside emergency ultrasound, can lead to the early diagnosis and treatment of significant cardiac effusions or tamponade, a potentially lethal disease.

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ABSTRACT FINAL ID: OS16-D;

TITLE: Looking beyond Morrison's Pouch in Focused Assessment with Sonography in Trauma. Penetrating Abdominal Trauma and a New Sign in FAST for Emergency Medicine Physicians.

ABSTRACT BODY:

Abstract Body: CASE REPORT: We report the case of penetrating knife stab wound to the right upper quadrant in an 18 year old gentleman. He presented with tenderness over his right upper quadrant maximal over his wound in the plane of the linea semilunaris. He was haemodynamically stable on presentation. FAST scan (focused assessment with sonography in trauma) was performed. This did not reveal fluid in Morrison's pouch. It did however reveal a thin low-echogenicity rim of fluid around the gallbladder with increased echogenicity of the gallbladder lumen. Serial FAST scan revealed an increase in this extra-cholecystic fluid volume. He subsequently went on to have a CT scan of his abdomen. This confirmed the penetrating injury to the gallbladder. He subsequently went to theatre for midline laparotomy and repair of his gallbladder. Post-operative course was uneventful.

Penetrating gallbladder injury is a rare event. It is infrequently reported in the literature. FAST scan is a rapid technique that is widely used by emergency physicians in the assessment of treatment of traumatically injured patients. The utilization of this modality continues to gain more widespread prominence among emergency medicine physicians. The eponymous sign of fluid in Morrison's pouch classically portends the need for laparotomy. In this case, while there was no fluid in Morisson's pouch, there was fluid demonstrated around the gallbladder. We believe that this sign should be adopted by the emergency medicine community as similar harbinger of need for operative intervention in trauma.

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ABSTRACT FINAL ID: OS16-E;

TITLE: Use of Emergency Department Ultrasound Guided Pericardiocentesis as a Lifesaving Intervention

ABSTRACT BODY:

Abstract Body: CASE REPORT: 55 year male with 2 days diffuse chest and right shoulder pain; 4 hours rapidly progressive shortness of breath. No fever, cough, recent immobility, travel, surgery or trauma. Recurrent syncope since 3 months prior. PE: Anxious, severe respiratory distress on non-rebreather. Vital Signs: 94/74 120 24 90% HEENT: Membranes moist, mouth breathing. NECK: Supple, trachea midline. JVD markedly elevated CV: Muffled heart sounds. No murmurs or rubs. RESP: Distant breath sounds, decreased at bases. ABD: Benign EXT: Pulses 2+, bounding. NEURO: AAO. Initial Studies: US and EKG will be shown. Bedside TTE showed large pericardial effusion and RV collapse during diastole. US guided pericardiocentesis removed 40 ml serosanguinous fluid. Tachycardia and blood pressure improved immediately. Labs resulted after procedure: Na 126, K 5.6, C02 12, BUN 75, Cr 3.78. Pericardial fluid: WBC's 10,400 Cytology – abundant mesothelial cells with atypia. Subsequent subcarinal lymph node FNA : adenocarcinoma.

DISCUSSION: The first part of the pericardial volume-pressure curve is flat, so the pericardium can accommodate increasing volume without large increases in pressure. As the pericardium reaches the limit of its capacity, the slope steepens. Small increases in fluid affect large increases in pressure until they exceed normal filling pressure of the right heart; ventricular filling is limited and cardiac tamponade results. Narrow pulse pressure, tachycardia, and pulsus paradoxus can be seen. Patients may present with chest pain, shortness of breath, right upper quadrant tenderness or shoulder pain due to hepatic congestion. CXR shows cardiomegaly if there is > 200 ml fluid. EKG shows low voltage QRS and ST-segment elevation with PR depression. Electrical alternans is classic but rare. Echo is confirmatory if effusion and paradoxical systolic wall motion are seen. Initial management: volume resuscitation increases RV filling pressures to overcome the pressure of pericardial constriction, US guided pericardiocentesis achieves hemodynamic stability. Mortality rate is impacted by the speed of diagnosis and treatment.

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ABSTRACT FINAL ID: OS16-F;

TITLE: Is it Necessary to Use Ultrasound in ED Patients with a Clinical Picture of Biliary Emergency?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Ultrasonography is a quick diagnostic method in the ED, allowing for the triage of patients with a major emergency that requires immediate surgery. Emergency physicians have adopted ultrasonography as a standard investigation in several critical syndromes in order to diminish the intervention duration and increase diagnostic accuracy. METHODS: This was a retrospective observational study (759 patients) that assessed the importance of ultrasonography in patients who presented with acute biliopancreatic symptoms in the ED of Clinical Emergency Hospital, Cluj-Napoca, between 6th December 2005 and 30th December 2006. The ultrasonographic exam(US) was performed within the first 2 hours after presenting in the E.D. RESULTS: The average age of patients was 56.67 ± 16.76 years. We observed a statistically significant predominance of patients with biliopancreatic emergencies within the women study group in urban areas ($\chi 2$, $p < 0.000990$). Biliary dyskinesia subgroup: US showed the presence of gall stones in only 4% of the patients. In this subgroup there were no biliary emergencies that required immediate surgery. Biliary colic subgroup: US showed the presence of gall stones in 85.96% of the patients. Complications of cholelithiasis were revealed in 56.22% of the subjects. The complication that was most frequently encountered was acute cholecystitis (34.66%). An increased risk for developing a complication of lithiasis (OR=19.1) that could be depicted by US and that needed surgical treatment (OR=109.32) was discovered in patients with biliary colic. The positive predictive value of the US method was 93.87%. CONCLUSION: 1. The descriptive analysis of the study group's epidemiologic data revealed aspects of primary medical care that need further improvement: high incidence of biliary emergencies in female subjects from urban areas. 2. The statistical analysis of the performance demonstrated by the ultrasonographic exam proved good accuracy for detection of surgery complication of lithiasis. 3. The study permits the proposal of a standard protocol, based on the practical evidence of biliopancreatic management in ED.

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ABSTRACT FINAL ID: OS16-G;

TITLE: Hip X-rays in Limping Children: Is One View Enough?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: For children with suspected hip pathology, an anterior-posterior (AP) pelvic radiograph with a frog-lateral (FL) view is commonly requested. Exposure to radiation is an obvious concern in children. If a single radiograph produced the same diagnostic yield, then this would lead to a significant decrease in radiation exposure. Our aim was to investigate if the FL view alone was sufficiently sensitive in detecting abnormalities of the hip joint. METHODS: All paediatric hip/pelvic radiographs taken as two views over the course of a year at a teaching hospital with a Paediatric Emergency Department were obtained retrospectively. Cases with reported abnormalities were reviewed by a consultant paediatric emergency physician and a consultant radiologist to see if the abnormality was visible on the FL view. RESULTS: Out of a total of 733 cases, 99 cases were relevant to this study. Of these, 10 cases had normal FL views, resulting in a false negative rate of 12.1%. CONCLUSION: Assessing the FL view alone will potentially miss abnormalities in a significant proportion of cases. We recommend obtaining two views in a child with suspected hip pathology. Further research into Paediatric Emergency Department-specific patient populations is required.

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ABSTRACT FINAL ID: OS18-A;

TITLE: The Impact of Two Freestanding Emergency Departments on a Tertiary Care Center

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Freestanding emergency departments (EDs) have become increasingly popular as the need for emergency care continues to grow. Proximity to an ED increases the likelihood that a patient utilizes that ED. The objective of the study was to analyze the impact of two recently constructed freestanding EDs on a local tertiary care center's patient volume and admission rates. METHODS: A retrospective analysis examined the monthly ED volume and admission rates at the main ED and volume at each of the two freestanding EDs located 9.6 and 12 miles from the main ED once they became operational in July of 2007 and August of 2009, respectively. The main ED census records were divided into three distinct time frames; period A (control) was January 2007 through June 2007. Period B was between July 2007 and July 2009 when one freestanding ED was open. Period C was from August 2009 through June 2010 and depicts the period when both freestanding EDs were open. RESULTS: The mean monthly patient volume for the main ED was: 4709 for period A, but dropped significantly ($p<0.01$) to 4447 for period B, and again dropped significantly ($p<0.01$) to 4242 during period C. The combined volume for all three EDs increased throughout the study period. A combined monthly volume increase to 5642 occurred in Period B and increased to 6808 in Period C. A two-factor ANOVA was used to analyze admission rates while adjusting for monthly variation. The adjusted mean admission rate at the main ED for period A was 0.221, which dropped somewhat, though not significantly ($p = .3505$) to 0.213 for period B, and then significantly ($p<0.01$) to 0.189 for period C.
CONCLUSION: Opening two freestanding EDs resulted in a decrease in overall volume and admission rates at the main ED. In addition, the opening of these two facilities resulted in an increase in overall ED volume for the healthcare system.

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ABSTRACT FINAL ID: OS18-B;

TITLE: A Dedicated Staff of Emergency Physicians in the ED can Reduce the Need for Specialist Evaluations, Leading to an Effective Reduction of Costs for the Hospital

ABSTRACT BODY:

Abstract Body: OBJECTIVE: It has become more and more evident the importance of pursuing a dedicated staff of specialized Emergency Physicians working in the ED, instead of having physicians from several different specialties rotating to cover shifts while still dependent on their original wards. While it seems an obvious advantage in the management of critical patients, because of a higher specific training and competence on leading situations like cardiac arrest and peri-arrest scenarios, it could also be true in a vast majority of other patients, less critical or definitely not critical but still seeking an ED evaluation and treatment for their acute diseases. Most of these diseases can be diagnosed, treated and eventually discharged by the Emergency Physician alone without any need of asking, waiting for and relying on a specialist consultation. This should lead to a reduction of ED length of stay for the patients, with organizational advantages, and also a cost reduction for the ED and the whole hospital, because the specialists can avoid spending most of their on-call hours in the ED, thus being allowed to perform other jobs, with a clear benefit for their departments, as well. METHODS: In our Department, a Level I ED in northern Italy managing about 40.000 patients per year, during the last two years there have been some substantial changes in this direction, with the progressive creation of a dedicated staff mostly made of physicians with specific training and/or experience in Emergency Medicine. One of the expected outcomes was the reduction of specialists consults with a target of appropriateness and increased professionalism of the Emergency Physicians. RESULTS: In the table below we present the data about the differences on the amounts of specialty consult requests comparing year 2008 versus the period May 2010 - April 2011 and the evident reduction of costs for the ED. CONCLUSIONS: Our data support the advantages, also in economic terms, of a dedicated, specifically trained staff of Emergency Physicians in the ED.

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ABSTRACT FINAL ID: OS18-C;

TITLE: A Before- and After-Intervention Trial for Reducing Medical Errors During the Intrahospital Transport of Emergency Patients

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The goal of this study was to explore the effect of intervention in safe intrahospital transport on the incidence of unexpected events (UEs) occurring during the transport of emergency patients. METHODS: This study was performed in an urban tertiary teaching hospital emergency department (ED) receiving approximately 50,000 annual visits from May 17 to October 30, 2010. Patients older than 15 years who were transported to general wards, intensive care units, MRI rooms, and radiologic intervention or operation rooms were enrolled in the study. Demographics and data on all UEs related to the devices, clinical situations, and tubes or lines were measured by registered nurses working after patients arrived at the site. Study participants and transporters in this study were blind. After the intervention, acting nurses were required to use transport checklists (TCLs) before the patients were transported, and the transporters were educated in safe transport and basic skills. We compared the rate of all UEs and serious UEs and the proportion of transport trips on which accompanying physicians were present during the pre- and post-intervention periods. Serious UEs was defined as any worsening of a patient's clinical status or condition. Statistical analyses were conducted using student's t-tests or chi-square tests. RESULTS: In total, 597 patients were surveyed during 680 patient transport events before interventions, whereas 539 patients were surveyed during 605 transports after interventions. Overall, UEs decreased significantly from a value of 36.8% in the pre-intervention period to a value of 22.1% in the post-intervention period (p=0.001). Serious UEs in clinical status also decreased significantly from 9.1% in the pre-intervention period to a value of 5.3% in the post-intervention period (p=0.005). CONCLUSION: After interventions by acting nurses' using transport checklists and educating transporters, there was a significant decrease in the rate of total and serious UEs during intrahospital transport from the ED.

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ABSTRACT FINAL ID: OS18-E;

TITLE: Comparison of Patient Satisfaction between Two Emergency Departments with and without Emergency Medicine Specialists

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Patient satisfaction is one of the most important health care outcomes. This study examines the influence of the presence of emergency medicine specialists on patient satisfaction. METHODS: From September 2007 to November 2007, a cross-sectional study that included 720 patients was conducted in two emergency wards that were managed by either attending and residents of Emergency Medicine (teaching hospital) or general practitioners (public hospital). A multistage, randomized cluster process was used to select and stratify the sample. Demographic and patient satisfaction questionnaires were administered to all participants. Data was analyzed using SPSS-16 software. RESULTS: 355 and 365 patients were included in an academic hospital and a non-academic hospital, respectively. There was no difference in sex, mean age, or educational level of patients between the two hospitals. The satisfaction rate was significantly higher at the academic hospital (86.8 vs. 41.8%). The most important variable related to dissatisfaction in the non-academic hospital was attributed to the qualities of the physicians' performance. CONCLUSION: Our survey showed that the presence of emergency physicians in the Iranian hospital emergency wards can improve patients' satisfaction significantly.

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ABSTRACT FINAL ID: OS19-A;

TITLE: Discharge Against Medical Advice in Emergency Department of General Hospital in Tehran

ABSTRACT BODY:

Abstract Body: OBJECTIVE: AMA patients who want to discharge against medical advice (AMA) are exposed to the risk of inadequate treatment and need for readmission. The emergency department (ED) is the first site that patients receive medical care in hospitals. The present study was performed in Shohadaye Tajrish hospital, one of the educational hospitals in Tehran city, to assess patients leaving AMA and the impact of a study intervention on reducing AMA rate in ED patients. METHODS: Study participants were all patients who wanted to leave AMA between February and July 2010. In the first phase, during twelve weeks, data on patients who want to leave AMA were gathered and inserted on the study checklist. In the second phase of the study there was full description by one of the physicians of the emergency department. They talk about the causes that the patients want to leave the emergency department and before confirmation of their decision patients received full awareness about their problems and managements. RESULTS: A total of 12401 patients were treated in the ED during the first phase of the study. The global AMA discharge number in the first phase of the study was 1665 patients and AMA prevalence in this phase before our intervention was 13.43%. A total of 1275 patients left the hospital AMA during the second phase (three months) of our study. AMA prevalence in this phase and after study intervention was 8.38%. Prevalence of AMA in our patients significantly decreased after intervention (P=0.00). CONCLUSION: Full description for patients who want to have AMA discharge about their problem and management before confirmation of their decision can decrease AMA discharge.

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ABSTRACT FINAL ID: OS19-B;

TITLE: An Ergonomics Approach to Evaluating an Emergency Medicine Physician's Workstation

ABSTRACT BODY:

Abstract Body: OBJECTIVE and METHODS: An ergonomic evaluation of an emergency medicine physician's workstation was conducted in terms of physician's working posture and physical discomfort and lighting/noise work environment. RESULTS: The rapid upper limb assessment (RULA) method used for posture analysis revealed the activities with the highest mean RULA scores were: documentation (2.4) and reading/interpreting (2.2) encountered at the physician's workplace/desk. The physical discomfort questionnaire gave the highest discomfort for the neck (2.5) and back (2.9), especially lower and upper back. The user (physician's) satisfaction questionnaire results showed the least satisfaction with workspace (mean rating 1.6 out of possible 5), followed by number of workstations (1.7), keyboard position (2.3), monitor position (3.1) and desk height (3.5). Lighting conditions were found to be poor to barely satisfactory at the physician's workstation. The results revealed that lighting was between the range of 130 lx, clearly insufficient (in zone 1) and 326 lx, satisfactory (at physician's desk). The desirable/recommended task lighting at the physician's desk is 500 lx. User satisfaction questionnaire results showed high dissatisfaction with lighting (mean rating 3.3). The noise level of 57 dBA is considered high to perform mental work satisfactorily and considered too high for patient's well being. A noise level of 50 dBA is desirable/recommended at the physician's workstation. User satisfaction questionnaire results showed dissatisfaction with the noise level (mean rating 2.8). CONCLUSIONS: The ergonomics evaluation of the emergency medicine physician's workstation suggests that an ergonomics intervention is needed to: (1) redesign the workstation based on engineering anthropometry to deal with the physician's working posture and physical discomfort and (2) improve lighting and noise work environment based on established guidelines. The ergonomics methodology pursued in this investigation can be applied advantageously to evaluate any other existing or new workstation of an emergency medicine physician.

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ABSTRACT FINAL ID: OS19-C;

TITLE: Rapid Evidence-Based Answers to Clinical Questions Asked by Emergency Doctors: First Experience of Iran

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Answering clinical questions (CQs) is the basic activity in clinical decision making. There are different types and levels of evidences to answer CQs. Emergency department (ED) is one of main places in which physicians encounter lots of questions. We developed the first clinical librarian (CL) project in Iran, to assess the process of rapid evidence-based answering to emergency physicians (EPs). METHODS: A CL went to the ED equipped with wireless internet. Unlike most CL projects, we used a face-to-face approach between EPs and CL during 3 months period in 30 randomly selected clinical shifts (from Oct to Dec 2010). We recorded times related to answering steps (Ask, PICO, Search-Answer, and Verify) and issues such as types of CQs and evidence and used databases. RESULTS: 126 CQs in 5 types were asked by EPs (66.7% therapy, 19.8% diagnosis, 6.3% frequency/rate, 4.8% prognosis, and 2.4% etiology) with most of CQs about cardiovascular (44.4%), musculoskeletal (16.7%), central nervous (14.3%), and respiratory systems (13.5%). EPs asked CQs to make a decision (35%), find an intervention (27.8%), and facts (14.3%). CL answered each CQ in mean time of 14.4±14.1 min. He used 1-9 keywords (3.9±1.5) for searches. Textbooks (33.3%), traditional reviews (15.9%), drug monographs (12%), and guidelines (11%) were the most frequently applied evidence types. MDConsult (39.7%), PubMed Clinical Queries (27%), RxList (12%), and National Guideline Clearinghouse (8.7%) were the most utilized resources. We found correlations between the number of keywords and ask time, ask time and verify time, search-answer time and verify time (respectively P=0.003, 0.016, and 0.043; CI=95%). CONCLUSION: Regarding the nature of emergency medicine, therapeutic and cardiovascular questions are common CQ types in the ED. Answering CQs in less than 15 minutes is possible in a small-scale setting. Despite some critics of textbooks, they are still valuable resources in CQ answering. Length of CQ may affect the time needed to answer. This research could be the first step for future projects in developing countries before generalization of the results.

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ABSTRACT FINAL ID: OS19-E;

TITLE: The Causes of Abuse of Emergency Residents and Faculty Physicians of Training Hospitals in Iran and the Solutions to Reduce it

ABSTRACT BODY:

Abstract Body: OBJECTIVE: In 2010 a study in America reported high prevalence of abuse of emergency residents and physicians. In this regard, this study examines the causes and solutions to reduce high prevalence of abuse in emergency wards of training hospitals. The specific objective was to determine the cause of the high prevalence of abuse to emergency residents and physicians, and the strategies to reduce it in Iran. METHODS: Causes of abuse (patient's death, delays in the process of treatment, crowded emergency room, drugs and alcohol consumption by patient and patient's mental disorder) and strategies to reduce it (increasing security personnel, increasing personnel, reducing physicians work hours, prohibition of entry for paint's attendants, training how to deal with an aggressive patient, patient refusal due to personnel's incapability or lack of facilities) were asked through questionnaires administered to operating emergency residents and physicians in four different training hospitals in major cities in Iran. The questionnaire was anonymous, completely optional and confidential and to be returned in a closed envelope. RESULTS: From 90 submitted questionnaires only 65, 51% males, with the average 33 years (SD 5.3), 63% married, had been completely filled out and returned. Statistical analysis of the responses revealed: Causes: Crowded emergency waiting room 38%, Delay in the process of treatment 26%, Patient's death 14%, Drugs and alcohol consumption 11%, Patient mental disorders 11%. Strategies:
1. Patient refusal due to personnel's incapability or lack of facilities, 2. Prohibition of entry for patient's attendant, 3. Increasing security personnel, 4. Training how to deal with an aggressive patient, 5. Reduced physicians working hours, 6. Increasing the number of personnel. CONCLUSION: According to the findings, the major patient refusal due to personnel's incapability or lack of facilities cause of abuse is the crowded emergency rooms and the best strategy is attention to this point more than the others for reducing the abuse.

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ABSTRACT FINAL ID: OS19-F;

TITLE: Types of Abuse of Emergency Residents and Faculty Physicians by Patients and their Attendants

ABSTRACT BODY:

Abstract Body: OBJECTIVE: A survey in emergency wards about emergency residents being abused by patients was conducted in 2010 in America. It is now nearly 10 years from the creation of emergency medicine in Iran, and because of the nature of this job in its first line is to deal with critically ill patients, it has been decided to conduct the same survey in the hospitals to find out the prevalence of emergency residents experiences of abuse and harassment in comparison to the American survey findings. Our goal was to determine the prevalence of emergency residents experiences of abuse and harassment. METHODS: A questionnaire designed for 20 operating emergency residents based on pilot study; and carried out in four different training hospitals located in major cities. The questionnaire consisted of questions about emergency residents' experiences regarding different types of abuse including: verbal abuse, physical & verbal threat, physical assault, sexual harassment. The questionnaire was anonymous, completely optional and confidential and to be returned in closed envelope. RESULTS: From 90 submitted questionnaires only 65, 51% males, with the average 33 years (SD 5.3), 63% married, had been completely filled and returned. Statistical analysis of the responses revealed: 88% of individuals whom entered the study experienced at least one type of abuse. Prevalence of verbal abuse by patients 65% (compared with 64% in America), verbal abuse by patients' attendants 85%, verbal & physical threat abuse by patients 34% (compared to 68% in America), verbal & physical threat abuse by patients' attendants 51%, physical assault abuse by patients 9% (compared to 32% in America), physical assault abuse by patients' attendants 15%, sexual harassment abuse by patients 25% (compared with 16% in America), sexual harassment abuse by patients' attendance 23%. CONCLUSION: The result shows a high prevalence of abuse and harassment among emergency residents and faculty physicians and it is very distinctive from the results of the study conducted in America in any type of abuse except verbal abuse.

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ABSTRACT FINAL ID: OS19-H;

TITLE: Emergency Medicine in Singapore

ABSTRACT BODY:

Abstract Body: Emergency Medicine (EM) became recognized as a specialty in 1984. In the last 13 years, EM has developed rapidly to become an established and respected specialty in Singapore. It has indeed been challenging but it brings about new opportunities. Some of the developments that have taken place include:

1. The introduction of EM into the undergraduate medical school curriculum;
2. Establishment of Basic (3 years) as well as Advanced (3 years) Post Graduate training in EM;
3. A Masters in EM degree with the National University of Singapore;
4. A Fellowship Programme in EM with participation of candidates from overseas nations;
5. A formal Chapter of EM with the Academy of Medicine, Singapore;
6. Active participation in International EM;
7. Development of an evolving nationwide EMS system;
8. Establishment and coordination of Life Support Training;
9. Major Representation and contribution to the National Resuscitation Council guidelines and activities;
10. Development of EM research;
11.Coordination and participation of National Emergency Preparedness programmes;
12. Setting up the Advanced Diploma in Emergency Nursing and the Masters in Nursing (EM) as well as the Emergency Nurse Practitioner Programme;
13. Being the first country outside the USA to set up the Emergency Medicine Residency system, ACGME-I.

This presentation will share in pictures and words how Singapore accomplished this in 15 short years.

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ABSTRACT FINAL ID: OS20-A;

TITLE: A Multicenter Study to Develop a New Triage Tool Using a Modified Delphi Technique

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The Triage Emergency Method (TEM v1), a new four-level in-hospital triage, has shown good inter- and intra-rater reliability for rating triage acuity. Our aim was to check if TEM v1 reaches a large consensus among Italian triage experts. Finally we tried to improve the model and to create a new model: TEM v2. METHODS: A 2 round modified Delphi study was conducted including 25 triage experts with more than 5 yrs of experience in ED triage. Anonymity between the participants was maintained. The predetermined consensus level was considered 80%. The first and second round questionnaires were based on semi-structured questions. Those items that did not achieve consensus in round one were represented to all members of the group with a summary of the rest of the group's findings. RESULTS: Total return rate was 72% (18/25), the return rate for round one and two was 92% (23/25) and 78% (18/23) respectively. In the first round, 56% items reached the consensus level: TEM v1 could be used in Italian EDs; it was correct and easy to understand but not complete, exhaustive, and not easy to memorize and to consult. After the first round, a set of eleven questions was sent with the new TEM v2. Eight items of round 2 reached more than 80% consensus. CONCLUSION: Using the Delphi technique we developed from TEM v1, the new triage tool TEM v2 developed achieved a large consensus among a panel of triage experts. This is, to our knowledge, the first Italian study which uses the Delphi technique to reach consensus on a triage system and to improve it.

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ABSTRACT FINAL ID: OS20-B;

TITLE: Delphi Consensus Process to Develop Key Performance Indicators for Emergency Departments in Ireland

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Performance indicators are flags that can alert to opportunities for improvement in patient care.

Our objective is to develop a consensus among all Emergency Medicine (EM) specialists working in Ireland for Emergency Department (ED) key performance indicators (KPIs). METHODS: A three-round Modified Delphi process was employed in this study. First, we performed a systematic literature review of relevant ED KPIs. Second, in order to perform the Delphi rounds, an online questionnaire with 54 potential KPIs was set up for round one. Each indicator on the questionnaire was rated using a 5-point Likert-type rating scale. Agreement was defined as ≥70% of responders rating an indicator as “agree” or “strongly agree” on the rating scale. Results are presented as mean ± standard deviation. Sensitivity of the ratings was examined for robustness by bootstrapping the original sample. RESULTS: Of the 693 citations identified by the literature search, there was no publication on performance indicators directly referable to Irish EM practice. The response rate in rounds 1, 2 and 3, was 86%, 88% and 88% respectively. Ninety-seven potential indicators reached agreement. The 10 highest rated indicators were: presence of a dedicated ED clinical information system (4.73±0.60), ED compliance with minimum design standards (4.7±0.5), time from ED arrival to first ECG in suspected cardiac chest pain (4.7±0.5), time to brain computed tomography for patients presenting within 4.5 hours of onset of symptoms consistent with a stroke (4.60±0.60), ED system of following up ‘missed’ x-rays (4.6±0.6), proportion of patients with pain assessed at triage (4.6±0.7), compliance with workforce planning standards (4.6±0.8), proportion of children hospitalised for general anaesthesia for minor procedures where ED-based procedural sedation would obviate hospitalisation (4.6±0.8), time to antibiotics in sepsis (4.57±0.64) and availability of a full capacity protocol plan for use in managing ED overcrowding (4.53±0.81). CONCLUSION: It was possible to reach consensus on 97 KPIs for EDs in Ireland employing a Delphi consensus process.

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ABSTRACT FINAL ID: OS20-C;

TITLE: Long Term Tunneled Venous Access Catheter for Hyperbaric Studies in a Porcine Model

ABSTRACT BODY:

Abstract Body: OBJECTIVE: A porcine model is used in research due to physiologic similarity to humans. Arterial and venous access are necessary to accomplish research objectives of blood pressure, cardiac and oxygen content monitoring, blood sampling, resuscitation and controlled exsanguanation. In past studies of hyperbaric applications to traumatic resuscitation, temporary single lumen small diameter catheters were used, requiring a new catheter for each trial. Insertion through scar tissue is difficult and time consuming. Problems present in exsanguanation trials due to small diameter and tendency to kink and clot. Long term Apheresis and Hickman catheters are used in humans, often in place for years. We applied this technology to the porcine hyperbaric model. METHODS: Under ultrasound guidance, the left subclavian vein is visualized and entered with an 18 gauge needle and introducer over a wire. A 9Fr Hickman catheter is tunneled subcutaneously from the left suprascapular region to the introducer site, and inserted down the subclavian vein into the IVC. Another 9Fr catheter is inserted at the right femoral artery using the same technique, the hub tunneled from the right superior gluteal region. A 15Fr Apheresis catheter is inserted into the left femoral artery and tunneled with the hub accessible on the left flank. All catheters are secured with 2-0 Nylon in anatomical location. The swine cannot remove them. Lumens are flushed with 6000units/ml heparinized saline. RESULTS: The swine was recovered and returned to normal health post operatively without complications. All catheter lumens remained viable for 1 week until the animal was electively euthanized. CONCLUSIONS: Long term catheter insertion in the swine model is an efficient and effective method to secure long term access. Blood samples can readily be obtained without requiring anesthesia or sedation. The apheresis catheter, designed for bidirectional large volume flow, is the ideal device for exsanguanation studies.

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ABSTRACT FINAL ID: OS20-D;

TITLE: Effect of Education on Emergency Department Nurses' Knowledge and Skill Regarding Ecstasy and Ecstasy users

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Increasing numbers of ecstasy users and its poisoned patients, require that hospitals' emergency nurses should be informed and well-trained regarding these patients. This study was conducted to access the knowledge and skill of this group with regard to ecstasy and its victims, before and after appropriate training. METHODS: In this study 117 nurses from three great hospitals of Shiraz were surveyed by filling out reliable questionnaires at 3 time points: before, immediately after, and 3 months after training. Data analysis was performed by SPSS 11.5. RESULTS: Mean age of participants in this study was 30.5±7.53 years. 109 (90.8%) of the nurses studied hadn't passed any educational courses about ecstasy and 75 (62.7%) of them hadn't had any approach to the ecstasy poisoned patients, before this study. Mean score of knowledge and skill of nurses were significantly higher after the training course in comparison to before the course, although we noticed some dropping of their knowledge and skill in three months after education compared to immediately after education. CONCLUSION: A growing number of ecstasy users and poisoned patients signifies the importance of hospitals' emergency nurses' knowledge and skill about this issue. So we performed this study to better understand the above indices and also to measure the effect of education on improving them. Results showed that knowledge and skill of nurses about ecstasy and its poisoned patients were low but improved significantly after providing education for them, although persistence of knowledge should not be overemphasized.

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ABSTRACT FINAL ID: OS20-E;

TITLE: The Effects of Melatonin on Plasma Copper, Chromium and Cobalt Levels in Radiocontrast Agent Toxicity

ABSTRACT BODY:

Abstract Body: OBJECTIVE: We aimed to investigate the effects of melatonin on plasma copper, chromium and cobalt levels in rabbits after the administration of a radiocontrast agent. METHODS: Twenty-four New Zealand rabbits were divided into four groups, six rabbits in each: control, sham, hydration plus melatonin. The rabbits in the control group were sacrificed after the extraction of blood samples. All other rabbits received a single dose of diatrizoat sodium (10 ml/kg, iv). In the hydration group, saline (10 ml/kg, iv) was infused with 6 hour intervals. In the melatonin group, melatonin (10 mg/kg, iv) and saline (10 ml/kg, iv) were given with 6 hour intervals. Venous blood samples were obtained from the rabbits before and 48 and 72 hours after radiocontrast administration for determinations of plasma copper, chromium and cobalt levels. Plasma copper, chromium and cobalt levels were measured with atomic absorption spectrometer with Ziemann Correction. Kruskal Wallis variance analysis was performed and paired comparisons were tested with Mann Whitney U test with Bonferroni correction. $p<0.008$ was considered statistically significant. RESULTS: Basal plasma copper, chromium and cobalt levels of all groups were not significantly different from each other ($p>0.008$). Plasma cobalt level in the melatonin group was significantly higher than the sham group at the end of the 48th hour ($p=0.004$). The plasma chromium level in the melatonin group was significantly higher from both control and sham groups at the end of the 72nd hour ($p=0.004$, $p=0.004$). CONCLUSION: Melatonin has favorable effects on plasma cobalt and chromium levels in radiocontrast agent toxicity.

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ABSTRACT FINAL ID: OS20-F;

TITLE: The Effects of Melatonin on Plasma Selenium Levels in Iodinated Radiocontrast Agent Toxicity

ABSTRACT BODY:

Abstract Body: OBJECTIVE: We aimed to investigate the effects of melatonin on plasma selenium levels in rabbits after the administration of a radiocontrast agent. METHODS: Twenty-four New Zealand rabbits were divided into four groups, six rabbits in each: control, sham, hydration plus melatonin. The rabbits in the control group were sacrificed after the extraction of blood samples. All other rabbits received a single dose of diatrizoat sodium (10 ml/kg, iv). In the hydration group, saline (10 ml/kg, iv) was infused with 6 hour intervals. In the melatonin group, melatonin (10 mg/kg, iv) and saline (10 ml/kg, iv) were given with 6 hour intervals. Venous blood samples were obtained from the rabbits before and 48 and 72 hours after radiocontrast administration for determinations of plasma selenium levels. Plasma zinc levels were measured with atomic absorption spectrometer with Ziemann Correction. Kruskal Wallis variance analysis was performed and paired comparisons were tested with Mann Whitney U test with Bonferroni correction. $p<0.008$ was considered statistically significant. RESULTS: The plasma selenium level in the melatonin group was significantly lower than both control and sham groups ($p=0.004$, $p=0.004$). The plasma selenium level in the melatonin group was significantly higher than both control and sham groups at the end of 72nd hour ($p=0.004$, $p=0.004$). CONCLUSION: Melatonin has favorable effects on plasma selenium levels in iodinated radiocontrast agent toxicity.

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ABSTRACT FINAL ID: OS20-G;

TITLE: The Effects of Melatonin on Plasma Zinc Levels in Radiocontrast Agent Toxicity

ABSTRACT BODY:

Abstract Body: OBJECTIVE: We aimed to investigate the effects of melatonin on plasma zinc levels in rabbits after the administration of a radiocontrast agent. METHODS: Twenty-four New Zealand rabbits were divided into four groups, six rabbits in each: control, sham, hydration plus melatonin. The rabbits in the control group were sacrificed after the extraction of blood samples. All other rabbits received a single dose of diatrizoat sodium (10 ml/kg, iv). In the hydration group, saline (10 ml/kg, iv) was infused with 6 hour intervals. In the melatonin group, melatonin (10 mg/kg, iv) and saline (10 ml/kg, iv) were given with 6 hour intervals. Venous blood samples were obtained from the rabbits before and 48 and 72 hours after radiocontrast administration for determinations of plasma zinc levels. Plasma zinc levels were measured with atomic absorption spectrometer with Ziemann Correction. Kruskal Wallis variance analysis was performed and paired comparisons were tested with Mann Whitney U test with Bonferroni correction. $p<0.008$ was considered statistically significant. RESULTS: Basal plasma zinc levels of all groups were determined to be not significantly different. The plasma zinc level of the melatonin plus hydration group was not significantly different from both control and hydration groups at the end of the 48th and 72nd hours ($p>0.008$). The plasma zinc level of the sham group was significantly lower than the hydration group ($p=0.004$). CONCLUSION: Melatonin has no favorable effects on plasma zinc levels in radiocontrast agent toxicity.

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ABSTRACT FINAL ID: OS21-A;

TITLE: A Dangerous Meal: Acute Cocaine Intoxication after Body Packing

ABSTRACT BODY:

Abstract Body: CASE REPORT: A 30 years old healthy Nigerian woman was carried to the hospital and admitted to the emergency room with tachycardia, chest pain and agitation. She reported ingestion of multiple packets containing cocaine before her recent arrival in Italy. The patient presented with HR 140 bpm, BP 120/70 mmHg and body temperature 36.9°. She was markedly overexcited and complained of thoracic constriction. Urinary toxicology and blood samples were carried out and empirical treatment with benzodiazepines (midazolam) was started with improvement of the symptoms. Myocardial enzymes elevation was found. An abdominal X-ray examination showed multiple foreign bodies. The subsequent CT scan confirmed about 90 solid packets, located mainly in the stomach and in the small bowel. The endoscopic option was discarded. An enteroclysis with polyethylene glycol was tried but a second CT showed only a partial progression of the ovules. The patient was then admitted in an ICU and thereafter carried to the surgical room where she underwent a double enterotomy with removal of 94 packets of cocaine. The intervention was carried out without early complications and a radiologic control confirmed the complete removal. After a few days the patient was transferred to the surgical ward and finally discharged from hospital. DISCUSSION: Drug traffic across international borders is an actual problem in many countries. Body packers are people that conceal illicit drugs inside body cavities (most commonly the gastroenteric tract) to avoid police controls while crossing a frontier. They can present themselves to the hospital with signs of acute intoxication or gastrointestinal complications (like perforation or mechanical obstruction) or can be carried by law forces. Recently a protocol for the management of body packing has been proposed. Even though a conservative treatment (whole bowel irrigation with polyethylene glycol compounds) can be safely carried out in many asymptomatic patients, surgical intervention is needed when signs of acute intoxication are present.

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ABSTRACT FINAL ID: OS21-B;

TITLE: Neurotoxic Snake Envenomation: A Probable Diagnosis in the Unconscious Patient

ABSTRACT BODY:

Abstract Body: INTRODUCTION: Snake envenomation is a routinely occurring life threatening emergency in tropical countries like India. A variety of poisonous snakes kill 50,000 Indians a year. In fact as many people die of snakebites in India as the rest of the world put together. So far 216 species of snakes have been identified in India of which around 52 are known to be poisonous. Not all cases of snake envenomation will always have a classical presentation resulting in delay in diagnosis and treatment with disastrous consequences. CASE REPORT: Herein is described a patient from a semi-urban background who was brought to our referral hospital in a semiconscious state with history of some unknown bite where the biting creature was not identified due to poor visibility in the night. Her GCS deteriorated within half an hour of arrival in the ED, radiological and laboratory investigations were futile in ascertaining the cause of unconsciousness and even though classical fang mark was absent she was treated as a clinical case of neurotoxic snake envenomation with Indian Polyvalent Anti Snake Venom, neostigmine & atropine. The patient showed signs of neurological recovery within 6 hours post ASV, recovered completely overnight and was discharged after 48 hours post ASV therapy. DISCUSSION: This case reminds the fact that bites of certain snakes like cobra & krait may present with pure neurotoxic manifestations which can appear as early as 3 minutes after the bite but may also be delayed by up to 19 hrs depending on the amount of venom injected along with other natural factors and host response and unconsciousness may be the lone manifestation. Thus sometimes in a developing country like India with limited resources, the mortality and the morbidity associated with such diverse presentation of the snake bite victims can be decreased by input of detailed history of the patient's socio-economic background, their habits and a thorough knowledge of the regional habitats and nature of the specific snakes of that region.

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ABSTRACT FINAL ID: OS21-C;

TITLE: Nationwide Study To Improve Door-To-Balloon Times In Patients With Acute ST Elevation Myocardial Infarction Requiring Primary Percutaneous Coronary Intervention Using Prehospital ECG Transmission

ABSTRACT BODY:

Abstract Body: OBJECTIVES: To reduce door-to-balloon times (D2B) in patients with acute ST-elevation myocardial infarction (STEMI) requiring primary percutaneous coronary intervention (PCI), by adoption of pre-hospital 12-lead electrocardiogram (ECG) transmission by Singapore's national ambulance service. METHODS: A prospective, before-after, interventional study of STEMI patients who presented to the ambulance service. In the "Before" phase, chest pain patients received 12-lead ECGs on arrival at the Emergency Departments (ED). In the "After" phase, 12-lead ECGs were performed by ambulance crews and transmitted while patients were en-route to hospitals. All patients whose ECG showed ≥2mm ST elevation (STE) in anterior leads or ≥1mm STE in inferior leads for two or more contiguous leads and symptom onset <12 hours were eligible for activation of PCI. Primary outcome was D2B time; secondary outcome was occurrence of in-hospital adverse events after PCI. RESULTS: 2653 ECGs were transmitted by the ambulance service in the "After" phase; 12.3% were STEMI. 156 of these patients met the inclusion criteria for analysis, while 451 patients from "Before" phase were eligible. Median D2B time was 88 minutes in the "Before" and 51 minutes in the "After" phase (p= 0.0001). Subgroup analysis showed that median D2B times were significantly reduced regardless of presentation during or after office-hours. Hospitals with direct EP activation had D2B times of less than 60 minutes in the "After" phase. No significance was found with regard to adverse events, as occurrence of adverse events was low. CONCLUSIONS: Pre-hospital ECG transmission resulted in significant reduction of D2B time, regardless of time of presentation. Pre-hospital ECG transmission should be adopted as "standard of care" for STEMI cases requiring PCI.

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ABSTRACT FINAL ID: OS21-D;

TITLE: Identification of the Adult Septic Patient in the Pre-Hospital Setting: A Comparison of Two Screening Tools and Clinical Judgment

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Sepsis is common and has a high mortality. Despite knowledge of the importance of immediate care and treatment, it is often delayed. Pre-hospital identification of sepsis has been shown to halve the time to in-hospital treatment. In addition, more than half the patients with severe sepsis are initially transported by emergency medical services (EMS). Thus, the pre-hospital setting constitutes an important opportunity for early identification and care of septic patients. Our objective was to compare two pre-hospital sepsis screening tools; the tool as published by Robson et al., and BAS 90-30-90, a Swedish model in clinical use, and clinical judgment. METHODS: Design: Retrospective cross-sectional study. Setting: Pre-hospital. Patients: 350 adult patients with the hospital discharge ICD code of sepsis transported by the EMS during the period of January 2007 and May 2008. Interventions: None. Measurements: The modified Robson screening tool includes temperature, heart rate, respiratory rate, acutely altered mental status, glucose and a history suggestive of a new infection. BAS 90-30-90 refers to the vital signs of saturation, respiratory rate and systolic blood pressure. RESULTS: The modified Robson screening tool had a sensitivity of 70 % (16 of 23 patients[a], p=0.001[b]). BAS 90-30-90 had a sensitivity of 43% (75 of 174 patients[a] , p <0.001[b]) when fulfillment of one parameter was required. EMS personnel suspected sepsis in 13% (44 of 350 patients) when based on clinical judgment alone. CONCLUSION: The modified Robson screening tool had a higher sensitivity than both BAS 90-30-90 and clinical judgment. The sensitivity of 70% for the Robson screening tool may be too low to advocate its implementation in the pre-hospital setting. It is, however, a tool which is simple to use. These results need to be confirmed in larger prospective studies.

[a] for whom all parameters were documented

[b] compared with clinical judgment

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ABSTRACT FINAL ID: OS21-E;

TITLE: Use of the Valsalva Manoeuvre to Manage Supraventricular Tachycardia in the Prehospital Setting: A Retrospective Case Study Review of Effectiveness.

ABSTRACT BODY:

Abstract Body: OBJECTIVES: Recent studies have identified an evidence-based model of Valsalva Manoeuvre (VM) performance. As this model is integrated into practice, the use of the VM for supraventricular tachycardia (SVT) management is yet to be assessed for effectiveness in the pre-hospital clinical setting. This study sought to identify the effectiveness of the VM in reverting SVT in the pre-hospital setting by MICA paramedics in Melbourne, Australia. This study also sought to quantify other patient factors which may impact upon reversion success, the effectiveness of a symptom-based computerised dispatch system (AMPDS), and basic epidemiological data. METHODS: A retrospective case review utilising data from the Victorian Ambulance Computerised Information System (VACIS) database between November 2006 and November 2007. Inclusion criteria were patients presenting with SVT in the pre-hospital setting, managed by MICA paramedics. Exclusion criteria were rhythms other than SVT identified before or during paramedic intervention. RESULTS: The study examined 253 cases, patient age ranged from 11-98 years, mean age was 56 years (CI 53.7 to 58.4), median age was 57. Primary dispatch was “chest pain” (50.2%), and “Heart problems/cardiovascular problems” (23.2%). A single VM attempt in 62.5% of cases, with a maximum seven attempts was noted. Mean time from ambulance call to VM attempt was 27.73 minutes (CI 26.17 to 29.29), with no statistically significant difference identified by age, gender, cardiac history, SVT history, or current medications. The VM reversion success was 23.2%. Through identification of the three major symptoms, AMPDS responded appropriately to 87.7% of cases. CONCLUSIONS: This study has identified current VM reversion rates comparable to the emergency medicine studies. The results also suggest VM reversion from SVT is unaffected by gender, age, cardiac history, previous episodes of SVT, or cardiac medication. A baseline for further studies of pre-hospital VM effectiveness is established within this pilot study.

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ABSTRACT FINAL ID: OS21-F;

TITLE: EKG Characteristics of EMS Identified STEMI Patients that do not Undergo Cardiac Catheterization

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Current guidelines recommend that patients with chest pain and EKG findings consistent with a ST segment elevation myocardial infarction (STEMI) or new onset left bundle branch block (LBBB) receive fibrinolytics within 30 minutes of arrival or percutaneous coronary intervention (PCI) within 90 minutes of arrival. New York City Emergency Medical Service has guidelines for potential STEMI patients to be transported to designated cardiac catheterization (CC) centers. In our hospital a total of 51% of these patients go for CC, roughly 29% emergently and 23% after admission. We sought to determine the EKG findings on those patients that never went for CC. METHODS: A retrospective chart review of all 205 STEMI notifications presenting to a CC center between 11/27/07 and 7/4/10 was performed. The initial EKGs were analyzed independently by two emergency physicians and one cardiologist that were blinded to the patient's outcomes. RESULTS: The average age for the 205 patients was 65 years and 60% were male. A total of 100/205 (49%) patients never went for CC, with 95/100 not having an initial EKG consistent with STEMI. Of the remaining 5 patients with a STEMI EKG who did not have a CC, 1 died shortly after arrival, 3 did not go for CC because of co-morbidities and or family wishes, and the last patient had negative cardiac markers. The most common EKG findings in the 95 non-STEMI patients was a LBBB which was seen in 33/95(35%) of cases. Other EKG findings included age-indeterminate MIs 21%; left ventricular hypertrophy with repolarization abnormalities 17%; normal EKG or J point elevation 11%; and either non specific ST changes or T wave inversion 12%. In addition 5% had a paced rhythm and 3% had complete heart block further making the diagnosis of STEMI challenging. CONCLUSION: About half of STEMI notifications presenting to an ED did not have a CC during the hospitalization. These patients almost always had other EKG abnormalities or a LBBB that obscured the identification of STEMI. Assuming LBBB transport guidelines are not revised; further decreases in non-STEMI transports to a CC center would be difficult in the pre-hospital setting.

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ABSTRACT FINAL ID: OS21-G;

TITLE: A Novel Approach to the Transportation of Warmed Fluids in the Prehospital Environment

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The choice and amount of fluid used in prehospital resuscitation remains an area of debate. There is however good evidence from the in-hospital setting that fluid should be warmed to avoid hypothermia and hypothermia induced coagulopathy - two sides of the so called “lethal triad” of hypothermia, acidosis and coagulopathy. In the prehospital environment, keeping fluids warm can be challenging. Land and air ambulances can be fitted with electrical fluid warmers but these are expensive as well as being relatively heavy and space consuming. They are also generally fixed to the transport mode and cannot be taken directly to the patient, for instance an entrapped road vehicle collision patient. Our aim was to ascertain if a novel method of fluid packaging reduces the rate of cooling of pre-warmed fluid in a simulated prehospital environment. METHODS: Laboratory based experiment. 500 ml bag of normal saline was pre-heated to 40°C before being allowed to cool in three controlled conditions: 1) Standard prehospital response bag; 2) Neoprene pouch in prehospital response bag; 3) Neoprene pouch with activated chemical hot pack in prehospital response bag. The primary outcome measure was temperature of fluid at 30 minutes. The temperature of the fluid was measured at half hourly intervals over a period of two and a half hours. The ambient room temperature was also recorded. RESULTS: The mean temperature of the fluid at 30 minutes in the three conditions was: 1) 36.8 (95%CI 35.7-37.9), 2) 37.6 (95% CI 37.3-37.8), 3) 39.7 (95% CI 38.5-40.9). CONCLUSION: The neoprene pouch with the activated chemical hot pack contained within the prehospital response bag showed superior insulation properties to other methods and reduced the rate of fluid cooling over an extended time. This method offers a light weight, low cost and evidence based solution reducing the rate of cooling and enabling delivery of warm fluids to the patient in the prehospital environment. Following this laboratory based work, a feasibility test in a working prehospital environment is planned.

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ABSTRACT FINAL ID: OS22-A;

TITLE: Can X-rays be Prescribed by a Nurse in an Emergency Department?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The long wait that patients endure in the Emergency Department (ED) is a recurrent problem. In order to save time, we wondered if the prescription for X-rays can be made by the Triage Nurse before the medical examination. METHODS: Our ED receives about 53,000 patients per year (2/3 for traumatic injuries). This experimental trial protocol was conducted over one month after training of the Triage Nurses and specific procedure instructions. Inclusion criteria included: any isolated limb trauma injury less than 24 hours old, without signs of severe illness. No age criteria limitation was set. As the time necessary to go through the ED is also related to the momentary influx of patients and the practitioners' experience, patients were alternately divided into two groups: in the 1st group X-rays were prescribed by the Triage Nurse and in the 2nd group patients followed the usual procedure. RESULTS: 155 patients were enrolled in the study. Group 1 Patients following the new procedure: 75; Group 2 Patients following traditional procedure: 80. Average age was 33 years, and median age was 26 years. Sex ratio: 48% women, 52% men and within the two groups the age and sex distributions were comparable. For Group 1, the delay between patient admission and the X-ray prescription was 5 min. (Group 2, 77 min.). For Group 1, the time from patient arrival to the ED and their departure was 97 min. (Group 2, 161 min.). For Groups 1 & 2,the delay for X-rays to be accomplished was comparable, 17 and 15 min. respectively. In Group 1, the MD requested further X-rays for 2 patients and for 2 patients the X-rays requested by the Triage Nurse were judged not necessary by the MD. CONCLUSION: In Group 1, the total time in the ED was considerably reduced (about one hour less!) thanks to the early realization of X-rays and at a price of prescription errors that seems totally acceptable. In ordinary limb trauma (without traumatic shock), the indications and incidence of X-rays is often easy to prescribe; this prescription, however medical, seems totally within the reach of a Triage Nurse and allows for the patient and MD to economize precious time. In conclusion, this experience seems positive and continues today in our ED.

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ABSTRACT FINAL ID: OS22-B;

TITLE: What is the Sensitivity of the Lodox® Statscan in Detecting Cervical Spine Injury Bony Injuries in Trauma patients

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The Statscan is a relatively new imaging modality and is a full body x-ray with less radiation than traditional radiographs. This is a study to assess the sensitivity of the Lodox® Statscan in detecting cervical spine injuries in trauma patients. Previous studies have given X-rays a sensitivity of 45-60%. Our hypothesis is that the Statscan is equally sensitive to the x-rays making them redundant. METHODS: This is a retrospective study of consecutive patients who presented to Rashid Hospital Trauma Centre during a period of fifteen months: January 2008 to March 2009. All patients with a cervical spine bony injury detected on CT and who had also had a Statscan on the same admission were included. RESULTS: 70 patients met the inclusion criteria. Statscan detected only 19 of 70 (27%) patients with C spine injury. It was negative for the remaining patients (73%) but recommended CT for 2 of this group. Statscan detected 22 of the total 147 (15%) fractures. It was not better at detecting any particular type of fracture. CONCLUSION: The Lodox® Statscan is not sensitive in detecting C spine bony injuries and should not be used as a screening tool. Plain x-rays should continue to be ordered in cases of suspected cervical spine injuries.

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ABSTRACT FINAL ID: OS22-C;

TITLE: The Efficacy of Ankaferd Blood Stopper in Heparin-Induced Hemostatic Abnormality in a Rat Anterior Epistaxis Model

ABSTRACT BODY:

Abstract Body: OBJECTIVE: To assess the in-vivo hemostatic effect of Ankaferd Blood Stopper (ABS). METHODS: Study Design: An experimental study of an animal anterior epistaxis model. Setting: A tertiary care university hospital. Subjects and Protocol: Wistar rats were randomized into four groups of seven each: group 1, control, no pretreatment, irrigated with saline; group 2, no pretreatment, irrigated with ABS; group 3, control, heparin pretreatment, irrigated with saline; and group 4, heparin pretreatment, irrigated with ABS. In all groups, a standardized rat epistaxis model was obtained by cutting the anterior nasal septal mucosa. To control bleeding, compressive dressings were placed after instilling 1 ml of either ABS or saline to the bleeding area. The hemostasis time and amount of nasal bleeding were measured in all groups to compare the treatments without and with ABS. RESULTS: In the non-heparin-pretreated groups (groups 1 and 2), ABS administration shortened the hemostasis time following nasal bleeding by 1.57 min or 62.1% (95% confidence interval <CI> 0.84–2.30 min) from the original time of 4.14 min (95% CI 3.02–5.27; P = 0.003). With the heparin pretreatment (groups 3 and 4), ABS shortened the hemostasis time following nasal bleeding by 2.86 min or 63.6% (95% CI 2.03–3.69) from the initial 7.86 min (95% CI 6.61–9.10; P = 0.002; Table 1, Figure 1). With the heparin pretreatment (groups 3 and 4), ABS decreased the amount of nasal bleeding by 0.49 g or 43.7% (95% CI 0.39–0.58) from the initial 0.67 g (95% CI 0.77–0.96; P = 0.002; Table 1). CONCLUSION: ABS irrigation was more effective that saline irrigation for treating anterior epistaxis hemostasis in animals using a compressive dressing with or without heparin pretreatment.

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ABSTRACT FINAL ID: OS22-D;

TITLE: A New Parameter for the Diagnosis of Hemorrhagic Shock: Jugular Index

ABSTRACT BODY:

Abstract Body: OBJECTIVE: To investigate whether or not there are any significant changes in the diameter and the area of the internal jugular vein (IJV) during the hemorrhagic shock. METHODS: 35 healthy volunteers donating blood were included in the study. Arterial blood pressure, pulse rate, antero-posterior and transverse diameter and area measurements of the jugular vein during inspiration and expiration were performed on the volunteers before 450 cc of blood donation. The measurements were repeated following the blood donation. RESULTS: A total of 35 volunteers, 31 men and 4 women, were enrolled in the study. The mean age was 33±9.73. The systolic blood pressure and pulse rate before and after hemorrhage were within normal ranges. The IJV pre-hemorrhagic antero-posterior diameter during inspiration and expiration were 4.9±2.2 and 7.9±3.1 mm and the post-hemorrhagic values were 2.7±1.6 and 6.6±3.1 mm (respectively, $p<0.001$ and $p=0.007$). The jugular index-ap was 36±15% prior to hemorrhage and 58±17% following hemorrhage ($p<0.001$). The IJV area during inspiration and expiration were 0.40 ±0.28 and 0.81±0.51 cm2 before hemorrhage, and were 0.14±0.15 and 0.61±0.47 cm2 after hemorrhage (for both, $p<0.001$). The jugular index-area was found as 47.48±18.1% prior to hemorrhage and as 73.5±18% following hemorrhage ($p<0.001$). CONCLUSIONS: Measurement of the jugular vein diameter is a readily learnt and non-invasive technique that can be applied at the bedside. We believe that measurement of the jugular vein and the jugular index is a reliable indicator of class 1 hemorrhagic shock and that it may be used as a part of FAST in clinical practice.

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ABSTRACT FINAL ID: OS22-E;

TITLE: Prospective Correlation of Arterial vs. Venous Blood Gas Measurements in Trauma Patients

ABSTRACT BODY:

Abstract Body: OBJECTIVE: To assess whether venous blood bas (VBG) results (pH and base excess (BE)) are numerically similar to arterial blood gas (ABG) results in acutely-ill trauma patients. METHODS: Prospective correlation of paired, adult trauma patient, ABG and VBG results (pH and BE) from January through September, 2006. Patients were included if an ABG was clinically indicated. An a priori consensus threshold of clinical equivalency was set at +/- <= 0.05 pH units and a delta BE <= 2. RESULTS: Samples were collected on 385 patients. Excluding those with incomplete time or blood gas data and those with sample delays, we analyzed 346 patients (25.6% of trauma activation patients). Mean arterial pH was 7.39 and mean venous pH was 7.35 in the derivation set. In the derivation set, 72% of the paired sample pH values fell within the pre-defined consensus threshold of +/-0.05 pH units, while the 95% limits of agreement (LOA) were twice as wide, at -0.10 to 0.11 pH units. For the derivation set, mean arterial BE was -2.2 and venous base excess was -1.9. 80% of the paired BE values fell within the predefined +/- 2 BE units, while the 95% LOA were again more than twice as wide, at -4.4 to 3.9 BE units. Based on the logistic regression equation from the derivation set, the venous pH values in the validation data set predicted ABG pH values better for subjects with a normal or positive BE than for more severely injured patients with a negative BE. CONCLUSION: While VBG results do correlate well with ABG results, only 72-80% of paired samples are clinically equivalent, and the 95% LOAs are unacceptably wide. Therefore, ABG samples should be obtained for the management of acutely-ill trauma patients if accurate acid-base status is required. Reliance on VBG samples to predict arterial pH and BE cannot be justified.

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ABSTRACT FINAL ID: OS22-F;

TITLE: Systematic Review Comparison of Shoulder Reduction Techniques

ABSTRACT BODY:

Abstract Body: OBJECTIVE: A large number of closed reduction techniques for shoulder dislocations have been published. We systematically reviewed the medical literature comparing closed shoulder reduction techniques. METHODS: We searched OVID and EMBASE databases for randomized controlled trials from 1965 through 11/2010 using a search strategy from the following PICO formulation of our clinical question: Patients: Patients (18+ years) with anterior shoulder dislocations. Intervention: Novel closed reduction techniques. Comparator: Traditional closed reduction techniques. Inclusion Criteria: Prospective randomized comparison of closed shoulder reduction techniques. Exclusion: Observational studies without a contemporaneous comparison technique. Qualitative methods were used to summarize the study results. Analysis: Success rate was calculated by shoulder reduction on the first attempt. Risk Ratios between reduction techniques were compared using a Forest Plot (95% CI) RESULTS: Our search found 1,196 articles of which 1,115 were excluded based on title and abstract, 58 were removed because of case reports or review articles and 21 were removed for lack of a comparator technique, 2 studies, met inclusion exclusion criteria. One study compared Kocher to Milch techniques and the second compared Kocher to the Hippocratic and FARES (Fast Safe and Reliable) techniques. Since different interventions were used with different levels of operator expertise a pooled relative risk was not calculated. Success rates comparing Kocher 72% (95% CI, 60% to 83%) to Milch 70% (95% CI, 57% to 80%) were not statistically significant (p=0.89). RR = 0.96 (95% CI, 0.76-1.21.). FARES (89% 95% CI, 77% to 94%) had a statistically significant (p=0.03) higher success rate compared to Hippocratic 73% (95% CI 59% to 83%) and Kocher 68% (95% CI, 54% to 79%). FARES Vs. Kocher RR= 1.3 (95% CI, 1.05 – 1.61) Milch Vs. Kocher RR= 1.01 (95% CI, 0.83-1.57) CONCLUSION: We only found 2 high quality studies of shoulder reduction techniques with only a single study showing a novel technique (FARES) superior to Kocher or Hippocratic techniques.

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ABSTRACT FINAL ID: OS22-G;

TITLE: Emergency Department Process Improvement Associated with Trauma Center Designation in a New Trauma System

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Multisystem trauma is a time sensitive condition; therefore efficiency improvements in the system of care have been associated with improvements in outcome. The state of Arkansas in the U.S. recently formed a new trauma system. The purpose of this study was to evaluate the effects of process improvement associated with a children's hospitals efforts to be designated as a level 1 pediatric trauma center. METHODS: Using the established trauma registry of the hospital, a variety of mean time intervals for important processes were calculated for the 1 year period before designation and for the 1 year period after designation. RESULTS: For all admitted trauma patients who required going directly from the emergency department (ED) to the operating room (OR), time was reduced from 2.8 to 2.1 hours. For level 1 activation patients who went directly from ER to OR, time was reduced from 78 to 60 minutes. For all admitted patients who went to the intensive care unit, time in the ED was reduced from 2.9 hours to 1.4 hours. For level 1 activation patients, time from ED to ICU was reduced from 120 minutes to 66 minutes. In the before designation period, time from physician order to image acquisition for plain radiographs was 32 minutes vs. 15 minutes for level 1 and 16 minutes for level 2 activations after designation. Likewise, time from order to image acquisition for CT scans was 32 minutes before and 14 minutes after for level 1 activations. CONCLUSIONS: Shorter times for key intervals resulted from the process of preparing for trauma center designation. A series of team training sessions as well as regular monitoring of key time intervals were likely to be responsible for these improvements.

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ABSTRACT FINAL ID: OS23-A;

TITLE: Rectus Sheath Hematoma: When to Proceed with Operative Treatment?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Rectus sheath hematoma (RSH) is an uncommon condition caused by hemorrhage into the rectus sheath due to damage to the superior or inferior epigastric arteries or their branches or by direct damage to the rectus muscle. RSH can be relatively benign or can be life threatening. Treatment is mostly supportive but in cases with hemodynamic compromise there may be a need for intravascular embolization or surgery. Nevertheless, operative treatment may be so late and the bleeding so imposing as to result in the patient's death. We performed a retrospective study on patients with RSH in order to identify possible prognostic risk factors that can address the operational approach before the onset of hemodynamic instability. METHODS: Seventy-eight patients admitted to the general surgery unit and diagnosed with RSH between January 2000 and December 2010. Demographic characteristics, patients' history, laboratory and imaging studies were investigated. The variables considered were: gender, age, anticoagulant or antiplatelet therapy, trauma, INR, bleeding time in the first 72 hours of observation. The data were used for statistical analysis. RESULTS: Sixty patients (range 44 – 82 yrs.; mean age 69.9 yrs.) received a conservative treatment while eighteen (range 72 – 88 yrs.; mean age 79.2 yrs.) underwent operative treatment for hemodynamic instability (embolization in 2 patients and surgery in 16 patients); 3/18 died (17%) from consumption coagulopathy after surgery. None of the variables included in univariate analysis was statistically significant (p= n.s.). CONCLUSION: Our retrospective study doesn't identify prognostic risk factors that might lead to early operative treatment that advances the hemodynamic instability or may determine the time course of the hematoma. Therefore we believe that only close clinical observation, monitoring TC and "common sense" can prevent a possible fatal outcome of the patients with RSH.

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ABSTRACT FINAL ID: OS23-B;

TITLE: Differential Impact of Alcohol Abuse Patterns on Host Inflammatory Response to Traumatic Injury

ABSTRACT BODY:

Abstract Body: OBJECTIVE: More than 25% of traumatic injuries (TI) treated in emergency departments are alcohol (EtOH) related. Long-term morbidity and mortality in this population is higher than non-EtOH TI victims. The contribution of acute EtOH vs. chronic EtOH abuse to outcome, particularly as it impacts immune responses to inflammatory challenges, is unclear. Our purpose was to differentiate the impact of acute vs. chronic EtOH abuse on integrity of host response to inflammatory challenge during the early post-TI period. METHODS: 26 patients meeting trauma activation criteria were enrolled at a Level 1 urban teaching hospital. Alcohol Use Disorders Identification Test (AUDIT) scores and injury severity score (ISS) were calculated and blood samples were obtained on arrival and at post-admission days 1 and 5 for blood alcohol level (BAL), cytokine determinations and cytokine response to lipopolysaccharide (1 ug/ml x 4 h) stimulation. Correlations were calculated using Pearson's correlation coefficient. RESULTS: 27% were acutely intoxicated. Mean AUDIT score was 11 for BAL positive (BALP) subjects, 5.7 for BAL negative (BALN) subjects, and 7.9 overall (range 1-33). The difference between the means for AUDIT was not statistically significant (p= 0.168). Mean ISS was 7.4 for BALP, 16.5 for BALN, and 12 overall (range 1-24). The difference between the means for ISS was statistically significant (p= 0.006). Plasma cytokine concentrations, AUDIT and ISS did not correlate with BAL. Stimulated cytokine response did not correlate with BAL or ISS, but showed significant positive correlation with AUDIT. (IL-1 r= 0.81, p=0.028; IL-6 r= 0.75, p=0.05; GM-CSF r= 0.89, p=0.011; TNF r= 0.72, p=0.069). CONCLUSION: Self-reported chronic EtOH abuse has greater impact on dysregulation of host response to inflammatory challenge than prevailing EtOH levels reflecting acute EtOH abuse in TI victims. Findings suggest that chronic EtOH abuse plays a more important role than acute intoxication in dysregulation of host response and should be taken into account when stratifying risk for secondary infection in trauma patients.

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ABSTRACT FINAL ID: OS23-C;

TITLE: Is Bedside Ultrasound Superior to Supine Anteroposterior Chest Radiography for the Identification of Pneumothorax after Blunt Trauma?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Systematic review of imaging for pneumothorax. METHODS: P: Adult ED patients in whom pneumothorax is suspected after blunt trauma; I: Thoracic ultrasonography (performed by an EP) C: AP chest radiography; O: Diagnostic performance of US in identifying the presence of pneumothorax. Search strategy - Pubmed Medline with search terms: "Pneumothorax/ultrasonography"[Mesh] AND “radiography, thoracic”[Mesh]. RESULTS: 16 papers; 1 useful systematic review[5]. 3 relevant papers[1,2,4]. 1 additional useful article[3] was found using only the search term “Pneumothorax/ultrasonography"[Mesh] (116 hits). CONCLUSION: EP performed bedside ultrasound demonstrates superior sensitivity and similar specificity compared to supine AP chest radiography, for the identification of pneumothorax in adults suffering blunt trauma. The literature search was limited to the detection of pneumothorax in adult blunt trauma patients. The diagnostic performance of US for the detection of other significant chest injuries was not studied. Other limitations are the relatively small groups, the lack of interobserver agreement assessment and the nonrandomized design. Given these limitations, there is insufficient data to suggest that bedside US examinations should replace the supine AP chest radiograph or CT in the initial management of patients suffering blunt thoracic trauma. Level of recommendation: Grade B; OCEBM. References: 1. Blaivas M. A prospective comparison of supine chest radiography and bedside ultrasound for the diagnosis of traumatic pneumothorax. Acad Emerg Med. 2005;12. 2. Soldati G. The ultrasonographic deep sulcus sign in traumatic pneumothorax. Ultrasound Med Biol. 2006;32. 3. Zhang M. Rapid Detection of Pneumothorax by Ultrasound in Patients with Multiple Trauma. Crit Care. 2006;10. 4. Soldati G. Occult Traumatic Pneumothorax: Diagnostic Accuracy of Lung Ultrasonography in the Emergency Department. Chest. 2008;133. 5. Wilkerson RG. Sensitivity of bedside ultrasound and supine anteroposterior chest radiographs for the identification of pneumothorax after blunt trauma. Acad Emerg Med. 2010 Jan;17(1)

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ABSTRACT FINAL ID: OS23-D;

TITLE: The Relation between Acceptance SOD levels in Patients with Multi-trauma and GCS, ISS and TS

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The aim of this study is to investigate the relation between Superoxide Dismutase (SOD) levels (which was measured when patients are accepted) and Glasgow Coma Score (GCS), Injury Severity Score (ISS) and Trauma Score (TS) of the patients who apply to emergency service with multisystem trauma. METHODS: The subjects of this study were patients with multi-trauma. For each of them GCS, ISS and TS were calculated. SOD activity in the blood samples taken at acceptance was examined. To compare data Mann-Whitney U test and chi square test was used. $p \leq 0.05$ was taken as significance level. RESULTS: The study included a total of 27 patients. Mean age of the patients was 22.1±17.5 (min. 2-max. 56). Eleven of the patients were female (mean age 25.3), 16 were male (mean age 22.7). Seven of the patients had 2 system injuries, 20 had 3 or more system injuries. We found that mean GCS of the patients was 6.6±3.2 (min. 3-max. 15), ISS was 28.8±16 (min.10-max.66) and TS was 4.6±1.2 (min. 2-max. 7). The mean SOD activity of the patients was found to be 3515 (min. 2052-max. 5586) Ug/Hb. We found a significant relation between SOD activity and GCS ($p=0.026$). No significant relation or correlation was found between SOD activity and ISS and TS. However, there was a significant negative correlation between SOD activity and GCS ($r=-273$). In the patients who were determined to have three or more systemic traumatic injuries, mean GCS 9.9±4.3, ISS 15.5±5.2, TS 5.7±1.2 and mean SOD value was 4820. In patients with traumatic involvement in two systems, mean GCS was 5.6±2, ISS 32.9±16.5, TS 4.3 ±1 and their mean SOD activity was 3409. There was a significant difference between GCS values and SOD activities of these two groups (p value was 0.038 and 0.036, respectively). CONCLUSION: There is a relation between GCS and SOD in multi-trauma patients. In these patients, SOD activity decreases as the number of the systems affected is increased. If the number of the systems affected is 3 or more and if the Central Neural System is among the affected systems, the SOD activity decreases significantly.

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ABSTRACT FINAL ID: OS23-E;

TITLE: Evaluation of Pittsburgh Criteria for X-ray Necessity in Patients with Ankle Trauma in Emergency Department

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The Pittsburgh decision rule is the latest guideline for the selective use of radiographs in knee trauma. Application of this rule may lead to a more efficient evaluation of knee injuries and a reduction in health costs without an increase in adverse outcomes. But this method did not evaluate for ankle trauma until now. The purpose of this study was to determine diagnostic evaluation of Pittsburgh criteria for diagnosing of ankle trauma. METHODS: We performed a case-control study of all patients who presented with ankle trauma to emergency department of Imam Reza and Shohada university hospital from Oct 2007 through April 2008. We used the Pittsburgh decision rule to evaluate ankle trauma and patients were classified in 2 groups by these criteria. Each patient was evaluated by 3 views (AP, lateral and stress view). The relationship between Pittsburgh findings and films status was assessed via chi-square test. The level of significance was set at $p<0.05$. RESULTS: Of the 200 patients in this study, 102 patients who can walk four weight-bearing steps, have normal and 4 of them have abnormal finding in film. Among patients that cannot perform the test, 64 cases have normal and 30 cases have abnormalities in film ($P=0.001$). 4 patients excluded because of missed fallow up. There was significant correlation between stress view and walking four weight-bearing steps too ($P=0.001$). CONCLUSION: Application of The Pittsburgh decision rule at emergency department may lead to a more efficient evaluation of ankle injuries, decrease patient exposure to radiation and reduction in health costs.

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ABSTRACT FINAL ID: OS23-F;

TITLE: Is There Something Different in HDU Elderly Trauma Patients?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: In a group of patients admitted in a High Dependency Unit (HDU) from the Emergency Department (ED) for trauma, we evaluated the presence of unique characteristics of patients aged ≥65 years (G1), with comparison to younger subjects (G2). METHODS: Study cohort included consecutive trauma patients presenting to the HDU from July 2008 to December 2010. Data to compute Injury Severity Score (ISS), presence of comorbidity and relevant clinical and laboratory variables were collected at ED (T0) and during the first 24 hours of HDU stay (T1). RESULTS: We enrolled 204 patients including 73 subjects aged ≥65 years. Major mechanism of injury was less frequent in G1 subjects (49% in G1 vs 81% in G2, p<0.0001); severe trauma (ISS>15) occurred in a similar proportion of patients (25% in G1 and 21% in G2, p=NS). Clinical characteristics of the study population are shown in Table 1; elderly people, in presence of a comparable trauma severity, expressed by a similar ISS, had a worse SOFA and APACHE II score. The rate of home-discharge from the HDU was significantly lower in G1 (15% in G1 and 39% in G2, p=0.001); 54 G1 patients were transferred to a ordinary ward and 7 to an ICU. Hospital length of stay (LOS) was significantly longer in G1 subjects (15±18 in G1 vs 8±8 days in G2, p<0.0001); considering only head trauma patients, given the absence of significant difference in GCS both at ED admittance and in HDU, LOS was significantly longer in G1 (20.0±24.5 in G1 vs 9±9 days in G2, p<0.035). In thoracic trauma patients, in presence of a similar thoracic AISS (9±4 in G1 vs 9±5 in G2, p=NS), G1 LOS was significantly higher (16±14 in G1 vs 9±8 days in G2, p<0.001). G1 admitted patients showed a significantly higher ISS (14±11 in admitted vs 5±7 in discharged patients, p=0.013), without any other significant difference. None of our patients died during the HDU-stay; we observed only three in-hospital deaths, all in G1. CONCLUSION: Aged trauma patients admitted in HDU, despite a similar trauma severity, show worse prognostic scores and significantly longer hospital length of stay.

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ABSTRACT FINAL ID: OS23-G;

TITLE: Retrospective Analysis of Cervical Spine Radiography in a Tertiary Head Injury Centre

ABSTRACT BODY:

Abstract Body: OBJECTIVE The EAST (Eastern Association for the Surgery of Trauma) guidelines define adequate radiography of the cervical spine. Previous studies looking at emergency department cervical spine radiographs have found a significant proportion to be inadequate. Our objectives were to ascertain the adequacy of cervical spine imaging on trauma patients in a major London tertiary referral centre and to compare local reporting of cervical spine radiographs to the gold standard EAST guidelines. METHODS: Data was examined from 100 consecutive patients. We applied the EAST criteria retrospectively to all cervical spine radiology undertaken in this cohort of patients to define adequate or inadequate films. We assessed the performance of local radiology reporting. RESULTS: 99% of patients undergoing a full trauma series had at least one inadequate initial image. Of these, 85% had at least one inadequate lateral or peg view. 74% with inadequate initial lateral or peg views had repeats performed. Only 23% of all inadequate initial and repeat lateral or peg views were explicitly reported as inadequate on the radiology report. In total 36% of all trauma patients left the emergency department with inadequate cervical spine imaging (no full trauma series or no repeat after an inadequate film). CONCLUSION: Inadequate radiography of the cervical spine is common in trauma. Over one third of trauma patients may not receive adequate imaging of their cervical spine; these findings suggest that there is significant process variability, which is compounded by the heterogamous population. We offer solutions.

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ABSTRACT FINAL ID: OS24-A;

TITLE: Etoricoxib Prevents 'First of Ramadan Headache'

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Religious fasting is associated with headache. This has been documented as ‘First of Ramadan Headache’ and ‘Yom Kippur Headache.’ Rofecoxib(Vioxx®) and etoricoxib, both Cox-2 inhibitors with 17 and 22 hour half-lives respectively, have been shown to be effective in preventing fasting headache when taken just prior to the 25 hour Yom Kippur fast. Rofecoxib is no longer available. We hypothesized that etoricoxib would also be effective in preventing fasting headache during the dawn to dusk Ramadan fast. METHODS: We performed a double-blind, randomized, prospective cross-over trial of Etoricoxib 90mg vs placebo, taken just prior to the onset of fasting, during the first two weeks of Ramadan in August 2010. Healthy adults aged 18 – 65 were enrolled from the community. Each subject received 6 days of drug and six days of placebo in a blinded fashion, with a two-day placebo ‘washout period’ in between. Subjects completed a demographic data form and questions regarding headache history and a post-fast ‘headache diary’ during the fast. We compared incidence, time of onset and intensity of headache, general ease of fasting and side effects in control and treatment groups. RESULTS: We enrolled 220 patients and 188 completed the post fast questionnaire (85%). On day one of the fast, of those subjects receiving etoricoxib (n=96), 20 or 20.8% vs 42 or 45.7 % of the placebo group (n=92) developed any headache during the fast (p=0.001). On day two of the fast, 17.3% taking medication vs 30.8% of the placebo group developed headache (p=0.05). In subsequent fast days fewer subjects got headache in the drug vs placebo groups, but this generally did not reach statistical significance, as the incidence in the placebo group fell to below 25%. CONCLUSION: Etoricoxib 90mg taken prior to Ramadan fasting ritual fast decreases incidence of headache, most prominently in the first two days of the month-long fast. It appears that the incidence of fasting headache decreases as the month progresses.

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ABSTRACT FINAL ID: OS24-B;

TITLE: Computerized Alcohol Screening and Intervention (CASI)

ABSTRACT BODY:

Abstract Body: OBJECTIVE: In 2007, an estimated 19.3 million individuals age 12 or older required treatment for alcohol in the United States (DHHS, 2009). Of these, 84.7% had no perception of the need for treatment and therefore accepted no care. Statistically alcohol related deaths approximate 79,000; 1.6 million hospitalizations, four million ED visits, and remains the third leading cause of life-style related mortalities (CDC, 2010). Additionally, alcohol contributes to the death and injury of many more Americans due to cardiovascular disease, cirrhosis, motor vehicle crashes, falls, drowning, and mental health disorders (ENA, 2009). In 2006, the American College of Surgeons Committee on Trauma mandated that Level I and Level II trauma centers use the teachable moments resulting from a traumatic injury to implement prevention strategies. The Emergency Nurses Association published a position statement advocating for (Alcohol Screening, Brief Interventions, and Referral to Treatment) in EDs (ENA, 2009). METHODS: CASI is currently used in a level I trauma center to assess a patient's level of drinking. Utilizing a CASI tablet, patients are asked questions about their drinking habits including the quantity and frequency of drinking to determine a status of "non drinker", "at risk" or "dependent". At risk patients have an intervention after determining their readiness to change. RESULTS: To date, 1093 patients have been screened using CASI. Patient percentages mirror those of prevalence estimates in the non-institutionalized populations of non-trauma patients (DHHS, 2007). Data indicates that 63% of those patients who screened "at risk" had blood alcohol levels less than 0.08%; under the legal limit for intoxication. Patients (30%) who screened as "dependent" also had blood alcohol levels less than 0.08%. Following the brief intervention, 42% of patients intended to change their behavior based on CASI recommendations. CONCLUSIONS: CASI offers some solutions for the public health of the American people. The potential exists for additional research and the possibility that other means of intervention are possible within emergency care settings.

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ABSTRACT FINAL ID: OS24-C;

TITLE: Necessity of an Integrated Road Traffic Injuries Surveillance System: A Community-based Study

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The prerequisite of improving the situation of traffic accidents and injury prevention is to set up a “Road Traffic Accident and Victim Information System (RTAVIS)” which does not exist in Iran. The objective of this study was to compare the three major sources of information including police, Emergency Medical Services (EMS) and hospitals to show the necessity of an integrated road traffic injury surveillance system. METHODS: This prospective cohort study has been performed by pursuing all road traffic accident (RTA) cases during one year (May 2008 to May 2009) within 30 days of their occurrence by a draft questionnaire and data pooling from participating sources. RESULTS: After pooling the data from all organizations, it was revealed that during one year, 245 road traffic accidents occurred in Tehran–Abali road (with a 45 Kilometer radius) in which 434 people were either injured or deceased. Out of these crash injuries, police and EMS stated to be unaware of 67 and 51 cases, respectively. In other words, police, pre-hospital emergency services and hospitals have reported 56.2%, 82.9% and 76.4% of the entire number of injuries or deaths respectively. CONCLUSION: None of the organizations investigated, that is police, EMS and health care facilities have complete records on injuries and deaths caused by traffic accidents. We recommend the formulating and implementing of an integrated and multidisciplinary data collection system of national traffic accidents with the collaboration of police, Ministry of Health and Medical Education (EMS and hospitals), forensic medicine, and the Iranian Red Crescent is necessary.

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ABSTRACT FINAL ID: OS24-D;

TITLE: The Evaluation of Train Accidents and Events in Turkey from 1999 to 2008

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The aim was to evaluate the train accidents and events which were registered by the Turkish State Railways. METHODS: In this descriptive study, the train accidents and events from 1999 to 2008 were investigated in June-July 2008. Descriptive statistics and Chi-square test were used. RESULTS: There were 7806 train accidents and events. The number of train accidents and events declined within years. They were more common in autumn (2170; 27.8%). More than one third (2491, 33.7%) occurred in the afternoon (12:00-17:59). The most frequent type were those that occurred at the railway and road junctions (1959, 26.0%). The collision of the train with a person was the second most frequent type (1455, 19.3%). The leading place of occurrence was the Istanbul-Haydarpasa Region (1860, 24.9%) (Figure 1). At the time of the accident and event, the average velocity, number of axle, and weight of the trains were 35.8±23.5 km/hour, 41.5±35.4, and 501.4±463.1 tons, respectively. The number of dead, severely injured, and slightly injured people were 1223, 1084, and 1137, respectively. The number of dead passengers, personnel, and other people were 98 (8%), 31 (2.5%) and 1094 (89.5%), respectively (Table 1). For the personnel who were blameworthy, the average age, years in that position, years in service, working hours at the time of the accident or event were 40.2±8,6, 11.0±7.2, 16.8±8.2, and 6.8±4.2, respectively. The trains with a weight equal to or below 320 tons; with a number of axles equal to or below 28; and with a speed of more than 30 km/hour had more accidents or events ($p<0.005$). The trains which were involved during night time, were heavier and had more axles. CONCLUSION: This study provided priority intervention areas to decrease train accidents and events in Turkey. The use of safety barriers along the railways, construction of underpasses and overpasses, having signals and automatically operating barriers at the junctions of roads and railways would be helpful. Giving regular breaks for the personnel or having shifts lasting no longer than 6 hours may have a positive effect on lowering the number train accidents and events.

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ABSTRACT FINAL ID: OS24-E;

TITLE: Heterogeneity in the Epidemic of Skin Infections

ABSTRACT BODY:

Abstract Body: OBJECTIVE: A decade-long rise in invasive methicillin-resistant Staphylococcus aureus (MRSA) infections in the U.S. has been paralleled by a rise in the frequency of ED visits for skin and soft tissue infections (SSTI). Previous studies have shown that warm climate, summer season, middle age, and lower socioeconomic status predicted an SSTI visit. We evaluated the hypothesis that the rise in visits has been more extreme in some subgroups. We also inspected the increase for evidence that the epidemic of ED visits for SSTI may be moderating, as has been reported for the rate of invasive MRSA infections. METHODS: Analysis of an annual, government-sponsored, nationally representative survey of ED visits in the United States from 1995 to 2008. We used a previously identified grouping of diagnostic codes to define SSTI, and collapsed data into two-year intervals in order to obtain reliable point estimates of SSTI visit frequency by time period. RESULTS: The annual number of ED visits for SSTI increased monotonically from 0.7 million in 1995-96 to 3.0 million in 2007-08, a 325 percent increase (95% CI 197 to 452) in the number of ED visits, a 154 percent increase in the proportion of all ED visits, and a 276 percent increase in the population based ED visit rate for SSTI. In multiple logistic regression with SSTI as an outcome there was significant heterogeneity ($p<0.005$), with higher trends in the West/South regions (vs. Northeast/Midwest), in patients aged 45-65 (vs. all others), and among ED visits with Medicaid/uninsured payer status (vs. all others). The figure compares temporal growth in visits between two subsets of visits. Visual inspection of both curves suggests an inflection point in 2005-2006, when the rate of rise began to decrease. CONCLUSION: The marked rise in ED encounters for skin infection in the U.S. has been more pronounced in warmer regions of the U.S., among persons with no insurance or with Medicaid only, and among persons between the ages of 45 and 65. There was no difference in the pace of the epidemic between warm and cold seasons. The initial rapid increase in ED visits for SSTI may be slowing.

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ABSTRACT FINAL ID: OS24-F;

TITLE: Influenza Vaccine Health Literacy and Attitudes Survey

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Influenza is a preventable disease, yet vaccination rates consistently fall below goals. This survey evaluated the knowledge of flu vaccine among various target groups. METHODS: A multicenter cross sectional survey study was conducted at Jacobi (NY), LSU (Louisiana), and Maricopa (Arizona) Medical Centers from 8/09-10/09. The survey instrument was designed by consensus of a team of physician experts. Physicians (MDs), nurses (RNs), ancillary staff (AS), patients and visitors (PV) were consented to participate. 125 surveys were collected from each site, 25 from each targeted group. Pearson's chi square test was used to assess the association between site and respondent category and subject's response to questions. A logistic regression model was used to model response to questions. A 5% significance level was maintained. RESULTS: Although MDs were most likely to get correct answers on 12 of the 13 fact based questions, many MDs and RNs answered basic questions incorrectly. 8.3% of MDs and 22.4% of RNs felt one could get flu from a flu shot. 11.9% of MDs and 32.9% RNs felt one could get a cold from the flu shot. 8.45% of MDs and 34.7% RNs felt pregnant women shouldn't get a flu shot. 6.34% of MDs and 9.46% RNS did not think one needs the flu shot every year to remain protected. MDs and RNs were far more likely to answer questions regarding the need for the elderly and their caregivers, the military and those with AIDS to get flu shots correctly. 50% of MDs answered true that school age children need to get a flu shot and 50% answered false. Yet 84% of PVs, 77.3% RNs, and 86.7% AS answered this question true. 70.2% of MDs and 48.7% of RNs received flu shots last year. CONCLUSION: This survey demonstrates that there is a role for enhanced education, even among health care workers, regarding the facts and benefits of flu vaccination. Correlation exists between adequacy of health literacy and likelihood of getting a flu vaccine.

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ABSTRACT FINAL ID: OS24-G;

TITLE: Utility of the Tourniquet Test and the White Blood Cell Count as Triage Criteria in Identifying Patients with Dengue

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The clinical presentation of dengue can be non-specific and dengue can be challenging to diagnose early in its course of infection before severe manifestations develop. Identifying markers that can distinguish dengue from other acute febrile illnesses is important. METHODS: A prospective evaluation of the utility of the TT and leukopenia (white blood cell count <4000/mm3) was performed. All patients presenting to a university-affiliated community emergency department (ED) in Southern Puerto Rico with fever for 2-7 days and no identified source of infection were enrolled. A standardized template was used to record patient characteristics, signs and symptoms, provisional diagnosis, referral and final outcome. Serum samples were collected at first presentation to the ED and tested for dengue, leptospirosis, and enteroviruses. A nasal swab sample was collected to test for influenza. A TT was performed by inflating a blood pressure cuff on the upper arm of the patient to a point mid way between their systolic and diastolic pressure for 5 minutes. The test was positive if 10 or more petechiae appeared in a one-square inch area in the antecubital fossa. RESULTS: A total of 284 patients were enrolled. Thirty-one (10.9%) patients were confirmed as having dengue, 136 (47.9%) influenza, 1 (0.4%) leptospirosis and 3 (1.1%) enterovirus. Fifty-two percent of laboratory-positive dengue cases had a positive TT versus 18% of patients without dengue (p <0.0001), and 71% of dengue cases compared to 22% of non-dengue cases had leukopenia (p<0.001). The tourniquet test was more sensitive in dengue patients with a platelet count of >100,000 than in patients with a count <100,000, but this was not significant (78% vs. 41%, p=0.11). CONCLUSION: The TT and leukopenia in combination are useful triage criteria to identify early dengue infections.

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ABSTRACT FINAL ID: OS25-A;

TITLE: Pneumonia Severity Index (PSI) Compared to CURB-65 in Predicting the Outcome of Community-Acquired Pneumonia Among Patients Referred to Emergency Department: A Prospective Survey

ABSTRACT BODY:

Abstract Body: OBJECTIVE: To compare the prognostic value of the pneumonia severity index (PSI) and another severity score for community-acquired pneumonia (CURB-65) in patients coming to our emergency department with community-acquired pneumonia. METHODS: This prospective study was performed on patients with community-acquired pneumonia admitted to the emergency department at Imam Hossein Medical Center, Tehran, Iran. A questionnaire including demographics, clinical signs and symptoms, laboratory and radiographic findings was filled for each patient diagnosed with community-acquired pneumonia. Admission criteria according to the PSI and CURB-65 were recorded and 1-month later clinical outcomes were compared with these two severity score's predictions at admission time. RESULTS: We studied 200 patients with community-acquired pneumonia (122 men, 78 women between18-68 years old). The most common co-morbid condition in this study was heart failure, and the most frequent CXR finding was lobar infiltration. The sensitivity and specificity of CURB-65 in predicting mortality was 100% and 82.3% respectively while the sensitivity and specificity of pneumonia PSI was 100% and 75% respectively. The sensitivity and specificity of severity CURB-65 in predicting the need for ICU admission was 96.7% and 89.3% and the sensitivity and specificity of PSI was 90% and 78.7% respectively. CONCLUSION: The CURB-65 seems to be the preferred method to be used in the emergency department to predict the need for ICU admission and the prognosis among patients with community-acquired pneumonia as it shows comparable specificity and sensitivity with PSI but is much easier to implement.

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ABSTRACT FINAL ID: OS25-B;

TITLE: Comparison of Fosfomysin Trometamol and Ciprofloxacin in Uncomplicated Urinary Tract Infections

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Acute urinary tract infection (UTI) is one of the most common infections requiring empirical antibiotic therapy. Selection of an efficient and safe antimicrobial agent is important in the emergency department (ED). The aim of this study is to compare the microbiological and clinical efficiency of single–dose fosfomycin trometamol (FT) therapy with a 3-day course of ciprofloxacin (CP) for uncomplicated UTI. METHODS: This randomized, prospective, single-blind study evaluated women aged 18-65 years complaining of dysuria, frequency and urgency whose onset of symptoms were within 72 hours of enrollment, in the ED. Patients received either a single-dose FT or 3-day course of CP. Patients with positive cultures of mid-stream urine samples constituted study patients. Microbiological and clinical cure were assessed at the test-of-cure visit (8-10 days after completion of therapy). Chi-square tests were used to compare efficiencies of regimens. RESULTS: Mean age of 81 women in the study was 30±12. There were 40 patients in the FT group and 41 patients in the CP group. The most common uropathogen isolated was E. Coli in 50 samples (61.3%). Clinical cure was demonstrated in 38 patients (96%) of the FT group and 38 patients (93%) of the CP group (Chi-square:0,347, df: 1, P=0,275). Bacteriologic eradication was achieved in 30 patients (80%) of the FT treated group and 27 patients (65,8%) of the CP treated group (Chi-square: 0,1591, df: 1, P=0,207). 3 patients (7.5%) in FT and 4 patients (10%) in the CP group experienced pyrosis, while nausea was seen in 5 patients (12%) in the CP group as adverse events. CONCLUSION: In the current study fosfomycin trometamol therapy was as safe and effective as ciprofloxacin for the first treatment of acute uncomplicated UTI.

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ABSTRACT FINAL ID: OS25-C;

TITLE: Innovative Model for the Coordination of HIV Services Using an Emergency Department-based HIV Program

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Many coordinated services are necessary to assure appropriate prevention and care for patients recently diagnosed or currently living with HIV. Care coordination is difficult when vital services are fragmented throughout the community requiring multiple separate referrals. Emergency Departments (ED) serve as the point of entry to the health care system for many of these patients and can provide centralized care coordination. Our aim was to describe an ED-based centralized model for HIV service coordination. METHODS: This study was conducted in an urban ED from March 2008 – April 2011. The ED HIV Program consists of prevention (HIV screening) and outreach (re-integration of HIV patients previously out of care) services. Patient eligibility for services is determined electronically through a query of the patient's electronic medical record (EMR) by the institution's informatics system. If HIV positive, the EMR notifies the ED-based testing personnel to interview the patient. If out of care for greater than 6 months, an appointment is scheduled with the program social worker (outreach). If HIV negative, the EMR electronically prompts testing personnel to perform HIV screening using an oral swab (prevention). If reactive, a confirmatory test is obtained and an appointment is scheduled with the program social worker (SW). During this appointment, the SW performs care coordination of financial, clinical, social, and mental health resources. We compared time to ID appointment before and after the centralized model for HIV service coordination. RESULTS: 9317 patients have been screened, 37 (0.4%) confirmed positive, and all 37 (100%) were compliant with the program SW appointment. 38 (100%) patients out of care for greater than 6 months were compliant with the program SW appointment. Average wait time for an ID appointment decreased by 55 days for those integrated into care from the ED centralized model. CONCLUSION: An ED-based model for HIV care coordination can successfully screen, integrate, and centralize services for patients recently diagnosed or currently living with HIV.

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ABSTRACT FINAL ID: OS25-D;

TITLE: Which Algorithms for Tetanus Prevention Must be Chosen for Optimal Prevention?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Preventing tetanus based on history is not optimal. It induces both a defect and an excess of prevention. In 2001 appeared a bedside semi-quantitative test that estimates in 20 minutes if the antibody level of the patient is still satisfactory. In 2005 came the second-generation test that gives results in 10 minutes. After validation this second test (TQS) was also integrated in prevention. Now different algorithms integrate TQS but there is no consensus on how to use it. No study has defined which algorithm seems to be the best. The goals of this study is to compare the quality and the cost of these algorithms to one another through a cost-benefit study and identify which algorithm(s) seem(s) to offer the optimal prevention. METHODS: We searched the literature for various algorithms that incorporate the TQS in the prevention of tetanus and calculated the estimated cost and the quality of prevention of each of these algorithms. We found 4 algorithms. Two algorithms take account of positive clinical history and two algorithms do not. Data from 2 cohorts found in the literature were used to compare these algorithms. RESULTS: Each of the 4 algorithms that use TQS allows prevention and is significantly less expensive than conventional prevention based on clinical history. Two algorithms take account of the history while integrating TQS. These 2 algorithms cause defects in prevention in patients with tetanus prone wounds. The other algorithms that use TQS without taking history into account offer not only a quality advantage but an economic advantage too. CONCLUSION: TQS has to be used systematically in the algorithm for tetanus prevention. Clinical history cannot be used anymore in tetanus prevention because TQS permits a better and less expensive tetanus prevention.

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ABSTRACT FINAL ID: OS25-E;

TITLE: Acute Febrile Illness Surveillance in a Tertiary Hospital Emergency Department: Comparison of Influenza and Dengue Infections

ABSTRACT BODY:

Abstract Body: OBJECTIVE: In 2009, an increased proportion of suspected dengue cases reported to the passive surveillance system in Puerto Rico were laboratory negative. As a result, enhanced acute febrile Illness (AFI) surveillance was initiated at the emergency department of a tertiary care hospital in southern Puerto Rico. METHODS: Patients who sought treatment with fever for 2-7 days and no identified source of infection were tested for influenza, leptospirosis, enteroviruses, and dengue. RESULTS: From the samples of the 284 patients, 31 dengue, 136 influenza, 3 enterovirus, 2 urinary tract infections, and 2 dual infections were confirmed. The median patient age was 17.9 years (range 0.5–82 years) and 54.9% were female. Most of dengue patients were residents of Villalba (58.1%). Nearly half (48.4%) of all dengue patients met criteria for influenza and most (78.7%) of influenza patients met criteria for dengue fever. Dengue patients were more likely than influenza patients to have bleeding (80.6% vs. 26.5%), rash (38.7% vs. 8.8%), and a positive tourniquet test (51.6% vs. 18.1%). Mean platelet count and white blood cell count were lower among dengue patients. CONCLUSION: Clinical diagnosis can be particularly difficult when outbreaks of other AFI occur during dengue season. A complete blood count and tourniquet test may be useful to differentiate dengue from other AFIs.

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ABSTRACT FINAL ID: OS25-F;
TITLE: The Best Guide to Empiric Antibiotic Therapy in the ED is Local Epidemiology

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Empiric antibiotic therapy is based on clinical presentation of an infectious disease (focus, possible pathogens and organ dysfunctions), epidemiologic factors including local flora and resistance patterns, and risk factors for multidrug resistant pathogens. For an appropriate antimicrobial treatment the emergency physician must consider all these factors, and know the epidemiological data about local flora (community and nosocomial) and its changes. METHODS: In our emergency department in 2010 we obtained 241 blood cultures (57 positive, 24%) and 122 urine cultures (51 positive, 42%). RESULTS: The most common pathogen was E.Coli (26.30% of blood cultures and 60.8% of urine cultures); 23.8% of all E.Coli was extended-spectrum B-lactamase (ESBL)-producing Enterobacteriaceae; 52.3% of all E.Coli were fluoroquinolone-resistant; 25% Staphylococcus Aureus isolated was methicillin-resistant (MRSA); finally 37% of blood cultures were possibly contaminated (Staphylococcus epidermidis and Staphylococcus Coagulase Negative. The E.Coli isolated in our emergency department were the 7.5% of all E.Coli isolated in the hospital, and the trend of fluoroquinolone-resistance was similar in Medical department (49%) and Intensive Care Unite (50%), with an increase over time (40% of resistance in 2009). CONCLUSION: The European Society of Urology recommended that in acute uncomplicated urinary tract infection treatment with fluoroquinolones is the first choice, but in our community such approach to therapy may fail in 50% of the infections, because of the very high fluoroquinolone-resistance rate. Epidemiological evidence suggests that the rising incidence of fluoroquinolone-resistance in E.Coli is linked to consumption of fluoroquinolones within the hospital and its surrounding community. Our data support the efforts to reduce prescription of fluoroquinolones aimed to control the resistance of E.Coli and to improve the management of antimicrobial therapy. The monitoring of epidemiological data about pathogens and resistance is recommended to help decisions about empiric antibiotic therapy.

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ABSTRACT FINAL ID: OS25-G;

TITLE: Systemic Lupus Erythematosus (SLE) Pneumonitis Mimicking Swine Influenza Pneumonia (H1N1)

ABSTRACT BODY:

Abstract Body: INTRODUCTION: We present a young woman who hospitalized with symptoms of acute systemic lupus erythematosus (SLE) pneumonitis mimicking swine influenza (H1N1) pneumonia. Because this case occurred during the H1N1 pandemic, our initial diagnostic impression was of H1N1 pneumonia. CASE REPORT: Although her clinical and laboratory findings were consistent with the diagnosis of H1N1 pneumonia, e.g., fever, sore throat, dry cough, arthralgias, myalgias, thrombocytopenia, relative lymphopenia, and elevated serum transaminases, some findings suggested an alternate diagnosis, e.g., leukopenia, a highly elevated erythrocyte sedimentation rate, highly elevated serum ferritin levels, elevated antinuclear antibody (ANA) levels, and double-stranded (DS) DNA titers. Her chest x-ray showed an accentuation of basilar lung markings, with a small pleural effusion similar to the chest x-ray findings of early H1N1 pneumonia. After laboratory test results demonstrated elevated ANA and anti-DS DNA titers, she was diagnosed with acute SLE pneumonitis. Other infectious diseases, e.g., human parainfluenza virus or Legionnaires' disease, can mimic H1N1 pneumonia during an influenza pandemic. Excluding asthma, congestive heart failure, exacerbations of acute bronchitis, chronic obstructive pulmonary disorder, and pulmonary interstitial disease, noninfectious mimics of H1N1 are extremely rare. DISCUSSION: This is a case of de novo SLE pneumonitis mimicking H1N1 pneumonia during the swine influenza pandemic.

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ABSTRACT FINAL ID: OS26-A;

TITLE: Emergency Airway Management in Japan: Interim Analysis of a Multi-center Prospective Observational Study

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Emergency medicine is increasingly recognized as a medical specialty in Japan, however, comprehensive studies evaluating current ED airway management are lacking. We sought to characterize ED airway management in Japan using a large multi-center registry. METHODS: We formed the Japanese Emergency Airway Network, a consortium of 10 academic medical centers in Japan and prospectively collected data for ED intubations from April 2010 to February 2011. The participating sites are level I (n=9) or level II (n=1) trauma centers. All patients undergoing emergency intubation were eligible for inclusion. Data were entered in real time by the intubator using a standardized data form. Variables included patient age, sex, and weight; indication; methods; drugs and dosages; level of training and specialty; number of attempts; success and adverse events. We present descriptive data as proportions with 95% confidence intervals. Odds ratio are reported with 95% CI and p-value via chi-squared testing. RESULTS: We recorded 1,486 intubations (compliance rate 99%) including 1,208 (81%) medical and 278 (19%) trauma patients; 612 patients (41%) were in cardiac arrest. Rapid sequence intubation (RSI), oral intubation with sedation only (SED), neuromuscular blockade only, and intubation without medications were the first method in 20%, 18%, 3% and 58%, respectively. Use of RSI varied among sites ranging from 0% to 79%. The first method chosen was successful in 97% of encounters (95% CI 96-98%) within 3 attempts (Table). Success rate on first attempt for RSI was higher than SED in all encounters (78% vs. 61%, 95% CI for difference [9-24%]; $p<0.01$). Intubation was ultimately successful in 1,482 (99.9%). Emergency physicians and residents performed 83% and other specialties 17%. Adverse event rate overall was 11%, without significant difference by method used. CONCLUSIONS: In this multi-center study, most ED intubations were performed by emergency physicians and residents. Use of neuromuscular blockade is highly variable. 3% of patients were intubated with neuromuscular blockades but without sedation.

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ABSTRACT FINAL ID: OS26-B;

TITLE: Securing Airways in the Prehospital Setting

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Endotracheal intubation (ETI) remains the gold standard for securing the airway in out-of-hospital settings. In the absence of personnel skilled in ETI a supraglottic airway device is an acceptable alternative. In Slovakia paramedics are not allowed to perform ETI. METHODS: The aim of study was to evaluate the use of laryngeal tube (LT-D) by paramedics and emergency physicians in out-of-hospital settings. Falck Zachranna is the largest Slovak prehospital service provider with 91 ambulances. In 2009 LT-D was introduced into all ambulances. Every use of LT-D has to be documented in a quality protocol. RESULTS: We evaluated retrospectively all LT-D protocols between February 27, 2009 and April 20, 2011. During the defined period 570 protocols have been filled in adult patients. The reason for use was in 428 (75%) patients primary circulation failure, in 111 (19%) respiratory failure, in 31 (5,4%) trauma. LT-D was introduced by 459 (80%) paramedics and 111 (19%) doctors. In 470 (82%) patients LT-D was used as primary procedure, in 20 (3,5%) because of impossible ventilation by mask, in 80 (14%) after failed ETI. The LT-D was inserted in 433 (76%) patients without problems, in 56 (10%) with small problems and in 12 (2%) with greater difficulties. The most common complication was dislocation 42 (7,4%), then leak 26 (4,5%), regurgitation before placement 20 (3,5%), regurgitation after placement 13 (2,3%), aspiration 6 (1,0%), gastric insufflation 10 (1,7%), other 9 (1,57%). CONCLUSION: To our knowledge this is the largest published study of using LT-D in the prehospital setting. LT-D is an useful device for doctors without a regular practice in ETI. For paramedics who are not allowed to perform ETI it is the most effective approach to secure a patient airway in case of CPR. An appropriate training is necessary. Despite some smaller or bigger problems during placement the ventilation was successful in 93%. In conclusion, according to our experience LT-D is an easy-to-handle alternative for airway management in prehospital environment. It can be used by paramedics after training safely for securing airways. The personnel should be retrained in regular intervals.

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ABSTRACT FINAL ID: OS26-C;

TITLE: Efficacy of a Disaster Medicine Course for Undergraduates

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Since September 2010, our research centre (CRIMEDIM) collaborated with the Italian Association of Medical Students (SISM) in a nation-wide project (DisasterSISM) to explore educational needs in disaster medicine (DM) at a undergraduate level and to deliver an elective course on the fundamentals. We evaluated the efficacy of the course in terms of students' knowledge retention in the field. METHODS: The course was organized with a blended learning structure using an e-learning platform (7 days access) and a 2 days residential course. During the web-phase they had access to teaching material organised in modules (General principles, Triage, Incident Command System, Approach to different kinds of disasters). For each module, they were asked to complete a questionnaire (25 MCQs) and a short survey on their education background. In the residential part, topics were proposed in an interactive and problem based teaching; in the last half day they participated in a computerized simulation using the ISEE simulator1, the end-product of EU Leonardo da Vinci project. A MCQs and a triage scenario for assessment of performance was submitted at the end of the course. RESULTS: 150 (35% M; 65% F) medical students from 7 medical schools attended this course. 85% were in the last two years of their 6-years medical training. Figure 1 reports the results of the pre and post test. The average of correct answers was 40,1% + 1,23 on the pretest and 82,1% + 1,77 p<0,001 on the post-test with a double increase in their performance. 85% of the participants passed the final examination with an average of 8,3/10 points obtaining the certificate of achievement for the course. 80% of them estimated their knowledge before the course very low but their interest in DM increased after the course. CONCLUSIONS: The course was able to increase the basic knowledge of medical students in Disaster Medicine topics that usually are not part of the academic core curriculum. The students really appreciated the use of simulation tools and exercises. Reference European survey on training objectives in disaster medicine. Delooz H, Debacker M, I SEE Partnership.EurJEmergMed 2007 Feb;14(1):25-31

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ABSTRACT FINAL ID: OS26-D;

TITLE: Physical Complaints of Children in Refugee Camps 2 Weeks After the 2010 Haiti Earthquake.

ABSTRACT BODY:

Abstract Body: OBJECTIVE: After the 12th January earthquake, leaving lots of Haitian families homeless, wounded or dead, many Haitian children were driven into (newly constructed) large refugee camps. The Belgian First Aid and Support Team (B-FAST) arrived among the first international medical teams, and provided acute care to about 7000 patients during the first weeks. During the same period, five medical "out-of-hospital missions" into refugee camps were performed. The objective is to describe the types of physical complaints in Haitian children in newly constructed refugee camps, 2 weeks after the 2010 earthquake. METHODS: In an adapted triage setting, we prospectively noted all complaints of the patients that presented to our improvised medical field post. RESULTS: A total of 1800 patients were seen, but a complete form was filled out for only 1042 patients. Almost 45% of these patients were minors. Average age was 7.73 years (range 1 day to 18 years), 52% were girls. Chief complaints were: cough (34.04%), stomach ache (29.60%) and diarrhea (19.03%), followed by fever (14.16% but only objectified in 35% of those complaining) and flu-like symptoms (13.32%), headache (12.68%), anorexia (8.67%) and vomiting (7.61%). Divided into categories of complaints, 58% had at least one respiratory complaint, 49% had a gastro-intestinal problem, 22% suffered from stress, 17% was infected by parasites and 8% had urogenital problems. We found no more than 7% still wounded but 73% had at least one complaint suggestive for infection. CONCLUSION: Besides classical complaints caused by the earthquake itself (wounds, fractures and bad healing), and besides the typical complaints awaited in the first weeks after such an event (epidemics, diarrhea), we noted a vast amount of respiratory problems in the Haitian children residing in refugee camps. While composing WHO kits to assist medics to provide help on the spot after an earthquake, this should be taken into concern.

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ABSTRACT FINAL ID: OS26-E;

TITLE: Bioterrorism: Would Emergency Medicine Physicians be Able to Improve Recognition of Terrorism Syndromes After Taking a Teaching Module?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Bioterrorism is the use of biological, chemical or nuclear weapons to create casualties, psychological stress, fear, panic and social disruption. Furthermore, the economic impact of bioterrorist attacks can be devastating. The United States is a known terrorist target as evidenced most recently by the attacks of September 11, 2001, and the weaponization of anthrax later that same year. Emergency Medicine physicians are likely to be called upon to recognize biological and chemical syndromes that accompany terrorism agents. Recognition of terrorism syndromes is paramount for response to terrorist attacks and can aid in the prevention and mitigation of potential catastrophic consequences. Our study objective was to test the hypothesis that Emergency Medicine physicians will improve their recognition of common biological and chemical syndromes after taking a teaching module. METHODS: Emergency Medicine physicians were presented a teaching module and evaluated on their recognition pre and post module. The study instrument was a self-developed previously-published 17-question visual stimulus examination containing victim scenario descriptions of 11 chemical or biological terrorism syndromes, (see Table). RESULTS: There was an 8.8% (p -value < 0.001) improvement in test scores on physician recognition of biological and chemical syndromes when comparing pre-and post education. CONCLUSIONS: These conclusions suggest that Emergency Medicine physicians can improve recognition of terrorism syndromes after participating in a teaching module. Education for Emergency Medicine physicians will augment our defense against potential biological and chemical terrorism events and possibly minimize catastrophic consequences.

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ABSTRACT FINAL ID: OS26-F;

TITLE: The Evaluation of Registered Fires in Turkey from 1998 to 2008

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The aim of this study was to evaluate the registered fires in Turkey from 1998 to 2008. METHODS: The study was descriptive in nature. The filled registry forms were obtained from the Disaster and Firebrigade Affairs Department of Civil Defence General Directorate in electronic format and was analyzed using SPSS version 17.0. There were 889 registry forms coming from all provinces of Turkey. In the data source, “other” categories were not defined clearly, so this caused a limitation in the analysis. Descriptive statistics were given and Chi-square test was applied where appropriate. RESULTS: There were 668810 fires in total. Forest fires were not included in this figure. There was an increase in fires within the study years (from 44065 to 93601) ($p<0.005$). The number of citizens and response personnel who lost their lives due to fires were 3377 and 115, respectively. So, a total of 3492 people died as a result of fires (Table 1). In all the fires, 91251 animals perished. Other causes, electric contact, and cigarettes-matches were the first three most common causes of all fires (206478, 131294, and 198913, respectively) (Figure 1). The fires’ damage cost 2,433,547,403.00 TL (1,581,252,373.00 US $). The Marmara region had the highest number of fires (334177; 50.0%) compared to other regions. Istanbul province which is located in the Marmara region had the highest number of fires and citizen deaths compared to other provinces (200219 and 780, respectively). CONCLUSION: Depending on the registered fires, it may be concluded that fires, excluding forest fires, were not a major disaster for Turkey in these 11 years. Although some clues exist for priority intervention areas against fires, it was clear that a better and more detailed registry form was required. Also more data on health issues were needed.

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ABSTRACT FINAL ID: OS26-G;

TITLE: Nuclear and Chemical Incidents in Belgium: Are We There Yet?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The recent earthquake and tsunami in Japan and the nuclear disaster that followed have raised worldwide questions about the safety of nuclear energy. Belgium has multiple nuclear, Seveso and petrochemical sites in a country with the highest population density in Europe. Therefore, there is a real risk of a nuclear or chemical incident with possibly a large number of casualties. What kind of training have Belgian doctors received, how prepared do they feel and how far does their theoretical and practical knowledge reach when it comes to being faced with such an event? METHODS: An online survey was sent to 825 doctors on the mailing list of the Belgian society of disaster and emergency medicine (Besedim). The survey consisted of questions about training and education, how prepared emergency physicians feel individually to deal with a nuclear or chemical event and a selection of theory questions to test the correlation between perceived preparedness and actual knowledge. RESULTS: The response rate was 30%. Responses show that in general, Belgian doctors feel more prepared to deal with a chemical than a nuclear event. When it comes to a nuclear event they feel badly prepared even though about 50% have had a training course in disaster medicine. Despite this perceived lack of preparation, 86,8% of doctors are still willing to go to work in the emergency room and even pre-hospital if there is enough protection and radio-detection equipment available. However, many say they have not been trained and do not feel capable to use this equipment. The theory questions confirm that there is a general lack of knowledge when it comes to nuclear events. Some remarkable conclusions include the misplaced confidence that iodine tablets have a protective effect against external radiation, and the belief that decontamination should be performed prior to treatment of life-threatening injuries. CONCLUSION: In conclusion, even though a high percentage of doctors are active in the high-risk zone surrounding a nuclear or a Seveso site, there is a clear lack of theoretical and practical knowledge. The survey suggests that there is a need for better training and education.

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ABSTRACT FINAL ID: OS26-H;

TITLE: Utstein-Style Template for Uniform Reporting of Acute Medical Response in Health Crises

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The majority of research on disaster medical response has been based on descriptive studies and focus on “lessons learned”, rather than on the response effectiveness or outcomes. No uniform template for collecting empirical data on medical care response in disaster situations has been published. Moreover, databases available for disaster medical response research are underdeveloped, incomplete and inaccurate. In order to compile valid data, identification and characterization of the distinctive features and concepts of disaster medical response is mandatory. The identification and use of relevant indicators is a crucial part of determining the impact of interventions in disaster medical response. METHODS: An EMDM Academy Consensus Group was established representing several disaster medicine research centres, the EuSEM disaster medicine section, WADEM and WHO. The Consensus Group decided to limit the project to the acute medical care response. The project was organized around a series of workshops, which created a forum for the presentation, analysis and listing of data elements and their indicators relevant for the disaster medical response. An adapted Delphi method and the Utstein-style rotation format were used to reach consensus on the data elements and indicators. RESULTS: As a result, a uniform template of describing 16 medical response and outcome data elements and 50 indicators relevant for evaluation and research on the disaster medical response have been developed, including the agreement on standard definitions. Pre-event and event variables with their indicators have also been developed. CONCLUSION: A uniform reporting template and method are essential to gather empirical data on disaster medical response management in order to establish robust databases allowing disaster medical response investigators and researchers to collect evidence that will impact on response outcomes and provide best practice.

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ABSTRACT FINAL ID: OS27-A;
TITLE: Analysis of Disasters by Type and Mortality during the Hajj

ABSTRACT BODY:

Abstract Body: OBJECTIVE: There have been many serious mass casualty events during the Hajj that have caused the loss of thousands of lives. During the month of the Hajj, the region around Mecca must cope with as many as three million pilgrims. Although mass gatherings most commonly include young, healthy people, most attendees of the Hajj are over 50 years old. As well, depending on the Islamic Calendar, the Hajj can be in winter or summer. The potential for high-mortality disasters to occur in this unique form of mass gathering are deserving of special attention from both scientific and planning perspectives. Improved understanding of these events is crucial to the future mitigation of this type of mass casualty. We analyzed all Hajj-related disasters from 1975 to 2010 to identify those types associated with the highest mortality. METHODS: Encounter data from all disasters occurring during the Hajj since 1975 were analyzed. From these data, a category list was consolidated to the major causative events for these disasters. The most common occurrences were then analyzed. RESULTS: The total number of death in all Hajj-related disasters measured is 3730. The most common cause of these deaths were: stampedes (65.95%); terrorist attack (17.45%); fires (14.56%); building collapse (2.04%). There was a clear relationship between stampedes and the number of pilgrims in the same year. CONCLUSION: The unique nature of the Hajj make human stampedes the most common cause of large-scale mortality. Further analysis is required to determine the at-risk populations with higher mortality and the relationship of stampedes to numbers of attendees.

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ABSTRACT FINAL ID: OS27-B;

TITLE: Monitoring the Mental Well-being of Caregivers during Disaster Relief

ABSTRACT BODY:

Abstract Body: OBJECTIVE: During disaster relief, personnel's safety is very important. This not only includes physical safety measures, mental well-being is also a part of this safety issue. There was a lack of objective mental well-being monitoring tools, usable on scene, during disaster relief. However today, the use of validated tools towards detection of psychological distress and monitoring of mental well being of disaster relief workers, has entered a new phase. Feasibility studies during the Belgian First Aid and Support Team deployment after the Haiti earthquake and the Sange DRC fuel truck blast in 2010 proved monitoring tools could be used. METHODS: The feasibility studies used a demographic questionnaire combined with validated measuring instruments: Compassion Fatigue and Satisfaction Self-Test for Helpers, DMAT PsySTART, K6+ Self Report. A baseline measurement was performed before departure on mission, and measurements were repeated at day 1 and day 7 of the mission, at the end of mission, and 7 days, 30 days and 90 days post mission. CONCLUSIONS: The studies proved the ability to monitor mental well being and detect psychological distress, by self administered validated tools, during a real disaster relief mission. For practical reasons some tools should were adapted to the specific use in the field after the Haiti-mission. This opens a whole new research area within the mental well-being and monitoring field.

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ABSTRACT FINAL ID: OS27-C;

TITLE: Communication Analysis during Computer Based Disaster Simulation

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Communications play a major role in disaster response and also in disaster medicine training and simulations. We report the use of a new communication analysis tool created in our center (rPhone) able to increase the communication analysis capability. METHODS: We tested the rPhone communication system in 2 consecutive identical computer-based disaster medicine simulations using the ISEE simulator. Each game simulated 2 ambulance stations, 3 hospitals and one dispatch center with two operators plus one operator for fire and police; each one of these with its own phone and radio apparatus. Both simulations were played by teams of medical doctors who never used rPhone before. They received a 5 minutes introduction to the system just before the game. RESULTS: No usability problems arose during the game. Global communication data are presented in table 1. The most called player during the simulation was the dispatch center (22 calls) during simulation 1 while it was fire and police (31 calls) during simulation 2. Average phone calls number was of 9.0 calls/user for simulation 1 and 9.3 calls/user for simulation 2. Average radio calls number was 39.5 calls/user for simulation 1 and 115.5 calls/user for simulation 2. Longest radio transmission was from dispatch in both exercises and was 26 seconds and 27 seconds for simulation 1 and 2 respectively. On scene incident commander spent communicating to the dispatch a total of 6 minutes in simulation 1 and 5.4 minutes in simulation 2. Aggregated dispatch center data are presented in table 2. CONCLUSIONS: The use of rPhone increased the realism of the simulation offering to the players both radio and phone availability. At the same time it allowed a fast and objective analysis of communication performance for each player. The use of the tagging feature easily allowed us to identify key communications for the debriefing.

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ABSTRACT FINAL ID: OS27-D;

TITLE: Needs Analysis for Disaster Medicine Training

ABSTRACT BODY:

Abstract Body: OBJECTIVE: A needs analysis survey of participants in the 2009 annual Oklahoma Disaster Institute Symposium was conducted. In 2011, we conducted the survey again to reanalyze potential needs and to refine our curriculum goals. METHODS: IRB approval was obtained for this voluntary self-administered survey of participants in the Oklahoma Disaster Institute's Disaster Symposium. The survey was administered to participants at both the 2009 Symposia and the 2011 Symposia. RESULTS: 109 of the approximately 250 Tulsa participants completed the 2009 survey. 39% felt the most cost-effective training for providers was at the NDLS level, 42% wanted providers with a certificate in disaster medicine, and only 11% felt that a master's in disaster medicine was appropriate and cost-effective training. Ninety-five of approximately 250 Tulsa participants completed the survey in 2011, The same question asked in the 2011 Disaster Institute Symposium netted 52% for NDLS, 18% for a certificate in disaster medicine, and 12% for master's in disaster medicine with 5.6% now feeling that the MPH would be appropriate. We queried as to what type of training would give the best preparation to advise an incident commander. The respondents felt that an incident commander would achieve best advice from those trained in a Master's in Disaster Medicine (38.2%) followed by NDLS providers in 25.8%. The disaster medicine certificate holder would be sought by 12%, while only 5.6% would seek advice from the MPH holder. In the original survey, these numbers were 24% NDLS, 25% Certificate, 33% Master's in disaster Medicine, and only 5% for the MPH. When queried about which training the respondents would consider pursuing or recommending to their staff, 51% replied to the NDLS, 24% thought a certificate was appropriate training, and 13% wanted the Master's in Disaster Medicine. Only 8% would pursue or recommend a MPH. CONCLUSION: The majority of our constituents feel that further training (certificate or master's in disaster medicine) would be appropriate to enhance advice given to incident commanders by our medical providers.

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ABSTRACT FINAL ID: OS27-E;

TITLE: Revolution Disaster Medicine

ABSTRACT BODY:

Abstract Body: INTRODUCTION: The Egyptian Revolution that started on January 25th, 2011 by massive demonstration developed eventually to a unique model that was subsequently followed in other Arab countries, like Yemen, Bahrain. The revolution started by massive rallies in most of the Egyptian cities and then gradually developed settlements in big squares like Tahrir Square. From the Disaster Medicine point of view, the revolution provided a new category that differs in its components, pathologies, preparedness and response. DISCUSSION: The author will address both components presenting the challenges and pathologies that he personally experienced from active participation in the revolution. Reports from satellite channels, personal reports, special reports, International news Journals provided were reviewed. Interviews with physicians who participated in the Tahrir Square field hospital and nearby hospital revealed the pattern of injuries that was intentionally obscured by Public Health officials. Hazard and Vulnerability Analysis of the revolution components: 1. The Rally - a massive prolonged march up to 10 hours per day in which the revolutionists are subject to: a. Medical illnesses like fatigue, dehydration, spread of infectious diseases, laryngitis from prolonged chanting and loss of control over chronic diseases like DM, HTN; b. Injuries caused by attack from riot police and criminal groups "Thugs" released by the government agents; c. Injuries caused by stampede, motor vehicles hitting pedestrian; and d. Burns and smoke inhalation. 2. The Settlement - tens of thousands of revolutionists from all age groups and all social groups settled down for indefinite time in the square with the following risks: a. All the injuries and problems listed under the rally; and b. Needs for displaced communities are not met according to the minimum standard for shelter, water, sanitation, food and healthcare recommended by Sphere Project. The author describes the details of injuries and illnesses, the challenges and the needs for the unique revolution activities. Reference: S. Photiou, J. Guimarães, Garcia Civil unrest and rioting. http://www.dismedmaster.com/course/next-emdm-module4.php. accessed 23 May 2011.

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ABSTRACT FINAL ID: OS27-F;

TITLE: Utilization of Simulation for Mass Casualty Training of Emergency Medicine Residents and Pediatric Emergency Medicine Fellows

ABSTRACT BODY:

Abstract Body: OBJECTIVE: A mass causality incident (MCI) requires rapid provision of medical care, incident command communication, patient flow facilitation, and availability of essential resources and supplies. Practicing disaster scenarios improves performance; however, formal disaster management (DM) training is lacking in Emergency Medicine (EM) residency training. The goal of this project was to develop a MCI simulation model to train EM residents in appropriate triage, allocation of resources, communication, and importance of after-action reports. METHODS: Authors will provide information on a 2 hour simulation course that included core concepts of DM, simulation scenarios, and evaluations of individual and team performances with after-action reports. Scenarios utilized a combination of actors (adults and children), Laerdal SimMan®, and a MCI pocket-card guide with combined START and JumpSTART algorithms. Additionally, authors will provide evaluation results on this educational event held at UF/Jax COM. RESULTS: UF/Jax MCI Simulation: Twenty-eight EM residents, six faculty, and six pediatric EM fellows were evaluated. In the role of triage officer, EM residents effectively triaged MCI patients using START and JumpSTART algorithms. In the role of incident commander, senior EM residents effectively recognized a MCI, prepared the ED for incoming patients, and re-allocated resources. Team evaluations revealed residents were able to split into highly functioning teams, identify and manage life-threatening conditions, and adopt leadership roles. CONCLUSION: MCI/DM training is an important component of EM residency training and pediatric emergency medicine fellowship. Residents and Fellows should be aware of local hospital, city and national MCI and DM plans. EM physicians need advance preparation and training to perform well during actual MCI's and understand proper debriefing. Simulations are an effective way of exposing EM residents and fellows to DM in a safe, controlled environment.

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ABSTRACT FINAL ID: OS27-G;

TITLE: Health Assessment of Haitian Children One Year after the 2010 Earthquake

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The 1/12/10 earthquake that struck Haiti caused 200,000+ deaths and significant damage to healthcare infrastructure. One year later Haitian youth are most vulnerable, with an estimated 500,000 orphans at risk for debilitating diseases. This study assesses the health status of a sample of Haitian orphans reporting medical results of a combined medical and psychosocial evaluation. METHODS: Our prospective cohort study collected data on 461 children in 7 orphanages (n=237) and 3 schools (n=224) in Port au Prince one year after the 2010 earthquake. Emergency Physicians and Emergency Nurses conducted a history and physical examination. Based on the findings, children were either treated on site, or sent to medical clinics for further evaluation and treatment. RESULTS:

461 children in 7 orphanages and schools were assessed. 241 (52%) were males and 220 (48%) were females. Age distribution was between 27 days to 18 years. Of the children assessed, 364 (82%) had one or more clinical findings, defined as a symptom, a positive finding on physical exam, or a diagnosis. The most common clinical findings were symptoms of abdominal pain (18%), fever (10.8%) and headache (10.1%). Complaints regarding these three physical findings were reported by 266 (57.7%) children, yet objective physical exam results consistent with these complaints were found in less than 20% of these 266 children. Wide variations were exhibited in the incidence of clinical findings between individual orphanages and schools, mirroring distinct differences in environmental conditions, nutrition and hygiene of children. CONCLUSIONS: Poor hygiene, environmental, and nutritional factors represent a major cause of disease among Haitian children. Our findings argue for improving child healthcare by improving environmental health and nutritional resources, but in addition, we found that in many cases symptoms reported did not have a related physical exam finding. We suspect a significant correlation between clinical findings, particularly symptomatology, related psychosocial-trauma factors, resulting in a combined negative impact on the overall healthcare of the children.

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ABSTRACT FINAL ID: OS27-H;

TITLE: Performance of Hospital Incident Command System in Iran

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Hospitals play a vital role in disaster response. The Hospital Incident Command System (HICS) function is the central system for directing the disaster response, and its performance is key for a successful response. Hospitals are often ill equipped to evaluate the strengths and weaknesses of their own emergency management systems before the occurrence of a disaster. Simulations can be used to assess performance of medical management prior to a disaster. Our goal was to measure the performance of HICS in Iran with respect to disaster management. METHODS: This observational study was conducted in 2008-2009. Twenty three hospitals from 15 cities were included. Fourteen hospitals were public and nine were university hospitals. A tabletop exercise was developed for each hospital based on hazard mapping. The job action sheets of HICS-2006, and its sections (operations, planning, logistics, finance), were used as performance indicators for the assessment of performance. The score of each indicator was considered as 1, 2 or 3 based on the evaluation. Fair performance was determined as <40%; intermediate: 41-70%; high: 71-100% of the maximum score of 192. RESULTS: None of the participating hospitals had an approved hospital disaster management plan. The performance according to HICS was intermediate for 83% (n=19). No hospital had a high level of performance level. The performance level of the different individual sections was intermediate or fair, except for the logistic and finance sections which demonstrated a higher level of performance. The public hospitals had overall higher performances than university. CONCLUSIONS: The overall performance of hospital incident command response, as measured by table top exercises, is fair to medium. We believe that this may be explained by the lack of a comprehensive disaster management plan, but this needs to be evaluated through future studies.

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ABSTRACT FINAL ID: OS28-A;

TITLE: Differentiation and Management of Acute Angioedema in the Emergency Department: A Need for Clear Guidance

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Angioedema is a condition characterized by self-limited, localized swelling involving subcutaneous tissues or mucosa and is caused by a divergent range of conditions including anaphylaxis and hereditary angioedema (HAE). Surveys of patients in the UK with HAE and other forms of angioedema have highlighted potential problems concerning the management of their condition in the emergency department (ED) setting, including misdiagnoses and failure to provide adequate treatment. METHODS: To explore this issue further, we carried out a survey of staff's knowledge of the signs, symptoms and management of acute angioedema at a university teaching hospital. We devised a short questionnaire and administered it to junior doctors working in the Aintree Hospital ED as an 'on-the-spot' test. RESULTS: In total, 35 junior doctors completed the questionnaire. Our findings are summarized in Table 1. Of note, fourteen responders (40.0%) stated that they would treat HAE in the same way as allergic angioedema (i.e. with antihistamines and corticosteroids), and only seven (20%) were able to name the appropriate drugs for the treatment of the condition. CONCLUSION: Our findings suggest a need for greater awareness among ED medical staff of the aetiology of the various forms of acute angioedema, and for clear guidance on how best to manage patients attending the ED. With this in mind, we have developed an algorithm for the differentiation and management of acute angioedema in the emergency department setting, in the hope that dissemination of this guidance to the wider medical community, including those attending the 6th MEMC, will help improve the standard of care provided to patients who suffer from acute angioedema.

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ABSTRACT FINAL ID: OS28-B;

TITLE: Risk Stratification of Acutely Admitted Medical Patients

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Acutely admitted medical patients have a high mortality and are often initially treated by junior staff. It would be reasonable to have a system that could assist in prognosticating the patients. We developed a risk stratification score that can predict the risk of in-hospital mortality of acutely admitted medical patients. METHODS: A prospective study of patients admitted via a medical admission unit using two independent cohorts. Patients with missing data were excluded. Approval by an ethics committee was not required by Danish law. A nurse recorded vital signs including the patient's ability to get into bed unaided. The endpoint was extracted from the computer system. We used logistic regression and restricted cubic spline analyses to predict the endpoint. We also simplified the model by dichotomizing the variables included in the logistic regression and thus developed a score ranging between 0 and 5. Discriminatory power was analyzed using area under the ROC curve and calibration using Hosmer-Lemeshow goodness of fit (GOF) test. GOF for the simplified score was analyzed by $\chi 2$ test. RESULTS: 3,050 were in the development cohort, 34.8% had missing data, 2.8% met the endpoint. 2,855 in the validation cohort, 20.1% had missing data, 2.2% met the endpoint. The logistic regression model had, in the development cohort, a discriminatory power of 0.87 (95% CI: 0.82-0.92) and 0.89 (95% CI: 0.86-0.93) in the validation cohort with an acceptable GOF in both cohorts. The restricted cubic spline model had a discriminatory power of 0.89 (95% CI: 0.84-0.93) in the development cohort and 0.88 (95% CI: 0.84-0.91) in the validation cohort. In both cohorts with an acceptable GOF. In the development cohort, the simplified score had a discriminatory power 0.87 (95% CI: 0.82-0.91); in the validation cohort of 0.86 (95% CI: 0.81-0.90). It failed on GOF, as no patient with the maximum score died in the validation cohort. CONCLUSION: In-hospital mortality of acutely admitted medical patients can be predicted at admission using systolic blood pressure, temperature, age, respiratory rate and mobility with acceptable discriminatory power and calibration.

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ABSTRACT FINAL ID: OS28-C;

TITLE: The Emergency Department is a Conducive Area for Early Detection of Type II Diabetes Mellitus

ABSTRACT BODY:

Abstract Body: OBJECTIVE: It is estimated that 9.9% of Tunisians, aged more than 25 years suffer from type II diabetes and that 50% of them are unknown (the national nutrition study 1996/1997). The purpose of this work is to determine the prevalence of type II diabetic patients presenting to the emergency department and to compare it with that in the general population. METHODS: A prospective observational study was carried out over a period of 15 days. We included patients aged more than 40 years, presenting to the emergency department between 8:00 am and 2:00 pm and recognized as diabetic. All patients received fingertip blood glucose concentration tests. If the finding was > 2 g/l (200mg/dl), the patient was considered as diabetic. If the glucose value was between 1.26 g/l(126mg/dl) and 2g/l(200mg/dl), fasting blood glucose was obtained the following day in the laboratory and the patient was considered diabetic if the fasting blood glucose level was > 1.26 g/l(126mg/dl). The Chi-squared test was used to compare the qualitative variables and the student's paired T test was used to compare the quantitative variables. RESULTS: The study involved 120 patients. We detected 20 cases of diabetes (16.6%). The comparison between the 2 groups: diabetes (+) and diabetes (-) is shown in the table. CONCLUSION: Emergency departments represent a conducive area for early detection of type II diabetes with a prevalence of 66.6%. This finding should call for more frequent blood glucose tests in patients at risk.

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ABSTRACT FINAL ID: OS28-D;

TITLE: Predicting Repetition Among Deliberate Self-Harm Patients in the Emergency Department: Validation of a Clinical Decision Rule

ABSTRACT BODY:

Abstract Body: OBJECTIVES: The risk of suicide among deliberate self-harm (DSH) patients is much higher than in the general population. There is a considerable amount of literature on risk factors for DSH and repetition but few studies have used these risk factors to predict patients at high risk of repeating their DSH actions. This is a key objective to be able to focus psychiatric resources on these patients. Our objectives: (1) To validate an existing clinical tool for assessing risk after self-harm (Manchester Self-Harm Rule) in a new setting and new population. (2) To compare Manchester Self-Harm Rule with a clinical tool based on factors associated with repetition in a Swedish population. METHODS: We used data from a consecutive series of patients (n=1524) attending one of Scandinavia's largest emergency departments due to DSH during 3 years. All DSH methods were included; self-poisoning, self-injury, other. The Manchester Self-Harm Rule uses 4 clinical correlates: history of self-harm, previous psychiatric treatment, benzodiazepine used in the attempt and any current psychiatric treatment. We used logistic regression and classification trees to identify risk factors. To evaluate the predictive performance, of individual factors and different classification models, to identify patients that repeated within 6 months we calculated the sensitivity and specificity. Main outcome measures: Repeated DSH or suicide within 6 months. RESULTS: The cumulative incidence for patients repeating DSH within 6 months was 20.3% (95% CI: 18.0–22.0). Application of the Manchester Self-Harm Rule to our material gave a sensitivity of 89% and a specificity of 21%. The risk factors associated with repetition in the Swedish population were: history of self-harm, any current psychiatric treatment, gender and antidepressant treatment. The use of these factors gave a model with a sensitivity of 90% and a specificity of 18%. CONCLUSION: Application of either of the models, with high sensitivity, may facilitate assessment in the emergency department and help focus psychiatric resources on patients at higher risk.

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ABSTRACT FINAL ID: OS28-E;

TITLE: Hospital Admission Rates for Emergency Department Patients with Transient Ischemic Attack are Higher in the United States than Canada

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The United States (US) spends a greater proportion of its gross domestic product (GDP) on health care than any other country. One cause for this may be lower physician risk tolerance in the US because of concern about malpractice litigation. Transient ischemic attack (TIA) is a common emergency department (ED) complaint for which hospitalization is usually of little benefit. Despite numerous publications identifying low risk patients safe for discharge, there is still concern that a patient may develop a stroke at home, so physicians often admit their TIA patients. No previous published manuscript has compared US admission rates for TIA with those in other countries. We hypothesize that greater concerns about malpractice litigation in the US results in higher rates of hospitalization in the US compared to Canada. We chose Canada because the proportion of GDP spent on health care there is 1/3 lower than in the US.

METHODS: Design: Retrospective cohort of ED visits. Setting: 21 New York and New Jersey EDs with annual visits from 18,000 to 72,000 and 104 EDs in Alberta with 5,000 to 70,000 average annual visits. Population: Consecutive patients seen by ED physicians in the years 2005 to 2010. Protocol: We identified patients with a primary ICD code for TIA and calculated the rates of hospitalization. We compared rates with the Student t-test (alpha = 0.05) and calculated 95% confidence intervals (CI). RESULTS: The US and Canadian EDs had 9,407 and 16,880 TIA visits, respectively. The mean ages were 69 +/- 16 and 70 +/- 15 years, and 57% and 51% were female, respectively. The hospitalization rates were 84% in the US and 34% in Canada. The difference is 50%, [95% CI: 49% to 51% ($p < 0.001$)]. CONCLUSION: We found hospitalization rates for TIA in the US are much higher than in Canada. This may be due to lower physician risk tolerance in the US. Further study is warranted to determine if outcomes in TIA patients are comparable between the US and Canada and whether opportunities exist to render care in a more cost effective manner.

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ABSTRACT FINAL ID: OS28-F;

TITLE: Can Emergency Medicine Nurse Practitioners and Physician Assistants Predict Disposition of Psychiatric Patients?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Emergency medicine practitioners (EMPs) often provide 'medical clearance' prior to evaluation by a psychiatry practitioner (PP). We set out to determine the level of agreement between EMP impression and disposition as determined by PPs. METHODS: This was a prospective observational study. The setting was an urban tertiary teaching hospital ED. We collected data from February to April 2011. We used a convenience sample of patient encounters with initial evaluation by EMPs and subsequent referral for psychiatric evaluation. We asked EMPs whether they thought the patients would be admitted or discharged following psychiatric evaluation, and if discharged – whether to outpatient psychiatric follow up or to no follow up. EMPs were asked to form their opinion based upon their general impression immediately following their brief medical evaluation. They were not given guidelines on which to base their decision. The EMPs were blind to PP decision. We used the Kappa statistic to calculate agreement between the EMP's impression and the ultimate disposition decision by the PP. We excluded patients who were acutely intoxicated, in police custody, or lived in an extended care facility. RESULTS: We included 156 patient encounters over the study period and had complete data for 152 encounters. Of these, 86 (55%) were admitted, 46 (30%) were discharged with no specific psychiatric follow up, and 20 (13%) were discharged with a follow up plan. EMPs predicted the exact disposition in 77/152 (51%) cases (Kappa = 0.264, 95%CI 0.77 – 0.333). Agreement was higher for admitted patients, with EMPs predicting inpatient admission for 57/86 (66%) of these patients. Other factors associated with higher agreement scores were years in EM practice by the EMP and suicidal ideation by the patient. CONCLUSION: Emergency medicine practitioners did not reliably predict psychiatric disposition decisions based on clinical 'gestalt.' Future research will focus on clinical guidelines to help EMPs better independently assess need for emergency psychiatric services.

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ABSTRACT FINAL ID: OS28-G;

TITLE: Comparison of the Efficiency of Intravenous Piracetam and Intravenous Dimenhydrinate in Treating Acute Peripheral Vertigo in the Emergency Department

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The purpose of this study was to compare the efficiencies of intravenous piracetam and intravenous dimenhydrinate in treating acute peripheral vertigo (PV) in an emergency department. METHODS: A total of 200 patients, aged between 18 and 70, presenting to the Ankara Training and Research Hospital Emergency Department and diagnosed with PV were enrolled in this double-blind study. All patients provided consent. One hour after the drug administration was complete, the severity of the patients' vertigo was re-evaluated using a visual analog scale. Any side effects that the patients experienced after the drug therapy were also recorded. RESULTS: Both drugs were found to be effective ($p<0.001$) and had comparable effects ($p<0.474$). The second dose of piracetam was found to be more effective than the second dose of dimenhydrinate in patients who had not obtained sufficient relief after the first administration of the drugs ($p<0.001$). When side effects were compared, we found the possibility of experiencing side effects was approximately twice as high in patients treated with dimenhydrinate compared to those receiving piracetam. CONCLUSION: Antihistaminics are the most common drugs used for acute PV. One of the major drawbacks of the antihistaminics used in the treatment of acute vertigo is the delay in improving the vertigo resulting from the suppression of the vestibular compensation. In the literature we found no study showing effectiveness of piracetam in treating acute PV. Our research is the only recent study and we show that piracetam was as effective as dimenhydrinate in treating acute PV with fewer side effects. In conclusion, even though most drugs have comparable effectiveness in the treatment of acute PV, piracetam should be considered as the primary choice because of its improved effect related to the vestibular compensation, increased vestibular circulation following administration, limitation of the vestibular damage, efficiency in decreasing the symptoms of both acute and chronic vertigo and relatively fewer side effects.

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ABSTRACT FINAL ID: OS29-A;

TITLE: Altered Mental Status of Cancer Patients in the Emergency Department

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Acute altered mental status (AMS) is common in cancer. Cancer patients often have complicated medical problems that can cause AMS. Although cancer patients with acute AMS are often primarily seen by emergency physicians, it has not been assessed in the Emergency Department (ED) yet. This study was conducted to evaluate the causes of acute AMS in cancer patients in the ED and its prognostic value for survival. METHODS: We studied cancer patients presenting to the ED with acute AMS retrospectively between July, 1, 2008, and December 31, 2010; to determine clinical findings, causes and outcome. Kaplan-Meier survival test was used to compare groups' survival times. RESULTS: The mean age of the 102 study patients was 62 years (range; 23-86). Etiologies of AMS were systemic infection (n=18), electrolyte disturbance (n=14), organ dysfunction (n=7), hypoxia (n=3) multiple potential metabolic causes (n=7), brain metastasis (n=26) and stroke (n=20). 7 patients with organic brain lesions had additional metabolic factors, which could contribute to their AMS. Etiologies of AMS were categorized into metabolic (n=49) and organic (n=46) causes. Median survival time was calculated as 2 weeks (range; 0-117) for all of the patients, 1 week (range; 0-117) for patients with metabolic causes of AMS and 6 weeks (range; 0-88) for those having organic brain lesions. Survival probability at one month was 33% for all patients, 25% for metabolic group and 48% for organic group (p=0.135). CONCLUSION: Even though statistically not significant, cancer patients with metabolic causes of AMS in the ED had poorer outcomes. Although survival of cancer patients is related to many other risk factors, regardless of primary tumor and etiology presentation to ED with acute AMS is a major risk factor. Emergency physician should be vigilant about acute AMS of cancer patients with metabolic causes in the ED because of its poor outcome.

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ABSTRACT FINAL ID: OS29-B;

TITLE: Late Epidural Blood Patch after Early Diagnosis of Post Dural Puncture Headache at the Emergency Department

ABSTRACT BODY:

Abstract Body: CASE REPORT: A 49 old woman presented herself at the Emergency Department with complaints of frontal stabbing headache and photophobia. She had received an epidural infiltration at L3-L4 level 36 hrs before. Vital signs were within normal range, no signs of meningismus; normal neurological examination. Tilting into Fowler's position revealed a marked increase in pain, confirming the diagnosis of post dural puncture headache(PDPH). A caffeine infusion and balanced isotonic solutions were added to supine bed rest. Subsequent laboratory investigations, CT of the head and EEG were normal. Since she responded only partially to conservative treatment, the decision to perform an epidural blood patch (EBP) was made after one week, which cured the patient and allowed discharge from the hospital the same day. DISCUSSION: Post dural puncture headache (PDPH) occurs after intended and unintended dural puncture. Sitting up from a supine position aggravates the pain. Associated symptoms may be present. Additional investigations should be reserved to rule out life threatening conditions or when a first EBP remained unsuccessful. Intravenous caffeine is indicated in mild PDPH after intended dural puncture. EBP should be considered as first choice treatment if the tap was performed with an epidural needle, complaints are severe, or conservative treatment is ineffective. Postponing the decision to perform an EBP may induce complications, while insurances may be reluctant to reimburse costs related to the prolonged hospital stay. In conclusion, our patient with severe PDPH after unintended dural puncture was successfully treated with EBP. Emergency physicians should be aware that a clear understanding of the indications for EBP is mandatory to promote optimal treatment and reduce unnecessary costs.

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ABSTRACT FINAL ID: OS29-C;

TITLE: Multicenter Controlled Trial about the Reexamination of Triple H Therapy after Subarachnoid Hemorrhage: Preliminary Report

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Volume management is crucial in intensive care, however, in some patients it is very hard to achieve optimal water balance. Subarachnoid hemorrhage (SAH) patient is a representative example. Cardiopulmonary complications are common after SAH: neurogenic pulmonary edema, cardiac failure, and so on. Triple H therapy is a standard management after SAH, but it also has adverse effects; pulmonary edema, increased intracranial pressure, hyponatremia, sepsis and so on. Purpose: We have started the multicenter controlled trial about cardiopulmonary function after SAH. The purpose of this study is to describe herein a trial of minimally invasive PiCCO Plus monitoring of cardiopulmonary function to reexamine the effect of triple H therapy after SAH. METHODS: This multicenter controlled trial analyzed the cardiopulmonary functions of 87 patients after SAH by PiCCO Plus monitoring over a period of two weeks. RESULTS: Output, contractility and afterload were essentially normal after SAH. However, slightly elevated intrathoracic blood volume led to fluid redistribution that caused hydrostatic fluid retention in the lung tissues. Triple H therapy had no additional cardiopulmonary features except for the elevated plasma BNP levels. Persistent catecholamine release and altered sensitivity of blood vessels to catecholamines caused the blood volume redistribution and hydrostatic pulmonary edema. Cardiac preload due to catecholamine release led to brain natriuretic polypeptide (BNP) release, resulting in natriuresis. This appeared to be the underlying mechanism of cerebral salt wasting syndrome. CONCLUSIONS: We found that hydrostatic pulmonary fluid retention occurred after SAH. Triple H therapy gave no additional benefits on the systemic circulation after SAH.

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ABSTRACT FINAL ID: OS29-D;

TITLE: Incidence, Preventability, and Hospital Admissions of Medication-Related Visits to the Emergency Department

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Medication-related visits to the emergency department have been studied internationally, but local data are limited. Our objective was to evaluate the frequency, preventability and hospital admissions of drug-related visits to the emergency department. METHODS: We performed a prospective observational study of randomly selected adults presenting to the emergency department over two months period. Emergency department visits were identified as drug-related on the basis of assessment by an emergency physician. Each incident was assessed by three investigators. RESULTS: Among the 1665 patients included in the study, the emergency department visit was identified as drug-related for 300 patients (18.0%). Of these, 257 visits (85.7%) were deemed preventable. The most common types of drug-related visits were non-adherence in 138 cases (46.0%), an adverse drug reaction in 95 cases (31.7%), drug overdose in 37 cases (12.3%), and use of the wrong or suboptimal drug in 30 cases (10.0%). The probability of admission was high in patients who had a drug related visit than among those whose visit was not drug-related (OR 3.2, 95% CI 2.5–4.2, $p < 0.001$). CONCLUSION: More than 1 in 6 emergency department visits are due to drug-related adverse events, a potentially preventable problem in our health care system.

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ABSTRACT FINAL ID: OS29-E;

TITLE: The Bioavailability and Pharmacokinetics of Intravenous Dexamethasone Sodium Phosphate Administered Orally Compared to Dexamethasone Oral Concentrate Administered Orally in Healthy Adult Volunteers

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The injectable formulation of dexamethasone (DXM) is used orally in many ED's off label for the treatment of pediatric asthma and croup. We compared the relative bioavailability and pharmacokinetics of dexamethasone sodium phosphate for injection (DSPI) administered orally to dexamethasone oral concentrate (DOC) in healthy adults. METHODS: Nonrandomized, open label, cross over study of 10 healthy adults. Baseline cortisol levels were drawn before testing. Subjects received 8 mg of DOC followed by a 1-week washout. Subjects then received 8 mg of DSPI orally. DXM levels were measured by liquid chromatography in tandem mass spectrometry. Area under the curve (AUC (0-t) and AUC (0-∞)) and half-life were compared between groups (paired t-test). RESULTS: Total, free serum and salivary cortisol levels at baseline and for both preparations were similar while suppression graphs showed levels fall quickly in an equal sustained manner for both. There were statistically significant differences in AUC (0-t) and AUC (0-∞) between DOC and DSPI administered orally. AUC (0-t) for DOC and DSPI were (mean ± standard deviation, 5664 ± 1576 and 4866 ± 1496 ng/dl/hr, respectively) with p =0.002. AUC (0-∞) for DOC and DSPI were (6552 ± 2607 and 5690 ± 2280 ng/dl/hr, respectively) with p = 0.011. The relative bioavailability of the DSPI administered orally was 86% when calculated using AUC (0-t) and 87% when calculated using AUC (0-∞). There was no statistically significant difference in half-life between subjects after being administered DOC (2.8±1.3 hr-1) and DSPI (3.1±0.9 hr-1). This study had a 90% power to detect a 15% difference in AUC. CONCLUSION: There are statistically significant differences in the relative bioavailability and AUC between DOC and DSPI administered orally though this is within the 0.8-1.25 range established by the FDA for bioequivalence. The pharmacokinetics of a commercially available oral concentrate compared with the intravenous formulation of DXM given orally shows the latter is a reasonable alternative.

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ABSTRACT FINAL ID: OS29-F;

TITLE: The Efficacy of Paracetamol in the Treatment of Acute Low Back Pain: A Randomized, Double-blind Comparative Clinical Trial

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Acute low back pain with or without radiculopathy pain is a self-limited disease without any special pathology that is a common reason of consulting primary care physician especially in industrialized countries. Present guidelines recommend to avoid bed rest but to take NSAIDS instead. Considering the side effects of NSAIDS, the aim of this study is to prescribe paracetamol instead, for pain relief and disposition of patients from the emergency department. METHODS: We conducted a prospective double-blind randomized clinical trial involving patients older than 18 with low back pain who had no neurologic and red flag symptoms. In their MRI results discopathy is observed and their pain is rated greater than 5 by using visual analogue scale. Patients were randomly divided into two groups. The case group received paracetamol and control group was prescribed diclofenac sodium. Their pain was evaluated in 10-20 and 30 minutes and then they were compared. RESULTS: 104 patients included in this study. The mean pain score after 10 min in paracetamol and diclofenac group was 2.8±0.9 and 7.5±0.7 (Pv=0.000) and after 20 min was 2.7±0.6 and 4.8±1.0 (Pv=0.000) and after 30 min was 2.5±0.5 and 2.5±0.5 (Pv=1.000) respectively. There was not any significant change in straight leg rising tests (Lasik and reverse Lasik). CONCLUSIONS: Paracetamol provides effective and rapid relief of low back pain without any remarkable changes in Lasik and reverse Lasik sign or even vital signs.

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ABSTRACT FINAL ID: OS30-A;

TITLE: Overconsumption of Radiography in Acute Wrist Injuries: A Call for a Clinical Decision Rule

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Distal radial fractures are the most common fractures encountered in emergency departments. Often a routine X-ray is obtained in patients presenting with acute wrist trauma. Data indicate a substantial part of these radiological examinations are redundant, resulting in unnecessary radiation exposure, increased waiting times and a waste of resources. In 1991 Stiell et al developed the renowned Ottawa Ankle Rules (OAR), which resulted in a substantial reduction of unnecessary ankle radiography (28%) and subsequently also reduced the time waiting in the ED (36 mins), without any missed fractures or patient discontent. Bachmann et al even reported a 30-40% reduction of unnecessary radiographs in a review of the OAR. Calvo-Lorenzo et al already tried to develop a set of wrist rules for clinical decision making and concluded that a broader study should be undertaken in order to assess the acceptance of a series of clinical decision-making criteria. However, to determine the necessity of such a rule first the magnitude of the clinical problem has to be evaluated. A retrospective analysis was conducted in three large Dutch hospitals: an academic, a teaching, and a community non-teaching hospital. The primary aim of this study was to determine which percentage of radiographs, requested due to suspicion of a wrist fracture, indeed showed a fracture. METHODS: All consecutive adult patients who underwent radiography following acute wrist trauma (<72 h) were included (1742 patients). RESULTS: Overall 888 X-rays (51%) showed no fracture. The distal radius fracture is the most frequent fracture in wrist injuries (76.5%), mostly an A2-3 type (AO-classification). A total of 2020 radiographs were ordered in one year (€83 per photo). CONCLUSION: This study justifies the call for a clinical decision rule. Like the OAR, these decision rules have the potential to permit clinicians to confidently forego a large quantity of the wrist X-ray series currently being ordered for acute wrist injury patients. This could reduce costs, radiation exposure, and waiting times substantially without any clinically significant missed fractures.

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ABSTRACT FINAL ID: OS30-B;

TITLE: Use of String Wrapping in Difficult Ring Removal

ABSTRACT BODY:

Abstract Body: OBJECTIVE: With hand injuries being one of the most frequent presentations to the emergency department, ring removal from a swollen digit is an often encountered problem. In our experience staff often resort to cutting rings off rather than utilising string wrapping - a simple and effective technique that does not damage the ring. We aimed to determine the methods known and used by the staff of emergency departments for ring removal in the United Kingdom. METHODS: 46 personnel working in the emergency departments of three district general hospitals completed a paper questionnaire comprising known and used methods of difficult ring removal. RESULTS: Over 78% of the staff surveyed would use a ring cutter as their second choice method, after failure of soap and water. Although 67% of responders had heard of the string wrapping technique, only 52% of these had ever used it, and only 13% would consider the method as a first choice. Lack of training, experience and materials were cited as reasons not to use the technique. CONCLUSION: Rings are often expensive or sentimental items and although clinical need dictates removal in traumatic injuries of the hands or feet, they are often unnecessarily damaged. We present the technique of string wrapping to the conference as a simple, cheap, quick and effective method of difficult ring removal, whilst not damaging the ring or digit.

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ABSTRACT FINAL ID: OS30-C;

TITLE: Scrappage Scheme - Saving Lives, Not Just The Economy

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The UK government introduced a scrappage scheme on 18th May 2009 as an incentive for motorists to scrap cars and vans over ten years old. This scheme fell under the auspices of the Budget, however we postulated that this had an impact on road safety as older and less safe cars were removed from service. METHODS: During the initial one year period in which the scheme ran an estimated 330,000 vehicles were exchanged. Outcome measures: Road deaths in Northern Ireland for the year before and after the inaugural scrappage scheme. RESULTS: 2010 saw the first decline in road deaths in Northern Ireland since records began. A total of 55 people were killed on Northern Ireland's roads in 2010, 60 less than 2009, equating to a fall of over 50% in fatalities, with a decrease of over 20% in serious injuries. This was the lowest number of fatalities on the roads for 80 years. The collision rates remained constant (515.4 collisions per month pre-scrappage; 513.4 per month post-scrappage.) The median age of vehicle in which an occupant died was eight years old in the year before scrappage. Post-scrappage this figure was nine years old. 60% of fatalities occurred in vehicles over 7 years old pre-scrappage, this increased to 75% post-scrappage. Fatalities remained more frequent in older cars. CONCLUSION: Newer cars have the benefit of improved safety features, as evidenced by NCAP safety ratings, leading to greater passenger safety in the event of a collision. So while the rate of collisions remains the same (despite more active safety measures, eg anti-lock brakes) newer cars afford the occupants more protection against death or serious injury.

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ABSTRACT FINAL ID: OS30-D;

TITLE: Epidemiological Pattern of Road Traffic Injuries in Tehran-Abali Axis in 2008: A Prospective Study

ABSTRACT BODY:

Abstract Body: OBJECTIVE: A study was conducted to determine the epidemiological pattern of road traffic injuries in Tehran-Abali axis in 2008. METHODS: In a prospective observational study road traffic injuries data in Tehran-Abali axis on event time until one month later and information of pre-hospital and hospital care of injured subjects was collected by road traffic police, six emergency stations, twelve hospitals and three clinics during one year. Pre-hospital information included: age, gender, injured organ, Revised Trauma Score (RTS), Injury Severity Score (ISS) and hospital information was duration of hospitalization, status on dismissed time and post event one month later. RESULTS: During one year 243 accidents occurred. On scene 23 subjects died. 345 injured subjects were followed. The mean age of subjects was 33.6±15.6. Overall, 71.1 percent of injured subjects were male and more than 60 percent of them were 20-39 years. The most common injuries were head and face damage. The mean RTS and ISS was 7.23 and 9.38 respectively. Intensity of injury was higher among pedestrian than vehicles and motorcycle drivers, and occupants, ($p<0.05$). The mean length of hospitalization among 75 percent of injured subjects was less than 24 hour. 66.5 percent of injured subjects after discharge were in similar health as before the accident. CONCLUSION: More medical services at the scene, education and monitoring to novitiate youth drivers, public education and security transit place for pedestrians, educational programs to protect the head and face and high quality of medical services to intend for indoor wear injured subjects needs to be predicted.

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ABSTRACT FINAL ID: OS30-E;

TITLE: Mass Casualties in the Last Libyan Conflict: Our Experience in the Siege of Misrata

ABSTRACT BODY:

Abstract Body: INTRODUCTION: EMERGENCY team joined the “Hikmat” hospital in Misrata at the beginning of April, 2011. The hospital - a small clinic, as the main hospital had been previously bombed - could not deal with the severe medical situation. The frontline was 2 Km away from the hospital and the average number of casualties was even more than 100 people per day. No professional evacuation system was available; no care on-the-field was attempted. Despite the good professional skills of resident doctors, no triage occurred at any level. The re-organization and management of care was based on the resources available on-site. The senior Anesthetist on duty from the EMERGENCY team was responsible for the triage tent. Neither nurses nor local doctors were trained in war triage, so the same senior Anesthetist was in charge of that as well. The procedure was strictly performed inside the tent, as no battlefield nor FAP triage is possible. We reduced the traditional 4 categories of triage to a scheme of only 3: immediate (red label), delayed (green level), compassionate. Delayed is comprehensive of surgical patients who need OT but are stabilized. DISCUSSION: EX-POST REMARKS - Respect for the local sensibility means to guarantee compassionate care to all casualties, even when survival is 100% unlikely.

PEA is not a matter of no treatment: attempt of chest compressions is the solution in the hands of medicine students and junior doctors. As well for GCS 3 casualties.

U/S E-FAST is highly reliable in supporting and timing any treatment. The LEADERSHIP of the international professional figures is highly recommended to avoid waste of time. This is particularly true when the war does not allow training and professional formation. Weekly MEDICAL REPORTS are necessary to point out organization and management of the emergency situation and update any working line. The CHAIN of command is mandatory: from the triage medical officer, to any team leader, head nurse, resuscitation team, ending to the emergency responsible. The layout of any medical facilities should be in accordance with the emergency tent (Dept. or Room) priorities (one-way flow).

AUTHORS/INSTITUTIONS: P. Grosso, , Emergency ONG, Milano, ITALY;

ABSTRACT FINAL ID: OS30-F;

TITLE: Analysis of Cardiopulmonary Function after Severe Head Injury

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Volume management is crucial in intensive care, however, in some patients it is very hard to achieve optimal water balance. Severe head injury (SHI, GCS≦8) patient is a representative example. Cardiopulmonary complications are common after SHI: neurogenic pulmonary edema, cardiac failure, and so on. We have started the controlled trial about cardiopulmonary function after SHI. We describe herein a trial of minimally invasive PiCCO Plus monitoring of cardiopulmonary function after SHI. METHODS: We have analyzed the cardiopulmonary functions of 12 patients after SHI by PiCCO Plus monitoring over a period of a week. RESULTS: CT scan on arrival revealed diffuse injury (DI) in 5 patients and evacuated mass lesion (EM) in 7 patients. Endogenous catecholamines were elevated in DI at Day 7. BNP was higher in EM than in DI during the entire study period. D-dimer was elevated in EM at Day 7. EM showed low cardiac index and global ejection fraction and high mean arterial pressure and systemic vessel resistance index after Day 3. CVP was high but global endodiastolic index was low in EM after Day 3. Extravascular lung water index was high accompanied with high pulmonary vessel permeability index in EM after Day 3. CONCLUSION: EM showed afterload mismatch like circulatory characteristics after Day 3. This circulatory feature brought about cardiogenic pulmonary edema in addition to inflammatory pulmonary edema due to craniotomy or trauma itself. Therapeutic strategy of pulmonary edema after EM should not reduce the blood volume but lower the blood pressure with cardiac support.

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ABSTRACT FINAL ID: OS30-G;

TITLE: Thrombosis of the Radial Artery following a Closed Traumatic Dislocation of the Elbow

ABSTRACT BODY:

Abstract Body: INTRODUCTION: Closed traumatic elbow dislocation is occasionally accompanied by vascular injury. Although rare it is a complication with potentially disastrous outcome. The objective is to provide a literature based approach to the patient with a low energy traumatic closed dislocation of the elbow joint, not associated with a fracture. CASE REPORT: We report a rare complication of an immediate thrombosis of the radial artery following a closed elbow dislocation, which has never been described in English literature before. DISCUSSION: Although uncommon, arterial thrombosis is potentially disastrous and therefore a close clinical neurovascular examination, including a measurement of the Ankle-Arm-Index (AAI), should be performed in the acute as well as in the follow up setting.

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ABSTRACT FINAL ID: OS31-A;

TITLE: Accuracy of Normal Range of Motion in Necessity or Unnecessary of X Ray in Patients with Blunt Elbow Trauma who come to the Emergency Department

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Elbow injuries account for approximately 2–3% of presentations to the emergency department. They affect all age groups, although the exact pathology at each age varies. This is associated not only with a very high rate of X rays but also with a very high rate of “missed fractures.” This study examines which components of elbow examination have the best correlation with radiographic findings. METHODS: Over the one year period (2009-2010) all patients presenting to the Emergency Department of Emaqm Reza University Hospital at Tabriz with an injury to the elbow were included in the study. A proforma was completed noting the patient's age, sex and elbow examination. Radiographs were obtained and reported by a Consultant Radiologist who was unaware of the clinical findings. A significant injury was defined as the presence of a fracture, a joint effusion, or both. RESULTS: The study collected data from 102 patients with elbow injuries. Radiographs were obtained on all of them. The average age of the patients was 32.2±21.6 with a range of 5-87 years. Physical examination, loss of elbow full extension, full flexion, full pro/supination was found in 26 (25.4% of all patients). Presence of a fracture was found in 34.6% of patients with abnormal physical examination and 1.3% of patients with normal physical examination (P=0.001). Joint effusions were found in 50% of patients with abnormal physical examination and 2.6% of patients with normal physical examination (P=0.001). CONCLUSION: This study shows that clinical examination is successful in being able to predict a normal or abnormal X ray in most patients presenting with elbow injuries. Those patients with normal extension, flexion and supination do not require emergent elbow radiographs.

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ABSTRACT FINAL ID: OS31-B;

TITLE: Which Predictive Values in HDU Trauma Patients? Prognostic Assessment in the Emergency Department

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The aim of this study was to evaluate if data commonly used to stratify trauma patients admitted in ICU could be reliably applied to trauma patients in HDU. METHODS: Study cohort included consecutive trauma patients presenting to the HDU from the Emergency Department, from July 2008 to December 2010. Data to compute Injury Severity Score (ISS), presence of comorbidity and relevant clinical and laboratory parameters were collected in the ED (T0) and during the first 24 hours of HDU stay (T1). Prognostic end-points were in-hospital mortality and discharge after 48 hours of HDU stay. RESULTS: We enrolled 204 patients (clinical and laboratory data in Table 1 and 2). SOFA and APACHE II scores evaluated in the ED and HDU were similar in admitted and discharged patients and very low in both. Patients directly discharged from HDU (D-) had a significantly lower ISS and higher Hb level and were significantly younger (Table 2). None of our patients died during the HDU-stay; we observed only three in-hospital deaths. A multivariate logistic regression including all significantly different parameters between D+ and D- subjects (ISS, age and Hb) identified ISS (HR 1.118, 95%CI 1.049-1.191, p=0.001) and Hb (HR 0.760; 95%CI 0.587-0.985, p=0.038) as independent predictors of a longer hospital stay. Considering patients with thoracic trauma (n=110), D+ patients were significantly older (53±22 years in D+ vs 41±17 in D-, p=0.005) with significantly lower Hb at T1 (11±2 gr/dl in D+ vs 13±2 in D-,p=0.002) and thorax AISS significantly higher (9.8±4.1 in D+ vs 7.8±3.8 in D-, p=0.033), ISS tendentially higher (16±9 in D+ vs 12±7 in D-, p=0.052); tendentially significant higher impairment of PaO2/FiO2 ratio at T1 (407±135 in D+ vs 321±142 in D-, p=0.08). In this subgroup thorax AIS (HR 1.203, 95%CI 1.009-1.434, p=0.039) and Hb level (HR 0.545, 95%CI 0.362-0.821, p=0.004) were independent predictors of the need to admit the patient. CONCLUSION: In patients admitted to HDU for trauma, severity of anatomical lesions and blood loss entity appear to be independent prognostic determinants of the need to extend hospital stay.

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ABSTRACT FINAL ID: OS31-C;

TITLE: Improved Mitochondrial Function is Associated with Improved Apoptotic Cell Death in Reperfusion Injury

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Critical limb syndrome (CLS) caused by acute ischemia occurs in many clinical settings, including acute thromboembolism, penetrating extremity traumas, and in battlefield medicine where emergency tourniquets are employed to arrest a life-threatening extremity hemorrhage. Although muscle cell death in CLS can occur through cellular necrosis and apoptosis, the latter remains understudied and its pathomechanism poorly understood. We would like to explore the role of mitochondrial function in apoptotic cell death of limb muscle using a rodent model of hind limb ischemia-reperfusion (IR). METHODS: Male C57/BL6 mice (10–12 weeks of age, 22–35 g) were divided into 3 groups: sham, ischemia reperfusion, and experimental. Mice in the IR group were subjected to 3 hours of unilateral hind limb ischemia using a rubber tourniquet, followed by 4 hours of reperfusion. The experimental group received 50 mg/kg of CoQ10 (ubiquinone) at 24 hrs and ½ hours prior to the same IR protocol. Sham-operated mice received the same treatment without the tourniquet. Ischemia was verified by measuring skeletal muscle blood flow with a Transonic flow probe. Gastrocnemius was harvested and saved for measurements. Muscle necrosis was measured using triphenyl tetrazolium chloride (TTC). Superoxide anion production was measured using the lucigenin chemiluminescence method.

Activities of the four mitochondrial electron transport chain complexes were measured using spectrophotometry. Apoptosis was measured using terminal dUTP nick-end labeling (TUNEL). RESULTS: (means ± SEM); MBF is significantly reduced to nearly no flow during ischemia, returned and leveled out at about 35% of baseline during reperfusion. Mitochondrial functions were significantly reduced in IR compared to shams and improved with CoQ10 (Fig. 1). Apoptosis was 20.4 ± 2.2% in mice subjected to IR and reduced to 6.9 % ± 0.30% with CoQ10 (Fig. 2). CONCLUSIONS: Exogenous administration of CoQ10 improves cellular bioenergetics and apoptotic cell death in limb muscles subjected to ischemia-reperfusion injury.

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ABSTRACT FINAL ID: OS31-D;

TITLE: Iliocostalis Thoracis-Lumborum (ITL) Myofascial Pain Syndrome (MPS): Can We Afford not Knowing how to Diagnose and Treat This?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The incidence of MPS in the ED is unknown. Diagnosis is solely based on clinical evaluation. ITL is located in the dorsal axis but pain is referred to the anterior aspect of the torso. This challenges the unaware clinician. This pain is easily mistaken for visceral pathology. Our aim is to outline a clinical syndrome which literature is non-existing and which diagnosis is solely based on a good H & P. Missed diagnosis has a significant impact in cost and patient suffering. Treatment can be accomplished in the ED with Trigger Point (TP) therapy. METHODS: We prospectively looked at a consecutive sample of patients visiting the ED with pain located at the anterior axis of the chest or abdomen. The review per systems suggested a musculoskeletal origin. Physical examination revealed an ipsilateral ITL muscle TP able to reproduce the symptoms. Inclusion criteria: No response to conventional therapy, Negative workup (if previously done), No systemic symptoms, Undetermined diagnosis (some seen by other specialties), Vital signs within normal limits, and Pain resolved with trigger point injection in the ED. RESULTS: Ages 18 - 57, (11 females). Pain range 6-9 (VAS 1-10), Duration 2 days - 2 years. Right: chest wall (n=2), upper quadrant (n=3), mid abdomen (n=1), lower quadrant (n=2). Left: chest wall (n=1), mid abdomen (n =3), lower quadrant (n=2), All patients had visited other EDs and general/specialty clinics. Most had prior laboratory and imaging testing done (table 1). Four had an identified cause (fall, lifting, vomiting, coughing). Only four reported concomitant back pain, others only reported it when asked at the review per systems. All had an active ITL TP able to reproduce the pain. TP injection was diagnostic and therapeutic. Patients were released once asymptomatic. CONCLUSIONS: MPS are not life threatening but are a threat to the quality of life. Undiagnosed MPS can be very costly. The diagnosis of ITL MPS requires no expensive tests. Proper diagnosis and care can be accomplished in the ED. Teaching clinical diagnosis of MPS and TP therapies should be part the EM training.

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ABSTRACT FINAL ID: OS31-E;

TITLE: The Impact of Suspected Scaphoid Injury

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Up to one quarter of scaphoid fractures remain undiagnosed following initial radiographs. Untreated fractures have poorer outcomes and many patients are unnecessarily immobilised for prolonged periods of time to avoid missing injuries. Magnetic Resonance Imaging (MRI) has a high sensitivity and specificity in detecting scaphoid fractures, but many units do not routinely utilise MRI. We investigated the impact of suspected scaphoid injury, and hypothesised the effect of introducing a MRI protocol. METHODS: We identified all fracture clinic referrals from the Emergency Department in a large teaching hospital from the UK for one year. We retrospectively defined three injury subgroups: true scaphoid fractures; occult fractures; and suspected scaphoid injury. We analysed patient demographics, treatment, and resources used for each. RESULTS: Fracture clinic received 537 scaphoid related referrals; 87 true fractures, 43 occult fractures and 407 suspected injuries, incurring average costs of £852, £773, and £384 respectively. CONCLUSION: In our series, occult fractures accounted for 33% of all scaphoid fractures. The majority of scaphoid related referrals (76%) were not diagnosed with a fracture with many unnecessarily immobilised. We believe the introduction of an early MRI protocol would lead to an earlier definitive diagnosis and potentially better uses of resources.

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ABSTRACT FINAL ID: OS31-F;

TITLE: Home Treadmills: The Inconspicuous Cause of Paediatric Hand Injuries

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Friction burns in children are uncommon but often missed. An increase in friction burns caused by home treadmills led to a review of cases. We present a series of burns and their complications. METHODS: A review of casenotes identified 15 referrals with injuries relating to home treadmills over a 24 month period 2007-2009. RESULTS: All treadmill injuries affected the hand and wrist. 14/15 patients had full thickness burns, 1 had a fracture of their dominant thumb. Age at presentation ranged from 18 months to 6 years. Injuries involved the following areas: fingers (7), palm (3), dorsum of the hand (2), volar aspect of wrist and forearm (2), thumb (2) and fractures (1). 8 patients required surgery. The majority of the patients were sent home and then referred later to the department (median 3.14 days; 1/4 had developed signs of infection). 2 patients developed scar contractures requiring surgery. All patients had occupational therapy input. Average follow-up was 18 months. CONCLUSION: Patients referred early have good outcomes but delayed presentation is likely to lead to complications, mainly infection and the need for corrective surgery. Healthcare professionals should be alert to recognise potential injuries following a history of treadmill injury including friction burns and fractures. These injuries usually require surgery and occupational therapy and need to be referred promptly for assessment and treatment. The findings have been referred to Child Accident Prevention Trust and ANEC (Brussels). We advocate public awareness, appropriate product labelling and child safety design features on home treadmills.

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ABSTRACT FINAL ID: OS31-G;

TITLE: Lessons from the Love Parade

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The number of outdoor events is increasing, particularly concerts. Historically medical coverage for the events has been provided by voluntary agencies and GPs. The "purple guide" is an event safety guide which was published by the British Government to provide medical criteria required for the safety of events. The guide states that 1-2% of the audience will seek medical assistance. Of this number 1% require transfer to hospital. The aim of this study was to determine if the presence of an Emergency Medicine Consultant would reduce the number of transfers and therefore the burden on ambulance and local Emergency Departments. METHODS: A prospective observational study was performed over a 3yr period. A database containing the patient demographics, location of incident, mechanism of injury, diagnosis, treatment and disposal was maintained. A consultant from the ED was always present. The number of other medical staff was determined by the guide. The data was collected by an independent scribe. The resulting database was analysed by an independent observer. RESULTS: Total number of people attending the concerts 290,000. Total number attending for medical assistance 710. Number of medical transfers to local hospitals was 2. Injuries which were managed and patients returned to the audience included; shoulder dislocations, crush injury, minor head injury, lacerations, treatment of drug and alcohol intoxication and treatment of various medical conditions. Transferred patients were still intoxicated at the end of the concerts and needed to be in a place of safety. CONCLUSIONS: The number of people attending for medical assistance is lower than that quoted in the "purple guide". The number referred to neighboring hospitals was reduced by the presence of a senior Emergency Doctor. The type of injury treated by the Emergency Doctor was complex and in this doctors absence the burden on the ambulance and hospitals would have been increased. The Love Parade 25 July 2010, > 1 million revelers, 1 tunnel, 21 fatalities, 10 resuscitations, and 510 injured.

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ABSTRACT FINAL ID: OS32-A;

TITLE: Prediction Rules for Morbidity and Mortality in Elderly Patients Presenting to the Emergency Department with Non-specific Complaints

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Elderly patients pose particular diagnostic and management challenges to emergency department (ED) physicians. Elderly patients admitted to the ED often present with non-specific complaints (NSC) such as weakness. Risk stratification tools are needed to efficiently manage patients with NSC in the ED. Thus, we conducted the Basel Non-specific Complaints (BANC) Study to prospectively identify risk factors predictive of morbidity and mortality in ED patients with NSC. METHODS: The BANC study is a delayed type cross-sectional diagnostic study of consecutive patients with NSC with a prospective 30-day follow-up. We defined NSC as all complaints that are not part of the set of specific complaints, where an initial working diagnosis was not established. We chose a multivariable linear logistic regression model with a stepwise algorithm. RESULTS: 554 patients presenting to the ED with NSC were assessed. The linear logistic regression model with a stepwise algorithm selected for "serious outcome" 6 of 76 potential predictors (urea, C-reactive protein (CRP), sodium, “sick appearance” (as determined by the ED physician at presentation), “feeling exhausted”, and coronary artery disease (CAD. For 30-day mortality only albumin and urea were selected. AUC for both outcomes were > 0.78 in the receiver operator characteristics. CONCLUSION: 6 predictors could be identified for significant morbidity and 2 for mortality. The “feeling of being exhausted” is a symptom described in the geriatric literature little known to emergency physicians. The "sick appearance" is a subjective sign, getting close to “intuition”. Finally, the presence of CAD was superior to the sum of all chronic diseases (Charlson comorbidity index).

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ABSTRACT FINAL ID: OS32-B;

TITLE: Importance of the Triage Risk Stratification Tool in the Emergency Department

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The triage risk stratification tool (TRST) is used to identify elderly patients at risk of returning to hospital for admission to the emergency or any other department. The aim of this study is to confirm the value of the TRST as a reliable means of identifying elderly patients at risk of having to be readmitted to hospital after their discharge from an emergency department (ED) within 30 days and to determine the predictors of a high score of TRST. METHODS: This is an observational cohort study involving consecutive elderly patients (>65 years) admitted between October 2010 - December 2010 and discharged from the ED. Patients hospitalized in other departments were excluded from the study. Emergency physicians were blind to the results of the test.
The test was assessed through a study of its sensitivity(Se),specificity(Sp), positive predictive value (PPV),negative predictive value (NPV) and evaluation of the relative risk (RR). The predictive factors of a high score of TRST were determined by logistic regression analysis. RESULTS: The study included 102 patients aged 74 +/- 6.6 years on average. Mean hospital stay in their first admission was 1.76 +/- 1 days. Among these patients, 38% of them were rushed to hospital again during the following 30 days, 22.5% had to be admitted to the ED, and 11% were referred to another department. The test's sensitivity at 30 days (score >1) was 79% and its specificity was 41% with a PPV of 45%, a NPV of 76% and a RR of 1.87. For a score >2, the test's sensitivity at 30 days became 44%, and its specificity 79% with a PPV of 56%, a NPV of 70% and RR equal to 1.86. When the score considered was >3, the test's specificity was 95% but its sensitivity diminished (25%) with a PPV of 77%, a NPV of 67% and a RR equal to 2.33. Logistic regression analysis showed that length of the hospital stay was predictive of a score of TRST >1.
CONCLUSION: A TRST score >1 can be considered as an acceptable threshold for identification of elderly patients at risk of being readmitted to an ED. This score is independently related to the length of the stay in the ED.

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ABSTRACT FINAL ID: OS32-C;

TITLE: Preventative & Interventional Measures to Reduce Falls in the Community-dwelling Elderly: Are they Warranted?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Falls are a major threat to the health of the elderly and are a common presenting complaint to Emergency Departments. Some of the contributing factors may be modifiable in the primary care setting, potentially reducing the number of presentations to Emergency Departments. This study aimed to determine the main reasons why those ≥ 65 years present to the Emergency Department. It also aimed to establish if an abnormal 'Timed Up & Go' test (>15 seconds) independently or in conjunction with other selected variables was prognostic of falls in the study population. METHODS: This was a retrospective, cohort study of people ≥ 65 years who presented to the Emergency Department, Cork University Hospital (CUH) between 1st August 2008 and 11th November 2009. Data was collected from the Patient Information Management Solutions (PIMS) system and by direct chart review. RESULTS: 8467 people ≥ 65 years presented to the Emergency Department in the study period. Primary reasons for presentation as recorded at triage included limb problems 25.5%; unwell adult 15.5%; falls 9.5% and chest pain 8.9%. Abnormal 'Timed Up & Go' test was not in itself prognostic of a fall in the study group, however a number of the other variables were indicative of an increased risk of falling. CONCLUSIONS: Falls accounted for 9.5% of the presentations during the study period. The aetiology of falls in this population can be complex but there are a number of modifiable factors which have been recognised and could be managed at primary care level.

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ABSTRACT FINAL ID: OS32-D;

TITLE: The Effect of Polypharmacy on the Clinical Periods of the Elderly Patients Admitting to the Emergency Service

ABSTRACT BODY:

Abstract Body: OBJECTIVE: To evaluate the relation between the number of drugs used by patients and the processes of the elderly patients (≥65 yo) in the emergency department (ED). METHODS: Patients ≥65 yo were studied during Nov 2010-Oct 2011 at a 3rd level university ED where the admittance were 54.000 annually. We noted sex, symptoms, triage category, Glasgow Coma Score (GCS) scale, mini-mental test (MMT), instrumental activities of daily living (IADL) scale, co-morbidity, numbers and types (surgical or medical) of consultations, tests, numbers and types of drugs used by patients, duration time in the ED and outcomes. RESULTS: Mean age of 1060 patients was 73.8±7.9 (65-97). 52% were male. Symptom types are listed in Table 1. Triage 1, 2,3 categories were 58.3%, 16.8%, 24.9% respectively. Mean scale of GCS, MMT, IADL were 14.5±1.6, 19.0±10.9, 16.7±5.3 respectively. The most frequent co-morbidities were hypertension (59.8%), diabetes mellitus (24.8%), coronary artery disease (20.8%),and COPD (16.4%). Consultation rate was 39.8%. Consultation type was generally medical (78%). Rate of 1 consultation was 88.2%, 2 was 10.2%, 3 was 1.4%. 89.1% tests were studied at emergency lab. Patients used 0-5 drugs at the rate of 78.9%, 6-9 at 19%, ≥10 at 2.1%. Drug groups noted are in Table 2. Mean duration time in the ED was 188.1±126.67 min (10-885). 70.4% of patients were discharged from ED. 14.8% of patients were interned into intensive care unit (ICU) and 10.9% into a service. No relation between numbers of drugs and hospitalization. Patients over 75 yo had 3 times higher rate of medical consultations. Patients with cardiac and neurologic symptoms had 10.4 and 10.3 times higher rate of ICU hospitalizations. Internalization rate into a service and ICU were of 2.67 and 2.9 at MMT score range 0-23. Internalization rate into a service and ICU were of 6.1 and 7.8 at IADL score range 0-8. No relation between numbers of drugs and scores of GCS, MMT, IADL. CONCLUSION: Pharmacotherapy can effectively cure, prevent or alleviate many conditions and improve quality of life but with aging there is an increased risk of drug-related problems.

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ABSTRACT FINAL ID: OS32-E;

TITLE: Elderly Patient Emergency Department Utilization Patterns from 2002 to 2010

ABSTRACT BODY:

Abstract Body: OBJECTIVE AND METHODS: We studied changes in presentation and outcomes of aged patients in the Emergency Department (ED) of Verona (Italy) from Jan 2002 to Dec 2010. RESULTS: During this period, total patients visiting the ED decreased from 70,111 a year (2002) to 50,835 a year (2010) while elderly patients increased from 31.1% to 48.0% with a constant slight prevalence of males (56%). The increase is more evident in the eldest when dividing the geriatric population into age groups of elderly patients: 65-75 years: from 15.4% to 19.9%; 76-85 years: from 11.1% to 19.1%; >85 years: from 4.5% to 8.9%. Old aged patients arrived in the ED with ambulance more frequently then elderly (65-75 yrs: from 18.5% to 16.9%; 76-85 yrs: from 33.1% to 30.6%; >85 yrs: from 56.6% to 55.4%) but more than two thirds of the ED admissions were by self-presentation of the patient without medical consultation (65-75 yrs: from 81.5% to 83.4%; 76-85 yrs: from 76.2% to 81.2%; >85 yrs: 69.6% to 77.5%). According to triage criteria in our ED, we observed an increase of the patients tagged as T1 and T2 (higher disease acuity): 65-75 yrs: from 22.8% to 24.9%; 76-85 yrs: from 28.4% to 31.4%; >85 yrs: from 36.7% to 40.9%. Medical problems were the most frequent cause of ED presentation with increasing figures from 2002 to 2010 in all 3 age groups. We observed a decrease of the admission rates in all the age groups (65-75 yrs: from 22.2% to 18.9%; 76-85 yrs: from 36.3% to 27.9%; >85 yrs: from 50.5% to 42.8%) but higher disease acuity patient's admission rates increased (65-75 yrs: from 46.1% to 59.6%; 76-85 yrs: from 45.1% to 65.1%; >85 yrs: from 24.7% to 27.4%). During the study period admission rates in men was higher than women mostly in eldest age group (65-75 yrs: from 57.3% to 59.4%; 76-85 yrs: from 45.5% to 45.3%; >85 yrs: from 65.7% to 71.8%). CONCLUSION: Elderly are increasing in the general population of Western countries but also in overcrowded EDs. Better targeted admissions and restoring the filter by treating physicians may be a countermove to the increase of ED self-presenting elderly patients: the risk is paralysis of the ED but also of the hospital itself.

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ABSTRACT FINAL ID: OS32-F;

TITLE: S100B Protein as a Reliable Biomarker for the Diagnosis of Minor Head Injury: The French STIC-S100 Prospective Multicenter Study

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Cranial Computed Tomography (CCT) is commonly used as a diagnostic tool for minor traumatic head injury (MHI). In 80-90% of patients with MHI who undergo a CCT, the scan is normal. Moreover CCT is not always available, costly and exposes subjects to X-ray. Due to specificity of its cellular expression, S100B protein, a constitutive protein of glial cells, is a useful biological marker of acute brain damage. METHODS: The French STIC-S100 study is a multicenter cohort study which aims to determine the prognostic value of the early determination of plasma S100B levels in patients with MHI. 459 adult patients admitted to the Emergency Department for MHI were prospectively enrolled. Plasma S100B levels were determined at arrival (within 3h after trauma) and 3h later. CCT was systematically performed as the gold standard to confirm or eliminate the existence of brain damage. RESULTS: CCT revealed intracerebral lesions in 19% (n=87) of the enrolled population. S100B levels were significantly higher in these patients as compared with patients with a normal CCT. Sensitivity and Negative Predictive Value (NPV) when S100B was measured in the early hours after trauma are high. Determination of S100 levels 3h after admission did not appear informative for the diagnosis of brain damage, but showed a decrease in plasma S100B levels in most of the patients. CONCLUSION: Our results agree with those reported by Biberthaler and al. (Shock, 2006), and confirm the interest of S100 blood level determination for the exclusion of brain damage in patients admitted to the Emergency Department for MHI.

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ABSTRACT FINAL ID: OS32-G;

TITLE: Prognostic Value of Pro-BNP in Pulmonary Embolism at the Emergency Department

ABSTRACT BODY:

Abstract Body: OBJECTIVE: To evaluate the clinical utility of pro-B-type natriuretic peptide (proBNP) in the prognosis of pulmonary embolism. Background: It has been demonstrated that proBNP, which is the precursor of BNP and NT-proBNP, had less crosslink reaction in the laboratory tests, and should theoretically be a more stable marker of the right ventricular stretch to be used in the prognosis of the pulmonary embolism (PE). METHODS: The study is ancillary to a published multicenter study comprising 570 patients with PE[a]. ProBNP values were analysed with (proBNP1-108, Bioplex2200TM; Bio-Rade Laboratories). Data were compared with BNP and NT proBNP from the original study. Bad outcomes were defined as 30-day adverse events: death, secondary cardiogenic shock or recurrent venous thomboembolism. A receiver operating curves (ROC) analysis compared the prognostic performance between peptides. RESULTS: 42 of the 570 PE patients presented a bad outcome (7,3%). All 3 natriuretic peptides were significantly elevated in those 42 patients in comparison with the uncomplicated group (BNP: p=0,000036, NT-proBNP: p=0,000006, proBNP: 0,0044). The areas under the ROC were respectively 0.7234±0.0511 for BNP; 0.7113±0.0481 for NT-proBNP and 0.6570±0.0519 for proBNP, which means that the performance of pro-BNP is significantly lower than the two other peptides. After comparison between every couple of peptides, proBNP is less correlated to the prognosis of adverse events (proBNP – BNP: p=0.0099 and proBNP – NT-proBNP: p=0.005). CONCLUSION: ProBNP, like the classical BNP and NT-proBNP, demonstrates a significant increased value in patients with adverse outcomes after PE. Nevertheless, the discriminatory power of proBNP for separating a bad from a good outcome is lower than the two other natriuretic peptides, limiting the clinical interest of proBNP as a prognostic marker in PE.

[a] Sanchez O. et al, Prognostic factors for pulmonary embolism Am J Respir Crit Care Med. 2010 Jan 15;181(2):168-73.

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ABSTRACT FINAL ID: OS33-A;

TITLE: A High Sensitivity Troponin above Cut Off early after ER Admission as Predictor of High Short-term Mortality

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Troponin is the biological marker of choice for diagnosis of acute coronary syndrome since it is produced and released only by myocardial cells and elevated circulating levels are found in any pathological situation in which there is a heart damage. Moreover troponin is known to be a marker of higher mortality but the effect of the recent introduction of a new ultrasensitive troponin assays has yet to be clarified. Aim of the study: assess the role of our ultrasensitive troponin assay in predicting short-term mortality in a ED setting. METHODS: From October 2009 to January 2010 we retrospectively analyzed patients admitted to ER and requiring troponin assays (troponin I AIA 360, TOSOH) according to hospital protocols and physician sight and we assessed the mortality at 90 days. RESULTS: 1658 patients met the inclusion requirements, 227 (13,7%) of whom had a troponin above the cut off set by our internal procedure (0.06 ng/ml) at the sample collected just after the ER admission visit and were immediately handled according to initial diagnosis whereas 40 (2,4%) showed an above cut off troponin in a subsequent sample. The mortality at 90 days in the first group was 13,7% vs 7,5% in the last group ($p<0,01$). The 90-day mortality was higher in female (16,9%) and in patient suffering from disease other than acute coronary syndrome (23,5%), irrespectively of age and troponin levels above the cut off. CONCLUSION: High sensitivity troponin assay above the cut off seems to be a good predictor of short-term mortality independently from levels and especially in female and for diagnosis other than acute coronary syndromes.

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ABSTRACT FINAL ID: OS33-B;

TITLE: Appropriateness of Cardiac Biomarkers Laboratory Testing in the ED: Can it Lead to an Effective Cost Reduction without Impairing Diagnostic Performance?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: A better organization of Emergency Departments (ED) should be the first step in pursuing cost reduction as well as improving diagnostic and therapeutic performances in the emergency setting. In our Level I ED admitting about 40.000 patients per year, substantial changes in this direction were made during the last two years, with the progressive creation of a dedicated medical staff specifically trained in Emergency Medicine. We noticed that the number of myoglobin and Creatine Kinase-MB (CK-MB) tests requested by the previous staff of our department had been very high compared to the need of these exams, according to current literature, in the diagnostic process of Acute Coronary Syndromes(ACS). METHODS: In early 2010 we implemented a modification to the ED software making it less easy to request CK-MB and Myoglobin, removing them from the laboratory routines but leaving them still available to be manually requested. This was decided following a revision of the most recent scientific literature, according to which it's no longer necessary to perform all three cardiac biomarkers to confirm/rule out a suspect diagnosis of ACS. The high sensitivity Troponin-I (Tn-I) is considered the most sensible and specific for ACS and it's safe enough to just perform serial ECGs and detect Tn-I levels at predefined intervals, during the observation of the patient admitted for chest pain without diagnostic ECG modifications. We then calculated the number of CK-MB and Myoglobin requested at the end of 2010 and compared them to the request of such exams in 2008. We also calculated, for the same time period, the number of admissions to the Coronary Care Unit (CCU) and to the Cardiology Ward with a diagnosis of ACS, including ST-Elevation Myocardial Infarction (STEMI), Non-STEMI and Unstable Angina. RESULTS: Tables 1 and 2 present the results of our study. CONCLUSIONS: In conclusion we can affirm that an accurate monitoring of the appropriateness of exams requested in our ED led to an effective reduction of costs without any impairment in diagnostic performance.

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ABSTRACT FINAL ID: OS33-C;

TITLE: Mid-Region ProHormone Adrenomedullin Identifies Acutely Dyspneic ED Patients with High 90 day Mortality: Results from the BACH Trial

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Adrenomedullin (ADM) is a vasodilatory peptide expressed in many tissues. Results from the BACH (Biomarkers in Acute Heart Failure) Trial have shown that Mid-Region Pro-Adrenomedullin (MR-proADM), a stable precursor of ADM, has superior accuracy for predicting 90 day mortality when compared to BNP (73% v 62% respectively, p<0.001) in ED patients with AHF. This analysis was computed to determine the prognostic ability of MR-proADM in all enrolled patients, irrespective of the final diagnosis. METHODS: The BACH trial was a prospective, 15-center, multinational study of 1641 patients presenting with a primary complaint of acute dyspnea. The study was approved by the IRBs of all centers. This data set was analyzed to determine the prognostic accuracy of the initial ED MR-proADM measurement for predicting 90 day mortality in all enrolled patients. Plasma specimens were stored at -70 C and MR-proADM levels were measured in a central lab. RESULTS: Of the 1641 enrolled patients 34.6% were adjudicated to have AHF, 12.2% COPD, 7.0% asthma, 6.8% pneumonia, 6.5% chest pain of unknown etiology, 3.7 % bronchitis, 3.4% arrhythmia, 2.4% ACS, 2.3% pulmonary embolism, 1.6% influenza and 18.5% with an alternate final diagnosis. Compared to BNP or Troponin, MR-proADM was superior for predicting 90 day all cause mortality in this entire patient population (p<0.0001, c index 0.755). MR-proADM added significantly to all clinical variables (all adjusted HR > 3.28) and was superior to all other biomarkers measured in predicting mortality at 90 days. MR-proADM added significantly to the best clinical model [p< 0.0001, bootstrap corrected c index increased from 0.775 to 0.807, adjusted standardized HR 2.59 (1.91-3.50)]. Within the model, MR-proADM was the largest contributor to the predictive performance, with a net reclassification improvement of 8.9%. CONCLUSIONS: MR-proADM identifies acutely dyspneic ED patients with high 90 day mortality, adds prognostic value to the natriuretic peptides irrespective of the final diagnosis and appears to be symptom specific.

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ABSTRACT FINAL ID: OS33-D;

TITLE: Role of Copeptin in Patients with Chest Pain: the ROSSINI Trial

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Copeptin, the C-terminal fragment of pro-hormone AVP, is a marker of the releasing of AVP in the body. Our aim is to evaluate if initial levels of copeptin < 14 pmol/l combined with a negative Tn-T can correctly rule out the diagnosis of acute myocardial infarction, as suggested by recent studies, as well as of other life-threatening causes of chest pain. METHODS: This is an observational, prospective, multicentric study, ongoing in several hospitals of Milan. We present the results of the first 178 patients of two hospitals, referring to the Emergency Room with the leading symptom chest pain started in the previous eight hours. Mean age of patients (68% males) was 57 ± 16 yrs. Clinical evaluation of patients included ECG and blood exams (Tn-T cut off<0.03 µmol/l). RESULTS: Patients were divided into three groups according to the final diagnosis: SCA (Acute Coronary Syndrome - STEMI, NSTEMI, unstable angina); Potentially lethal diseases not SCA (aortic dissection, pulmonary embolism, pulmonary edema, sepsis); Not potentially lethal diseases. Copeptin levels were significantly higher in patients with STEMI and NSTEMI as compared to patients with other diagnoses, while in patients with unstable angina values of copeptin were similar to those of patients with other diagnoses. The combination of copeptin and troponin-T reached a negative predictive value of 99.1% (CI 95.3-100) for SCA, of 98.2% (CI 93.9-99.8) for other potentially lethal diseases non-SCA and of 96.6% (CI 91.5-99.1) for all potentially lethal diseases (SCA + others). There was a positive correlation between values of copeptin and levels of glucose, urea and the presence of artery disease. CONCLUSIONS: Values of copeptin were significantly higher in patients with STEMI and NSTEMI and other potentially lethal diseases than in patients with other diagnoses; in patients with unstable angina, values of copeptin were similar to those of patients with non potentially lethal diseases. The combined use of troponin and copeptin significantly improved diagnostic accuracy of troponin alone, both in SCA (STEMI and NSTEMI) and in all potentially lethal diseases.

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ABSTRACT FINAL ID: OS33-E;

TITLE: Acute Coronary Syndrome Rapid Rule Out using Copeptin: The Arrow-c Pilot Study

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Copeptin is a stable and reliable marker of endogenous stress response. In two previous academic studies performed in a cardiology setting, copeptin played a significant role in the rapid rule out of Acute Coronary Syndrome (ACS) especially when emergency room ER admission occurred within 3 hours after chest pain onset. The aim of the study is to define the efficacy of copeptin in ruling out ACS just after first troponin assay in a unselected cohort of patients admitted to ER with chest pain and considered by the attending physician worthy to follow the chest pain local protocol using high sensitivity troponin I in a non academic emergency staff setting. METHODS: From February to March 2011 we recruited 166 consecutive patients admitted to the ER and requiring, according to the attending physician in charge, to undergo the chest pain protocol. Blood sample for the copeptin assay was collected at the admission for each patient but the results remained blinded to the physician in charge. The copeptin cut-off value was 14 pmol/l. Routine laboratory parameters were measured, risk factors for coronary disease collected, and BMI calculated at the moment of the admission. RESULTS: 119 patients had first troponin under the cut off value (0.06 ng/ml), 107 of them not having an ACS and therefore treated according to final diagnosis. No patients having ACS had copeptin above cut off value irrespective of delay between chest pain onset and ER admission, BMI, creatinine and coronary disease risk factors. 74% of the 107 patients not having ACS copeptin was below the cut-off value. Positive LR for copeptin as cardiac necrosis marker is 3,8 (95% C.I. 2,611 to 5,085); negative predicting value for copeptin is 1. CONCLUSION: Copeptin is an accurate and effective tool to rule out ACS since almost 3/4 of patients admitted to ER for chest pain and not having ACS could be safely discharged just after first blood samples so reducing lenght of stay in the ER, saving money and avoiding waste of working time for physician and nurse staff. Larger multicenter studies are warranted to confirm these data.

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ABSTRACT FINAL ID: OS33-F;

TITLE: Procalcitonin in Severe Acute Asthma in Intensive Care Unit
Experience of Medical Intensive Care Unit of the CHU Ibn Rushd, Casablanca - Morocco

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Procalcitonin is a biomarker of bacterial infection. During severe acute asthma exacerbations, antibiotic prescribing is excessive and sometimes unjustified. It also contributes to intensive care unit antibiotic resistance added to its cost. Thus, procalcitonin helps diagnosis of bacterial infection but also in monitoring antibiotic therapy during exacerbation of asthma. The aim of our study was to evaluate the contribution of this marker in the middle of resuscitation in severe acute asthma. METHODS: A prospective study was conducted in the medical intensive care unit of the university teaching hospital Ibn Rushd in Casablanca Morocco, spread over 2 years (January 2008-January 2010). It included all patients admitted to intensive care for acute asthma. procalcitonin is requested systematically to the admission of these patients. If procalcitonin (PCT) is <0.5 ng/ml no antibiotic is introduced. If the PCT was> 1ng/ml, an antibiotic treatment is decided. The PCT is performed routinely on day 5 of antibiotic therapy, even if it is negative down the antibiotic is effective. RESULTS: Our study included 41 patients admitted to intensive care for severe acute asthma. The sex ratio M / F is 0.78 and the average age of patients was 25 years. 75% of patients required intubation and assisted ventilation. Procalcitonin is performed routinely for all patients. It was negative in 56% of patients admitted for severe acute asthma, therefore antibiotic use was not started. If procalcitonin is> 1ng/ml, an appropriate antibiotic therapy is instituted. At the fifth day, a check is made to the PCT, it declined even turned negative in 83% of cases. CONCLUSION: Antibiotic abuse is a major problem in the therapeutic management of acute asthma grave. Procalcitonin helps guide and think this requirement but also to monitor its effectiveness.

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ABSTRACT FINAL ID: OS35-A;

TITLE: Medical Students' Perceptions of an Emergency Medicine Clerkship: An Analysis of Self Assessment Surveys

ABSTRACT BODY:

Abstract Body: OBJECTIVES: To investigate whether undergraduate medical students rotating through an EM clerkship improved their understanding and abilities in core content areas and common procedural skills; to evaluate whether improvement was effected by rotation length. METHODS: Students participating in an EM clerkship were asked to complete anonymous pre- and post-rotation surveys. Confidence with assessment, diagnosis, and management plans; trauma and medical resuscitations; procedure skills and understanding of the practice of EM were self assessed on a Likert scale. The mean scores on each survey item, both pre- and post-clerkship were calculated and compared between two- and four-week clerkship rotation groups. RESULTS: Of the 239 students who completed the rotation, 161 (67.4%) completed the pre-rotation survey and 96 (40.2%) completed the post- survey. Students showed significant mean gains in confidence with initial assessment, diagnosis, and management plans ($p<0.01$, 0.02, <0.01) and procedure skills ($p<0.01$ for all). Students completing a 2-week rotation did not differ significantly from 4-week rotators in confidence levels, except in the area of formal presentation skills ($p=0.01$), where the 4-week students had a statistically significant advantage. The 2-week clerks were significantly less confident in all procedures except EKG interpretation, splinting, and venipuncture ($p=0.28$, 0.22, 0.05). Regardless of rotation length, students felt they had sufficient exposure to patients and opportunities for hands-on learning and practice, and overwhelmingly would recommend the EM clerkship to a fellow student, regardless of their chosen specialty. CONCLUSIONS: Medical students show significant gains in confidence with acute care knowledge, disease management, and procedure skills after completion of an EM clerkship. Although a 4-week clerkship may be preferable to expose students to the widest variety of patients and procedures, all students can benefit and improve in core competencies after an EM undergraduate experience.

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ABSTRACT FINAL ID: OS35-B;

TITLE: Italian Medical Students and Disaster Medicine: Awareness and Formative Needs

ABSTRACT BODY:

Abstract Body: OBJECTIVE: During the last century the number of disasters has remarkably increased; therefore a specific preparation to face the consequences of these events is needed. According to the Italian deontological code, any physician should be on hand during the different phases of disaster preparedness and response and a specific academic preparation should enter in the curriculum of studies of a medical student. On this basis we enquired the perception of medical students about mass casualty incidents and disasters and if and how these topics are part of their academic studies. METHODS: A web-based survey was disseminated to Italian Medical Students registered to the Italian Medical students secretariat (SISM), the Italian medical students associated to the International Federation of Medical Students Associations (IFMSA). The survey was composed of 15 questions divided into 4 sections: personal data, disaster medicine awareness, previous attendance to courses on disaster medicine, and opinions about the need for Disaster Medicine teaching at the undergraduate level. Frequencies and proportions were calculated. RESULTS: 274 medical students completed the survey; 40,1% had never heard about Disaster Medicine; 91,9% have never attended elective academic Disaster Medicine courses; 84,7% have never attended non-academic Disaster Medicine courses; 93,1% would like to have in their core curriculum a Disaster Medicine course; 93,8% believed it is important for their future career to be taught about disaster medicine. CONCLUSIONS: Most surveyed medical students in Italy have never attended both academic and non-academic Disaster Medicine courses during their medical school program. Moreover the survey reveals the interest of responders to increase their knowledge by introducing Disaster Medicine into their core curriculum.

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ABSTRACT FINAL ID: OS35-C;

TITLE: Should Disaster Medicine be Part of Academic Medical Education? The Students' Opinion.

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Since September 2010, our research centre (CRIMEDIM) has been collaborating with the Italian Association of Medical Students (SISM) in a nation-wide project (DisasterSISM) to explore educational needs in disaster management at the undergraduate level and to deliver teaching courses on the basics of Disaster Medicine (DM) in many medical schools. At the end of the course, the students were asked to give their opinion on the needs of a medical student to have a basic knowledge on DM. METHODS: The course was organised on an e-learning platform (7 days access) and a 2 days residential course. During the web-phase they had access to the teaching material organised in modules (General principles, Triage, Incident Command System, Approach to different kind of disasters). In the residential part, topics were proposed in an interactive and problem based teaching; in the last half day they participated in a computerized simulation using the ISEE simulator1, the end-product of EU Leonardo da Vinci project. An evaluation questionnaire to explore their approach to DM was submitted. RESULTS: A total of 150 (35% M; 65% F) medical students from 7 medical schools enrolled in the course to date. 85% were in the last two years of medical school. As regards the future field of work, they were mainly oriented to Internal Medicine (49%), Emergency Medicine (22.3%), Surgery (14.7%), Public Health (3.5%), others (10.5%). Their expectation for the course was very high in more than 86.3%. At the end of the course, 81.5% suggested that Disaster Medicine must be added in Academic Medical Education; 98% believed that all MD must have a basic knowledge in DM, 95% supposed the knowledge acquired within the course would be useful in their future practice. They enjoyed the format of the course (87% considered it as excellent). CONCLUSIONS: Medical students of the last two years believe that DM should be part of their curriculum of study independent of their interest for the future career. The application of simulation and E-learning were identified as useful and pleasant tools to be used.

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ABSTRACT FINAL ID: OS35-D;

TITLE: Perceptions of Graduates from Africa's First Emergency Medicine Training Program

ABSTRACT BODY:

Abstract Body: OBJECTIVES: Africa's first post-graduate training program in emergency medicine (EM) was established at the University of Cape Town/Stellenbosch University (UCT/SUN) in 2004. The program has produced 30 graduates who are practicing, teaching, and leading EM. We aim to understand the background of the trainees; identify the strengths and weaknesses that they perceived in their training program; and describe the major challenges to the development of EM as a specialty in South Africa. METHODS: The study population was compromised of graduates from the first four classes in the UCT/SUN EM program (2007-2010). Twenty-seven (90%) responded to requests for interview. Face-to-face interviews were conducted for the 24 in the Cape Town area; the remaining 3 were interviewed over the phone. We employed a 25-item survey questionnaire with both closed- and open-ended questions. Interviews were conducted solely by the first author. RESULTS: All of the graduates (100%) were from South Africa, with most from major urban areas (89%). The majority of graduates reported that their training prepared them well to practice independently at urban EDs (93%) and rural EDs (81%). The three most commonly cited strengths of their program were diversity of rotations (85%), autonomy (63%), and importance of being pioneers within Africa (52%). The three most commonly cited weaknesses were lack of bedside teaching in the ED (96%), lack of clear career options after graduation (74%), and lack of research training (70%). Major challenges identified to development of EM in South Africa were political will of government to fund EM posts (100%); respect and recognition from other specialties (100%); and spread of EM beyond cities to rural areas (59%). CONCLUSIONS: Africa's first EM training program has produced four classes of graduates to date. The lessons identified from these graduates include the perceived strengths and weaknesses of this path-finding program and potential challenges to the development of EM in South Africa. These findings may be useful for other developing countries looking to start EM training programs.

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ABSTRACT FINAL ID: OS35-E;

TITLE: Teaching Residents how to Teach: Effectiveness of a Teaching Retreat for Emergency Medicine Residents

ABSTRACT BODY:

Abstract Body: OBJECTIVE: According to the Accreditation Council of Graduate Medical Education, EM programs must provide structured learning activities that demonstrate how a program supports the development of teaching skills. Our specific objective is to describe the content and assessment of a teaching retreat for EM residents in preparation for their role as PGY-3 resident teachers. METHODS: Curriculum: A 1-day retreat is conducted each April for PGY-2 residents. Prior to the retreat, residents complete a questionnaire designed to identify self-assessed barriers to effective teaching. Retreat content is delivered using interactive lectures, simulated teaching scenarios, and case-based role-play of difficult teaching scenarios. Interactive lecture examples include: (1) 'Setting expectations with learners'; (2) 'Providing effective feedback'; (3) 'Finding teaching points in each case'; and (4) 'Providing effective supervision'. Medical students served as simulated learners for the following: (1) abscess incision and drainage; (2) suturing; and (4) effective consultant interaction. Case-based role play scenarios included: (1) 'The late arriving student'; (2) 'The apathetic student'; (3) 'The overly aggressive student'; and (4) 'The inappropriately dressed student'. To assess effectiveness following the retreat, residents completed a 10-item survey tool using a 5-point Likert scale. Responses for 'moderately effective' and 'very effective' were pooled to indicate overall effectiveness. RESULTS: 16 of 19 residents completed the post-retreat survey. The overall effectiveness for each section of the retreat were: interactive lectures (88.5%), simulated teaching scenarios (66.7%), and case-based role play scenarios (100%). All 16 respondents (100%) reported that the retreat reduced anxiety while improving comfort in anticipation of becoming an EM PGY-3. CONCLUSIONS: A 1-day retreat model effectively reduces pre-conceived anxiety regarding teaching while providing instruction on effective teaching skills.

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ABSTRACT FINAL ID: OS35-F;

TITLE: Ultrasound in Medical Education

ABSTRACT BODY:

Abstract Body: OBJECTIVE: While there is ample research on the best approach to resident training in bedside ultrasound (BUS), little has been reported on medical student ultrasound. The study aim is to establish baseline knowledge and compare the progress of first and second year medical students' (MS1 and MS2) in Ultrasound in Medical Education (USMedEd) our institution. METHODS: MS2s received 10 hrs of BUS training with little hands-on experience in the 2009-2010 school year. In August 2010, before any USMedEd training began, MS1 and MS2 BUS knowledge was assessed. Students completed written and hands-on practical pre-tests. Topics covered included ultrasound physics, knobology, anatomical scanning planes, artifacts, window acquisition, optimization, and interpretation. USMedEd curriculum is designed to teach these subjects with extensive didactic and hands-on instruction. Both groups complete written exams after all training sessions. RESULTS: MS1 mean scores for written/practical pre-tests were <35%,<8% respectively, <44%,<13% for MS2s. After 6-8 hours of training over the 6 months, skills of both groups were. The mean scores for MS2s increased to 75% while the mean, median, and mode of the MS1s reached 63%, 68%, 74% respectively. CONCLUSION: The initial results demonstrate that previous MS2's BUS training was insufficient and their 31% improvement could be attributed to their completion of Anatomy and Physiology in Spring 2010, which current MS1s have not. We propose that by Spring 2011 USMedEd will: 1. Enhance understanding of clinical relevancy of history and physical and 2. Improve scores in medical school examinations for both groups when compared to their counterparts who did not participate in the BUS Curriculum.

AUTHORS/INSTITUTIONS: J. Fox, G. Maldonado, S. Lotfipour, Medical Education, UC Irvine School of Medicine, Irvine, CA;

ABSTRACT FINAL ID: OS36-A;

TITLE: Medical Students Performing Independent Ultrasound in the Intensive Care Unit

ABSTRACT BODY:

Abstract Body: OBJECTIVE: There is increasing prevalence of non-cardiology medical personnel using portable ultrasound at the bedside to expand physical exam findings. To increase medical personnel awareness and to further integrate portable ultrasound use into medical education, a third year student clerkship was devised where students independently performed the Rapid Ultrasound In Shock1 exam on intensive care unit (ICU) patients. METHODS: Three ultrasound naïve medical students enrolled. To prepare for this experience, the students watched three hours of online video tutorial followed by a one-hour live lecture and a one hour hands on training session. At the end of training, the students were required to pass a written test and a practical exam on a standardized patient. The scans were performed in the surgical ICU, medical ICU and the cardiac care unit of an academic medical center. The students performed the majority of the scans together and independent of faculty; however, there was an ultrasound trained faculty member with them on their first day in the ICU and available at all times during the scanning sessions. Throughout the two weeks there were three days of direct faculty mentoring on ultrasound techniques while performing scans on patients. All images were reviewed by an experienced sonologist with the students at the end of each week. RESULTS: During the two-week elective, the students examined a total of 27 patients and performed 127 separate scans. On each patient, students performed: a limited echocardiogram, visualized the inferior vena cava to assess fluid status, performed a pneumothorax and pleural effusion screen, a deep vein thrombosis screen and a FAST scan2. Other scans looking for gallstones, appendicitis, abscesses and hydronephrosis were done as needed. At the end of the clerkship, the students were able to consistently acquire images in a relatively time efficient manner and were exposed to a wide variety of normal and abnormal processes. CONCLUSION: To our knowledge, this is the first reporting of ultrasound naive third year medical students independently performing a wide variety of scans in the ICU.

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ABSTRACT FINAL ID: OS36-B;

TITLE: Investigating Interest in Emergency Medicine Among Medical Students in the Netherlands

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The development of Emergency Medicine (EM) at medical schools in the Netherlands is just getting started. After the success of the Rotterdam study where interest in EM among medical students of the Erasmus University Medical Center of Rotterdam was investigated and has led to the founding of an EM student organization in Rotterdam in 2007, we decided to explore if all medical students would be interested in EM and joining an EM student organization by repeating the Rotterdam study at every medical school in the Netherlands.
METHODS: A ten-point questionnaire was distributed among first, second and third year medical students of 6 of the 8 medical schools. It was distributed either during lectures, exams or mandatory classes. RESULTS: A total number of 3474 questionnaires were distributed among the medical students who were present during the conduction. A total of 2476 medical students filled out the questionnaire, a response rate of 72%. The results of this study show that there is a lot of interest for EM and an EM student organization among medical students. CONCLUSION: Although there is a lot of interest for EM among medical students, there are not many options for students to further and explore their interest in this area. Not every medical school has the facilities within their curriculum to accommodate with such a program for EM. This is where an EM student organization can step in by organizing lectures and workshops and draw attention to the possibilities of doing research and clinical rotations at the Emergency Department (ED). We suggest that in imitation of Erasmus University Medical Center of Rotterdam, every medical school that has a positive outcome on this study should contact the ED affiliated with that medical school to discuss the founding of an EM student organization at their medical school, to accommodate in the interest of their students and contribute towards the development of EM at the medical schools.

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ABSTRACT FINAL ID: OS36-C;

TITLE: Implementation of a Lumbar Puncture (LP) Simulation Teaching Module

ABSTRACT BODY:

Abstract Body: OBJECTIVES: Traditionally resident education has been delivered through lecture format and bedside teaching, evolving to include procedurally based demonstrations. Many of our residents have increasingly desired more procedurally based simulation training. Our objective was to determine if implementation of a didactic and procedural LP module would enhance the knowledge and skills of EM-1 residents. METHODS: All seventeen PGY-1 EM, EM/IM, and EM/FM residents participated at a suburban tertiary care hospital for a prospective single group sequential (Before – After) study. Residents initially completed a questionnaire to assess their LP knowledge and performed an LP simulation assessing procedural skills. Subsequently they participated in an LP module lecture and simulation, emphasizing specific areas of deficiency. Following the teaching module, they repeated the questionnaire and performed a second simulation. Seven months later they repeated the questionnaire and simulation. Improvement in LP knowledge and skill level was assessed after the module and at study completion. RESULTS: LP test scores and procedural simulation scores improved significantly after the use of the teaching module, declined somewhat over seven months, yet revealed significant retention at study completion. Self perceptive LP knowledge (SPK) and skill level (SPS) on a 10cm visual analog scale (VAS) improved significantly. SPK decreased while SPS remained constant over seven months yet both revealed significant retention at study completion. This training method received a rating of 8.47 ± 1.01cm VAS. CONCLUSIONS: Resident education through a didactic and procedural module involving LP's can be used to enhance knowledge and skills of EM-1 residents, as well as maintain retention in the future.

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ABSTRACT FINAL ID: OS36-D;

TITLE: Obstetric High-Risk Delivery Scenarios: Benefits of Simulation Training of Rare but Critical Procedures

ABSTRACT BODY:

Abstract Body: OBJECTIVES: The delivery of a fetus, including complicated deliveries is required training in emergency medicine (EM) residency. No specific data exists regarding the number of “high-risk” deliveries required to achieve procedural competency. The objective of this study sought to identify the incidence of high-risk deliveries during EM residency training, assess residency knowledge and confidence in performing deliveries and deliveries through simulation. METHODS: The study in Washington, DC, at a tertiary-care center with the highest numbers of deliveries in DC. 21/24 EM residents (PGY-1,2,3) received didactic and simulation training of 4 deliveries: breech, shoulder dystocia, and precipitous with a nuchal cord requiring newborn resuscitation. A validated, pre-test assessing management of deliveries and a survey (5-point Likert scale) rating pre-training knowledge, skills and confidence level was completed by each resident. Following a didactic session, each resident received hands-on instruction and performed a simulated delivery for each scenario. Critical actions were reviewed and performed by each resident. A post-training survey and repeat didactic testing were completed 14 days later to assess retention and benefits of intensive OB simulation training. RESULTS: Mean pre-test score was 82% (IQR: 68-90) and post-test scores increased to 96% (IQR:92-99, P<.05). The mean pre-training knowledge and skill rating was 2.38 (IQR:2-3), and confidence in performing vaginal deliveries was 2.28(IQR:2-3). Post-training resident ratings increased to 3.07 for both categories. No resident has actually performed shoulder dystocia or breech deliveries. CONCLUSIONS: The ability of EM residents to perform high-risk deliveries is extremely limited. Intensive simulation training is beneficial in developing EM residents’ skills and confidence in such high-risk OB delivery scenarios. Simulation training is valuable, similar to the benefit of other rare but critical “orphan” procedures (i.e. transvenous pacing or tracheostomy). It provides a degree of actual “hands-on" ability for attempted life-saving interventions.

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ABSTRACT FINAL ID: OS36-E;

TITLE: Change in Resident Confidence and Self-Efficacy in Caring for Pediatric Emergencies with a Supplemental Simulation Curriculum

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Medical simulation provides an opportunity to practice care without putting patients at risk and for physician exposure to serious medical problems they may not manage routinely. Studies have demonstrated its utility in teaching team cohesiveness, trauma management skills and crisis resource management. This study sought to determine if simulation improved Emergency Medicine (EM) resident confidence and self-efficacy in dealing with pediatric emergencies. METHODS: EM residents completed an anonymous survey, assessing confidence (level of anxiety) and self-efficacy (knowledge/skills) for sixteen pediatric emergencies using a 9-point Likert scale. Participants set a keyword so that their pre and post-survey could be matched. The 24 residents (8 per training year) then took part in a new supplementary high-fidelity simulation-based pediatric EM curriculum. Eight topics were covered, and at the end of the year, residents repeated the survey on these 8 topics and the 8 topics they had only the routine clinical experience of residency. A mixed model was used to determine the effect of simulation on confidence and self-efficacy, as some of the survey results could not be paired. RESULTS: 96% of the residents (n=23) completed both pre and post surveys. There was a significant improvement in confidence and self-efficacy for both simulated and non-simulated topics ($p < 0.001$). The change in the difference between the means for simulated and non-simulated topics were also compared. This change did not achieve statistical significance for either confidence ($p = 0.11$) or self-efficacy ($p = 0.14$). CONCLUSION: Management of pediatric emergencies can be taught using high-fidelity simulation. After the institution of the new curriculum the EM residents showed significant improvement in confidence and self-efficacy. There was a trend toward more improvement for topics they received simulation training on; however, it did not achieve significance. This may have resulted from the small number of available participating residents, further research with larger numbers is needed.

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ABSTRACT FINAL ID: OS36-F;

TITLE: Correlation of Inservice Examination Scores with ACGME Core Competencies in an Emergency Medicine Residency Program

ABSTRACT BODY:

Abstract Body: OBJECTIVE: In recent years the ACGME Core Competencies have been introduced into Emergency Medicine (EM) training programs. Attempting to extend beyond standardized test-taking and medical knowledge alone prompted the designation of 6 areas: patient care (PC), medical knowledge (MK), interpersonal skills and communication (ISC), professionalism (P), system-based practice (SBP), and problem-based learning (PBL). In addition, residents take written inservice examinations each year. We sought to examine the relationship between inservice exam (IE) scores and core competencies (CC). METHODS: Prospective data collection of IE scores and CC for all candidates in a 3-year EM residency program. Data analysis performed only on subjects with 3 years of complete data. Statistical analysis performed via Pearson Correlation to determine significant relationships. RESULTS: 14 subjects were available for analysis. Statistically significant positive correlations were found between IE scores in all 3 years and Medical Knowledge (MK) only. (IE#1 to MK r^2=0.64, p=0.01; IE#2 to MK r^2=0.63, p=0.02; IE#3 to MK r^2=0.66, p=0.01; IE average to MK r^2=0.75, p=0.001) There were no significant negative correlations. IE scores did not correlate with PC, IS, P, SBP, PBL, or overall CC scores. CONCLUSION: This data suggest that IEs are a useful measure of medical knowledge only, but may not measure other important competencies in the EM physician. Although some CCs may be difficult to evaluate by standardized testing, future efforts may include broadening the inservice examination to better mirror the CC curriculum.

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ABSTRACT FINAL ID: OS36-G;

TITLE: Interest and Attitudes about Volunteerism in Emergency Medicine

ABSTRACT BODY:

Abstract Body: OBJECTIVE: New trends in residency curriculums have motivated medical residents to volunteer their services. Most of the articles discuss the benefits of volunteer experiences on the individual and/or the community. In a recent survey, the American College of Surgeons found great interest in surgically related volunteerism. Yet very little has been published on volunteerism in emergency medicine (EM). Our goal was to investigate the participation, interest and attitudes about volunteerism in EM residencies and their residents. METHODS: This cross-sectional study examines the participation, interest and attitudes about volunteerism in emergency physicians, namely EM residencies and their residents. An anonymous and voluntary questionnaire was sent via e-mail to all EM residencies, available through the American Medical Association Graduate Medical Education website. The survey was made available from December 2009 to March 2010. Statistical analysis was performed using Microsoft Excel 2007 and SPSS 16.0. RESULTS: The survey was made available to a total of 148 EM residencies and 173 answered surveys were collected. Of those that responded, 21% were program directors and 79% were residents, ranging from 1st – 4th year. One third of the residencies are directly affiliated with a community/volunteer project. Providing medical services for sporting events, sending teams to disasters worldwide and free clinics were among the top three activities that residents participated in. Of all the responses, 52% participate in some form of volunteering yet 83% are interested in participating. The majority of respondents (88%) agree that EM residencies should be involved in volunteer efforts. CONCLUSION: We conclude that emergency medicine residents are highly interested in volunteering for a wide variety of activities. Therefore, if residencies were to begin to offer community service as part of their program's benefits, both EM residents and the communities which they serve would receive abundant benefits. In addition, more studies are needed to determine other factors that attribute and prevent EM physicians and residents alike from participating in volunteer activities.

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ABSTRACT FINAL ID: OS37-A;

TITLE: Effect of Location of Out-of-Hospital Cardiac Arrest on Survival Outcomes

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Location of patient collapse may play a role in determining outcomes of out of hospital cardiac arrest (OHCA) patients. We aimed to study how location of collapse was related to factors commonly associated with OHCA outcomes, and whether survival differed for residential vs. nonresidential arrests. METHODS: This was a retrospective cohort study that used data from the Cardiac Arrest and Resuscitation Epidemiology (CARE) project and the Pan-Asian Resuscitation Outcomes Study (PAROS). OHCA cases from Oct 2001 to Jun 2010 were used, and all occurred in Singapore. Analysis was performed and expressed in terms of the odds ratio (OR) and the corresponding 95% confidence interval (CI). RESULTS: A total of 2670 cases were used for this analysis. Outcomes for OHCA in residential areas were poorer than in non-residential areas – 1860 (67.9%) patients collapsed in residential areas, and 16 (0.9%) survived to discharge. This was significantly less than the 3.1% of patients who survived after collapsing in a non-residential area (OR 0.272 [0.145 – 0.513]). Multivariate regression analysis showed that location had no independent effect on survival (adjusted OR 0.751 [0.239 – 2.359]); instead, underlying factors such as decreased bystander CPR (OR 0.242 [0.197 – 0.297]), fewer initial shockable rhythms (OR 0.395 [0.322 – 0.485]) and increased emergency medical service (EMS) response time (OR 1.201 [1.009 – 1.428]) gave rise to the poorer outcome. CONCLUSION: Location of collapse has an effect on OHCA outcomes, related to EMS response time and bystander CPR rates. Efforts to improve survival from OHCA in residential areas should include increasing CPR by family members, and reducing ambulance response times.

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ABSTRACT FINAL ID: OS37-B;

TITLE: Cardiac Interventions among EMS Identified STEMI Patients Brought to a Designated Cardiac Catheterization Center

ABSTRACT BODY:

Abstract Body: OBJECTIVE: National organizational guidelines recommend that patients with chest pain and EKG findings consistent with a ST segment elevation myocardial infarction (STEMI) or new onset left bundle branch block (LBBB) receive fibrinolytics within 30 minutes of arrival or percutaneous coronary intervention (PCI) within 90 minutes of arrival. In 2007 the New York City Emergency Medical Service (NYC EMS) developed guidelines for pre-hospital providers along with physician guided telemetry to identify potential STEMI patients, and transport them to designated 24 hour cardiac catheterization centers. Our objective was to determine the frequency of cardiac catheterization (CC) and revascularization procedures among NYC EMS STEMI notifications. METHODS: Retrospective chart review of all 205 STEMI notifications presenting to an academic ED between 11/27/07 and 7/4/10. Patients were categorized as having an emergent CC (directly from the ED), delayed CC (after hospital admission), or no CC during the hospitalization. Revascularization procedures were defined as PCI or coronary artery bypass surgery (CABG). RESULTS: The average age was 65 years (range 28-97) and 122/205 (60%) were male. There were 59/205 (29%) patients who went for emergent CC and 46/205 (23%) who went for delayed CC, resulting in a total of 105/205 (51%) of patients having a CC during their hospitalization. Of the 59 patients who had an emergent CC, 80% required PCI or CABG; of the 46 patients with delayed CC, 19/46 (41%) required PCI or CABG. A total of 32% (66/205) of all EMS STEMI notification patients were found to require a revascularization procedure during the hospitalization. CONCLUSION: Patients brought to the ED as a STEMI notification frequently had a CC, and 32% of all notifications requiring either PCI or CABG. This suggests the STEMI notification system in NYC is utilizing CC centers appropriately. Further work is needed to see if the current system can be improved, and also to determine whether patients are being brought inappropriately to non-catheterization centers.

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ABSTRACT FINAL ID: OS37-C;

TITLE: The Impact of Pre-hospital Continuous Positive Airway Pressure to an Emergency Medical Service Protocol on Persons with Severe Respiratory Distress

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The association between continuous positive airway pressure (CPAP) assisted ventilation, vital sign improvement, and reduced endotracheal intubation rates in both COPD exacerbation and acute decompensated heart failure (ADHF) have been described in the emergency department. The purpose of this study was to measure the efficacy of adding pre-hospital CPAP to the current severe respiratory distress protocol on patients with a complaint of respiratory distress. METHODS: The study was a retrospective historical cohort study, with data obtained from pre-hospital electronic medical records and emergency department charts at three institutions. Pretreatment physiologic variables (oxygen saturation, heart and respiratory rate) were obtained from first responders on-scene. Post treatment physiologic variables were obtained upon triage in the emergency department. RESULTS: There were 375 patients with criteria for severe respiratory distress, 235 historical controls matched with 140 post implementation patients. There were significant median differences in improvement of all physiologic variables favoring the historical cohort ($p < 0.05$). There was a significant difference in rate of ED intubations between the pre and post intervention groups, 15.9% versus 25% ($p = 0.015$). Within the post CPAP intervention cohort with a diagnosis of CHF/COPD, there was a difference in median overall hospital LOS with a 2 day difference favoring the group that did not receive CPAP in the ED ($p = 0.030$). There were no significant differences between overall historical and post intervention groups in overall hospital length of stay, rate of ICU admission, length of ICU admission, and hospital mortality (p's >0.05). CONCLUSION: The benefit of adding CPAP to our pre-hospital respiratory distress protocol is unknown as our historical group appeared to have significantly better physiologic variable improvement and lower intubation rates. Lack of differences in mortality and LOS may be partially explained by low baseline mortality and early treatment by San Diego EMS staff.

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ABSTRACT FINAL ID: OS37-D;

TITLE: A Pilot Study Examining the Viability of a Prehospital Assessment with UltraSound for Emergencies (PAUSE) Protocol

ABSTRACT BODY:

Abstract Body: OBJECTIVE: To determine if prehospital care providers can learn to acquire and recognize ultrasound images for several immediately life-threatening conditions (pneumothorax, pericardial effusion, cardiac standstill) using the Prehospital Assessment with UltraSound for Emergencies (PAUSE) protocol following a brief training session. METHODS: We conducted a prospective, educational intervention pilot study at an academic, urban emergency department. We enrolled twenty local emergency medical technicians at paramedic level (EMT-P), without any prior ultrasonography training. All subjects underwent a 2-hour training session on the PAUSE protocol. The PAUSE protocol consisted of ultrasonography of each hemithorax as well as focused transthoracic echocardiography (TTE) to evaluate specifically for pneumothorax, pericardial effusion, and cardiac activity. We tested each paramedic on their ability to acquire and interpret ultrasound images specified in the PAUSE protocol. The image acquisition phase required the paramedic to identify the pleural line in each hemithorax and obtain adequate cardiac windows on a live human model. Two bedside ultrasound trained emergency physicians scored each image for adequacy. The Cardiac Ultrasonography Structural Assessment Scale (CUSAS) was utilized to assess the quality of the focused TTE. CUSAS scores ≥ 4 were considered adequate to detect pericardial effusion and cardiac activity. For the image interpretation phase, each paramedic was tested on 10 simulated PAUSE protocol video clips, which contained ultrasounds of life threatening pathology as well as normal controls. RESULTS: For the image acquisition phase, all paramedics appropriately identified the pleural line, and 19/20 paramedics achieved a CUSAS score of ≥4. For the image interpretation phase, the mean PAUSE protocol video test score was 9.1 out of a possible 10 (95% CI 8.6-9.6). CONCLUSION: After a brief training session, paramedics were able to perform the PAUSE protocol and recognize the presence of pneumothorax, pericardial effusion, and cardiac standstill.

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ABSTRACT FINAL ID: OS37-E;

TITLE: Epidemiology of Burn-Related Ambulance Calls in Andhra Pradesh, India: A Prospective Analysis

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Burns account for 2% of all deaths in India. GVK Emergency Management and Research Institute (EMRI) provides toll-free ambulance service in Andhra Pradesh, India. The goal was to describe patients with a chief complaint of “burns” cared for in the prehospital setting and identify factors associated with death from burn injury. METHODS: In this prospective cohort study, we enrolled GVK EMRI ambulance activations with the chief complaint of “burns” over three weeks. Patients not found at the scene or that refused service were excluded. Patient data was collected by phone in real-time from prehospital care providers. Follow up information was collected at 48-72 hours, 7 days and 30 days. RESULTS: 65,895 ambulance activations occurred; 242 (0.4%) for “burns.” The follow-up rates at 48-72 hours and 30 days were 87% and 81%. 63% of victims were women. The median age was 27 years (IQR 20-38). Adults (age 18-64) accounted for 77% of patients, followed by children (age <18, 18%) and the elderly (age >64, 5%). Most burns occurred in homes (87%) and urban settings (68%). Flame burns accounted for 76% of patients’ injuries, followed by scald burns (19%). 152 cases (63%) were reported as accidental, 87 cases (36%) intentional self-inflicted, and 3 cases (1%) intentional not self-inflicted. Depth of burn as estimated by the EMT was 1st degree (33%), 2nd degree (46%), 3rd degree (21%), and 4th degree (<1%). 36% of patients (n=57) had >70 percent body surface area (%BSA) burns. The overall mortality rate at 30 days was 50% (n=121). Women had a higher mortality rate than men (71% vs. 43%; p<0.01). Intentional self-inflicted burn victims had a higher mortality than accidental burn victims (85% vs. 48%; p<0.01). Multivariate logistical regression identified %BSA (OR 1.1; p<0.01) and depth (OR 7.6; p=0.04) as significant predictors of mortality. CONCLUSION: Indian burn patients cared for in the prehospital setting are more commonly female, injured at home, and victims of flame burns. Risk factors for death from burns include female gender, self-inflicted injury, increased depth, and greater body surface area.

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ABSTRACT FINAL ID: OS37-F;

TITLE: Prehospital Tricyclic Antidepressant Overdose: A Retrospective Case Series Study of Prehospital Intervention by MICA Paramedics in Melbourne

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Tricyclic antidepressant (TCA) overdose represents a significant number of those patients presenting to ambulance paramedics as time critical when in overdose. The likelihood of toxicity leading to subsequent cardiac arrest in this group is approximately 70% within six hours of ingestion. Management of these patients is complex, and presents challenges for paramedics in the pre-hospital setting. The objective of this study was to identify those cases attended by MICA Paramedics within AV who presented with TCA overdose, and who required intervention due to signs and symptoms of toxicity using Sodium Bicarbonate 8.4%. The consequences of intervention were measured to determine effect in the pre-hospital setting. METHODS: A retrospective case series study of Victorian MICA Paramedic management of tricyclic antidepressant overdose. Data was obtained from the VACIS database (Ambulance Victoria) for the period March 2007 to November 2009. Descriptive statistics were used to analyse the data. Inclusion criteria were those cases listed as overdose, TCA, or specific drug overdose within the assessment window. Patients were excluded if there was no way of confirming that TCA were involved in the overdose. RESULTS: Of the 23264 cases presented as overdose, 264 were confirmed as TCA overdose. During the review period, 68 cases required MICA intervention with Sodium Bicarbonate 8.4%, having demonstrated toxicity as per the AV protocol. Improvement was noted in 61.1% of cases where intervention occurred. CONCLUSION: MICA Paramedic pre-hospital intervention in TCA overdose using Sodium Bicarbonate 8.4% has merit. Further study is required to define the nature of impact of current intervention on the condition, and to refine potential treatment methodologies in the form of Clinical Practice Guidelines for the future.

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ABSTRACT FINAL ID: OS38-A;

TITLE: Hospital Characteristics Associated with Survival after Out-of-Hospital Cardiac Arrest (OHCA)

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Survival after OHCA varies between EMS systems, but the contribution of different receiving hospitals to this variability is unknown. We examined whether survival was related to receiving hospital characteristics. METHODS: We did a prospective 4-year observational study of adult non-trauma OHCA in an urban EMS. Hospital characteristics were Critical Care Level (CCL-high, middle, general), teaching status, public or private, and hospital OHCA volume. CCL was nationally categorized by the capability/expertise of providing emergency cardiac catheterization, 24-hour emergency physicians and intensivists, post-arrest protocol, and timely thrombolysis for stroke. Other potential prognostic factors for regression analysis included age, sex, arrest witnessed, bystander CPR, initial cardiac rhythms, EMS time intervals, advanced level paramedics (ALS), and with malignancy. The primary endpoint was survival to hospital discharge; the secondary was favorable Cerebral Performance Category (CPC: 1-2). RESULTS: A total of 3,890 OHCA (8.3% of shockable rhythm) were treated at 20 receiving hospitals. Survival to discharge was greater in hospitals of high CCL (5.9 vs 4.5%, OR 1.6, 95% CI 1.1-2.3), university teaching (5.5 vs 3.4%, OR 1.5, 95% CI 1.0-2.1), private (6.2 vs 3.9%, OR 1.5, 95% CI 1.1-2.1), and lower volume of cases (OR 1.0, 95% CI 1.0-1.01). Adjusted survival to discharge for all variables remained independently greater in university teaching (OR 2.1, 95% CI 1.4-3.2). Other factors for better discharge survival included initial shockable rhythm (OR 4.4, 95% CI 3.1-6.3), arrest witnessed (OR 1.9, 95% CI 1.5-2.6), with bystander CPR (OR 1.8, 95% CI 1.2-2.6), shorter EMS interval (OR 1.0, 95% CI 1.0-1.1), and younger age (OR 1.0, 95% CI 1.0-1.1). Favorable CPC was not associated with studied hospital characteristics. CONCLUSIONS: Receiving hospitals of high CCL, university teaching, private, and lower OHCA volume displayed higher survival of OHCA. University teaching status was an independent predictor for survival to discharge. EMS system should designate specific hospitals as “resuscitation center”.

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ABSTRACT FINAL ID: OS38-B;

TITLE: Oral Transmucosal Fentanyl Citrate for Pain during Extrication

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The key evidence in saving trauma lives is time to definitive care. Even in experienced hands, IV administration of analgesia adds significant time onto the overall prehospital phase of care, not only in gaining IV access, but also in the checking and preparation of the agent and the subsequent titrated delivery. We sought a solution to the delays caused to the extrication by cannulating solely for the purpose of analgesia. METHODS: Over a period of 12 months, 1200mcg Oral Transmucosal (OTM) Fentanyl Citrate (Actiq) was offered to entrapped patients as a first line analgesic. Included were all physically entrapped patients with a pain score ≥6/10 who were clearly able to understand the requirement to hold the device in their mouth between cheek and gums, without biting or chewing it. Patients already cannulated or receiving other intravenous drugs were excluded. Outcome measures included pain scores at 3, 5, 10 and 15 min. Complications and concurrent analgesia administered where noted. RESULTS: Administration of analgesia commenced within 1-2 min of physician reaching the casualty. Pain relief was evident at 3min, with effective pain relief, (pain <6) at 5min. At 15min all patients studied where satisfied that their pain was under control and no further analgesia or sedation was requested during extrication. Whilst we initially had concerns with the potential for patients to chew the device and overdose, we encountered no serious side effects in the 14 patients who fulfilled the inclusion criteria. We encounter only 1 case of nausea, in a patient who was found to be sucking the devise. We had 2 cases of mild sedation, which both resolved within 1 minute of removing the devise. CONCLUSIONS: Whilst there is a short delay in its effect, in the context of the entrapped casualty, OTM Fentanyl provides a safe, simple and effective method of high quality pain relief more rapidly than conventional methods.

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ABSTRACT FINAL ID: OS38-C;

TITLE: Ambulance Transports for Cardiac Complaints at the Chicago Marathon: Location of Calls and Comparison of Warm and Cold Years

ABSTRACT BODY:

Abstract Body: OBJECTIVES: Marathons put significant strain on the cardiovascular system placing athletes at risk for sudden cardiac death. Thus, preparation for cardiac events is of
great importance. Our goals are to report the location of emergency medical system (EMS) calls for cardiac complaints, defined as chest pain (CP), syncope, and arrhythmia, and to describe the rates of such complaints in warm years (2008, 2010) as compared to a cold year (2009). METHODS: Call center dispatch logs from the 2008-2010 Chicago Marathons were reviewed. Inclusion criteria were completed ambulance runs with a documented problem in the EMS report of either CP, syncope, or arrhythmia including bradycardia. Tachycardia not otherwise specified was excluded. RESULTS: There were 33,033, 34,792, and 38,132 participants with average temperatures of 71, 37, and 71°F in 2008, 2009, and 2010 respectively. EMS completed 547 runs, 40 of which met inclusion criteria: 13 CP, 24 syncope, and 3 arrhythmias [1 atrial fibrillation (AF), 1 supraventricular tachycardia (SVT), and 1 bradycardia]. Of the CP calls, 12 came from the main medical tent and 1 from the finish area. Of the syncope calls, 2 came between miles 9 and 11, 5 came between miles 16 and 20, 5 came between miles 23 and 26, 6 came from the finish area, 3 came from the main medical tent, and 3 had undocumented locations. Of the arrhythmia calls, AF came from the 5th mile, SVT came from the 23rd mile, and bradycardia came from the main medical tent. The warm years averaged 4 chest pain, 12 syncope, and 1.5 arrhythmia, whereas the cold year had 5 CP, and no syncope or arrhythmia (p=.0047 for syncope). CONCLUSION: EMS calls for CP primarily occurred at the main medical tent, and syncope calls were most common after mile 16. There were more syncope calls and a trend towards more arrhythmia calls in warm years as compared with cold. Cardiac equipment, such as cardiac monitors and automatic external defibrillators, though valuable throughout endurance events, may be most utilized in the second half and at the main medical tent of a marathon and may be more widely used in warm weather.

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ABSTRACT FINAL ID: OS38-D;

TITLE: Preliminary Analyses of Prehospital Rapid Sequence Intubation in a Large Emergency Medical Services System

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Rapid sequence intubation (RSI) remains a relatively new modality of airway management in the prehospital arena and its role is in the process of being more clearly defined in the literature. RSI was introduced as an airway management option to the Mounmouth and Ocean County (MONOC) Emergency Medical Services (EMS) system in the state of New Jersey in 2007. We evaluated various data points and outcome measures for 280 patients that underwent RSI to evaluate our initial experience. METHODS: A retrospective review was conducted and records abstracted from the MONOC EMS system database. MONOC provides services to various hospital systems, both academic and community based. This EMS system utilizes an electronic medical record system. Data points included heart rate (HR), Systolic and Diastolic Blood Pressures(SBP, DBP), Pulse oximetry and End-Tidal CO2 prior to and after RSI. Intubation attempts and success rates were also analyzed. RESULTS: 280 patient records were retrospectively reviewed and analyzed. Mean HR was 98 prior to RSI and 93 after RSI. This difference was not statistically significant (P>0.01). Similar results were obtained for mean SBP (prior to RSI (161) after RSI (149), P>0.01) and Mean DBP (prior to RSI (88), after RSI (82), P>0.01). Mean Pulse Oximetry was 88% prior to RSI and 97% after RSI (P<0.01). No differences were observed in End-tidal CO2 at 5 min after intubation and upon hospital arrival; Overall intubation success rate was 98% and 86% on first attempt. 5 patients were not intubated successfully and alternative airway methods were utilized without apparent deterioration. CONCLUSION: In this large EMS system, prehospital RSI did not show negative impact on HR or BP measurements and improvement in Pulse oximetry was noted. End-tidal CO2 measurements did not show deterioration. Intubation success rates were slightly above national average. Larger studies are required to further define the role of RSI in the prehospital arena.

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ABSTRACT FINAL ID: OS38-E;

TITLE: Stabilization of the Mortality Predictive Score in the Emergency Patients Transferred by Telemetry-assisted Inter-facility Transport in Rural Thailand

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Inter-facility transfer of emergency patients needs advance communication between the ambulance and the terminal work station. Recently, we established a telemetry system for sending real time data (including picture, vital signs and EKG monitoring) to help provide the pre-arrival treatment during transfer when needed. Our objectives was to evaluate the possibility of a telemetry system to support pre-arrival emergency patient care during inter-facility transfer in rural Thailand. METHODS: We conducted a prospective observational study during 1st March to 30th April 2011, at Sappasitthiprasong hospital, a 1,100-bed, university-affiliated, tertiary-care hospital, Ubonrathchatani, Thailand. To transfer emergency patients from the primary- and secondary-care hospitals (30-200 beds) to our hospital, mobile ICU ambulance with full facility and telemetry were activated by our protocol. Patient characteristics, transport time, and Rapid Emergency Medicine Score (REMS), as the mortality predictive score (including age, mean artery pressure, pulse rate, respiratory rate, peripheral oxygen saturation, Glasgow Coma Scale), were collected from the launched hospital and our institute. The 26-point REMS were categorized in to three degrees of severity. The association between the changes in the degree of predictive scores and the use of telemetry were investigated. RESULTS: 688 inter-facility transfers were analyzed during the study period. The telemetry was used in 264 transfers (38.4%). Based on multivariate analysis, the risk of decline in the degree of REMS severity was significantly lower among the patients transferred with telemetry compared with those transported without telemetry (adjusted relative risk 0.28; 95% CI 0.11-0.69, p = 0.006). No association between age, endotracheal intubation, transport time, pre-transferred REMS and the worsening of the degree of REMS severity was found. CONCLUSION: The telemetry-assisted inter-facility transport of emergency patients can help stabilize the mortality predictive score.

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ABSTRACT FINAL ID: OS38-F;

TITLE: Effect of Simulated Aeromedical Flight on Performance: A Volunteer Study

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Numerous environmental factors are known to impair psychological performance. This has been researched in the fields of aviation and other high risk industries, and also to a lesser extent in medicine. We aimed to evaluate the effect of a simulated aeromedical flight on the performance of a group of volunteers. METHODS: The study was conducted as a randomised controlled trial. Student volunteers were randomised to either standard testing or simulated aeromedical flight. Informed consent was obtained from all participants. Both groups underwent a response inhibition task and Picture-Word Stroop test. Volunteers in the standard arm underwent these tests in a quiet environment. Volunteers in the simulated aeromedical flight were kitted in a full set of protective equipment and placed in a low fidelity helicopter simulator. Volunteers were then played, via their helmet, an audio track of air traffic control conversation along with an anonymised recording of actual clinical discussion during an aeromedical retrieval. RESULTS: 76 participants were included. Mean age was 21 years. In the response-inhibition test, there was a non-significant difference in mean reaction time (helicopter group 390ms v control group 370ms). The helicopter group was significantly more accurate in their responses (95.8% correct) than the control group (90.9% correct). CONCLUSION: It appears that the helicopter simulation induced a generalised task response in our subjects such that they prioritised accuracy over response speed. This may be a conscious decision in the case of the Stroop task, but must operate at a subliminal level in the case of the response inhibition task. An important question is whether the performance priority granted to accuracy in these studies also applies to performance in making crucial patient care decisions in the actual helicopter environment. This prioritisation may also increase fatigue levels. We plan to undertake further work in both high fidelity simulators and with medical & paramedical staff.

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ABSTRACT FINAL ID: OS38-G;

TITLE: Pre-hospital Care of Road Traffic Injuries in Iran: A Descriptive Explorative Study

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Iran with one of the highest road traffic incident (RTI) deaths (annually with over 27,000 deaths and about 0.8 million injured) like many low and middle income countries has insufficient pre-hospital trauma care, few victims receive treatment at the crash scene and even fewer receive safe transport to the hospital by an ambulance and the performance of pre-hospital emergency medical care system has never been fully assessed. Aim: This study was designed to explore the current status of pre-hospital medical care system by performing an extensive investigation on response time intervals in Tehran and three other big cities in Iran. METHODS: A retrospective cross-sectional study was designed and various time intervals in relation to pre-hospital care of RTIs identified in the ambulance dispatch centre in Tehran, Iran from 10 Nov 2009 to 10 Mar 2011 and response time for three other big cities in Iran in 2009. RESULTS: In total, the cases of 65634 RTI victims in Tehran were analyzed. Of these, 63.6% of the victims injured were male, 19% were female and 18% were unknown. The mean response time for the ambulance in Tehran was 13.45 minutes, and median was 12.3 minutes. The mean on-scene time was 15.64 minutes. Mean transport times from the scene to the hospital were 13.88 minutes. The mean of total pre-hospital time was 63.75 minutes with a median of 61.53. Overall, 34% of the response interval times were missing. 19% of all victims were transferred to the hospital by public transportation. For year 2008 the response time for Tehran was 14.18 and for Isfahan was 7.16, Tabriz was 8.21 and Shiraz 5.16. CONCLUSION: The response, transport and total time intervals among EMS responding to RTI incidents in Tehran were registered for 66% of all missions. Compared with the year before the response time in Tehran has decreased. Maybe this improvement was due to development of the pre-hospital system in Iran in recent years. Response time in the other big cities in Iran is less than 10 minutes. Further investigation is needed to explore this crucial process of providing pre-hospital emergency medical care.

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ABSTRACT FINAL ID: OS39-A;

TITLE: Early Increase of Blood Glucose in Patients Resuscitated from Out-of-Hospital Ventricular Fibrillation Predicts Poor Outcome

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Hyperglycaemia in the very acute phase is associated with unfavourable outcome in conditions involving ischemia and reperfusion. The aim of the present study was to describe the trend of blood glucose immediately after successful resuscitation from out-of-hospital ventricular fibrillation (VF) or tachycardia (VT) and its association with outcome. METHODS: Data from the Helsinki Cardiac Arrest Registry supplemented with blood glucose data were analysed in this population-based observational study. Between 2005 and 2009, a total of 170 adult patients survived to hospital admission after resuscitation from bystander witnessed cardiac arrest of cardiac origin and VF/VT as initial rhythm. RESULTS: Sufficient data for analysis was available from 134 (79%) cases. Number of survivors, defined as discharged in Cerebral Performance Category (CPC) 1 or 2, was 87 (65%, 95% CI 57-73%). No significant change in blood glucose was observed between pre-hospital (10.5±4.1 mmol/l) and admission (10.0±3.7 mmol/l) time points in surviving patients (p=0.3483) whereas in non-survivors, blood glucose increased from 11.8±4.6 mmol/l measured after return of spontaneous circulation (ROSC) to 13.8±3.3 mmol/l measured at admission (p=0.0025). Changes in blood glucose are shown in Figure 1. Characteristics of the patients with and without rising glucose trend between prehospital and admission measurements are shown in Table 1. CONCLUSIONS: Patients who are successfully resuscitated from out-of-hospital VF but with unfavourable outcome are characterised by significant increase of blood glucose in the ultra-acute phase before hospital admission.

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ABSTRACT FINAL ID: OS39-B;

TITLE: Use of NIRS Fore-Sight Technology Reveals Adequacy of Cerebral Perfusion During Cardiopulmonary Resuscitation

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Neurological outcome in out-of-hospital cardiac arrest (OHCA) may be influenced by cerebral perfusion during cardiopulmonary resuscitation (CPR). Near-Infrared Spectroscopy (NIRS) is a non-invasive monitoring method to assess cerebral oxygenation. Recent developments include the use of 4 different wavelengths to improve differentiation between oxygenated and de-oxygenated hemoglobin (Fore-Sight technology), not relying on a pulse signal anymore. This technology provides absolute cerebral tissue oxygen saturation (SctO2) and is not just a trend-only monitor anymore. In this study, we assessed the feasibility and the additive information of recording field SctO2 readings in patients with OHCA. METHODS: For every emergency call for OHCA, a Fore-Sight monitor was transported to the scene of the OHCA (by a third person not taking part in the CPR). SctO2 data were collected from arrival until end of CPR (or until transfer to the hospital). All obtained information was blinded to the medical intervention team. RESULTS: As of today, data on 12 patients were collected. In all patients, we obtained reliable bilateral SctO2 values, immediately after arrival at the scene (and before return of spontaneous circulation (ROSC)). In all patients, initial SctO2 values were between 35% and 50% (SctO2 threshold for cerebral ischemia is 55%). SctO2 values increased significantly at ROSC, to reach values between 60 and 70%. In case of no ROSC, SctO2 values did not increase, remained between 30 and 50%, and finally decreased to the lowest observed value of 15%, when the patient was declared dead. In 2 patients, SctO2 values decreased immediately below 50% at re-occurrence of ventricular fibrillation, and increased to values above 70% after defibrillation (and after ROSC). CONCLUSION: These first observations revealed that the newest NIRS technology gives useful real-time information on cerebral oxygenation (and adequacy of cerebral perfusion) during CPR. Future availability of Fore-Sight transport monitors will facilitate further investigations in patients suffering from OHCA.

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ABSTRACT FINAL ID: OS39-C;

TITLE: Improved Neurologically Intact Survival with the Use of an Automated, Load-Distributing Band Chest Compression Device for Cardiac Arrest Presenting to the Emergency Department in a Multi-Centre Clinical Trial

ABSTRACT BODY:

Abstract Body: OBJECTIVE: This study aimed to compare resuscitation outcomes before and after switching from manual CPR to load-distributing band (LDB) CPR in two Emergency Departments (EDs). METHODS: This was a phased, prospective cohort evaluation with intention-to-treat analysis of adults with non-traumatic cardiac arrest. The primary outcome is survival to hospital discharge, with secondary outcome measures of return of spontaneous circulation, survival to hospital admission and neurological outcome at discharge. RESULTS: A total of 1,011 patients were included in the study, with 459 in the manual CPR phase (January 01, 2004, to August 24, 2007) and 552 patients in the LDB-CPR phase (August 16, 2007, to December 31, 2009). In the LDB phase, the LDB device was applied in 454 patients (82.3%). Patients in the manual CPR and LDB-CPR phases were comparable for mean age, gender and ethnicity. The mean duration from collapse to arrival at ED (min) for manual CPR and LDB-CPR phases was 34:03 (SD16:59) and 33:18 (SD14:57) respectively. The rate of survival to hospital discharge tended to be higher in the LDB-CPR phase (LDB 3.3% vs Manual 1.3%; adjusted OR, 1.42; 95% CI, 0.47, 4.29). There were more survivors in LDB group with Cerebral Performance Category 1 (good) (Manual 1 vs LDB 12, p=0.01). Overall Performance Category 1 (good) was Manual 1 vs LDB 10, p=0.06. CONCLUSION: A resuscitation strategy using LDB-CPR in an ED environment was associated with improved survival to admission and discharge in adults with prolonged, non-traumatic cardiac arrest.

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ABSTRACT FINAL ID: OS39-D;

TITLE: Chest Compression CPR Improves the Outcome of Swine Cardiac Arrest

ABSTRACT BODY:

Abstract Body: OBJECTIVE: In 2010, the international liaison committee on resuscitation guidelines strongly emphasized on the importance of minimizing any interruptions during chest compressions and on the necessity of ventilations in cases of prolonged cardiac arrest (CA). However, it is not at present clear at which point of CA the necessity of providing ventilations overcomes the hemodynamic compromise caused by chest compressions' interruption. The aim of the present experimental study was to assess whether chest compression CPR would improve survival in an established model of prolonged swine CA. METHODS: Ventricular fibrillation (VF) was electrically induced in 20 piglets (19±2kg) and left untreated for 8 minutes. Animals were then randomized to receive two minutes of either chest compression only CPR (group CC) or standard 30:2 compressions/ventilations CPR (group S) before defibrillation attempt. All resuscitated animals were monitored under anesthesia for 4 hours and then were awakened and placed in a maintenance facility for 24 hours. RESULTS: There was no significant difference among groups for both return of spontaneous circulation and 1h survival (9/10 for group CC vs 4/10 for group S, p=NS). Coronary perfusion pressure fluctuation is shown in Figure 1. There was a significant difference in 24h survival (7/10 for group CC vs 2/10 for group S, p=0.025). Furthermore, group CC animals exhibited significantly higher mean Neurological Score (58±42.4), compared to Group S (8±16.9) ($p<0.05$). CONCLUSION: In this swine model of CA, where defibrillation was first attempted at 10 minutes of untreated VF, uninterrupted chest compressions resulted in significantly higher survival rates and higher 24-hour neurological scores when compared to standard 30:2 CPR.

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ABSTRACT FINAL ID: OS39-E;

TITLE: Compliance to American Heart Association Cardiac Arrest Guidelines; Comparison between MD and RN Team Leaders

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Advanced life support (ACLS) trained RNs are rarely team leaders during cardiac resuscitation. This responsibility is generally relegated to an MD. We compared resuscitation led by RNs and MDs. METHODS: We evaluated MDs and RNs completing ACLS re-certification. Participants (n=333) were formed into 9 member resuscitation teams with pre-assigned roles; team leader, recorder, airway management (2), chest compressions (2), defibrillation, IV management and medications. RESULTS: In 26 teams, MDs, and in 11 teams RNs were team leaders. Each team, non-Human Simulation (HS) trained (n=13 MD led, n=6 RN led) and HS trained (n=13 MD led, n=5 RN led) were challenged by a ventricular fibrillation (V-fib) scenario on SimMan® as the first code of the day. After a didactic review, a practice session was held where 5 to 9 additional V-fib megacodes were presented. Percent compliance to American Heart Association (AHA) guidelines was compared for each group at each level of training. RESULTS: Compliance to AHA pulseless guidelines was 25.6% for MD and 26.4% for RN led teams (NS) in the non-HS training group, and 28.8% for MD and 21.7% for RN led teams (NS) for previously HS trained teams. After didactic review, compliance improved to 42.3% for MD and 52.8% for RN led in non-HS teams (NS) and 54.2% for MD and 61.7% for RN in HS teams (NS). After practice an additional improvement was observed increasing to 60.3% for MD and 63.9% for RN led in non-HFHS teams (NS). The greatest increase in compliance was observed in HFHS teams after practice; 73.1% MD led teams and 65.0% in the RN led teams (NS). CONCLUSION: This study supports the idea that the level of competence demonstrated by nurses suggests code team leadership headed by rapidly responding appropriately trained RNs would offer a benefit over awaiting MD arrival to assume the code team leader role in the hospital setting. Online ACLS, and didactic only courses following a 2 year re-certification cycle may be insufficient to maintaining resuscitation skills. Full certification should include hands-on megacode practice to complete reinforcement of psychomotor skills.

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ABSTRACT FINAL ID: OS39-F;

TITLE: Rural ST Elevation Myocardial Infarction (STEMI) Care and D2B Times

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The optimal care of STEMI patient is defined as early percutaneous coronary intervention (PCI) with a door-to-balloon time (D2B) of < 90 minutes. Our aim is to compare D2B times of all STEMI patients treated within a rural emergency department (R-ED) and EMS system. METHODS: 2010 retrospective analysis of all STEMI patients transferred from a R-ED or diverted to PCI capable facility. D2B times for pre-hospital arrivals, walk-in patients and diversions were analyzed. Mode of transport (air, ground) is analyzed. RESULTS: 32 STEMI patients were either transferred from the ED or diverted. This represents < 0.1 percent of yearly ED visits. 28% (9/32) arrived to the ED in private vehicle compared to 72% (23/32) that activated the EMS system. 26% (6/23) of patient that activated EMS were diverted to a PCI facility. The average D2B times are: Walk-in (ED-PCI Hosp): 116.4 min ED transfer for EMS arrival (EMS-ED-PCI Hosp): 111.5 min PCI diversion (EMS-PCI Hosp): 56 min. For the transferred patients D2B times less then 90 minutes were obtainable with both air (2) and ground transport (1). D2B times for patients with simultaneous EMS STEMI activation (Lifenet) and helicopter activation (5): 105 min. Patient without EMS STEMI activation nor helicopter activation (4): 116 min. The average D2B time for patients requiring ground inter-facility transfer (5): 118 min. CONCLUSION: Patients suffering a STEMI represent a small fraction of the patients seeking medial attention at a R-ED. Notwithstanding, enormous efforts and collaboration within a STEMI system is required to ensure that these patients receive the best care possible. Pre-hospital diversion appears to be the best approach to meet D2B expectations, in the rural setting this modality is challenging. System optimization within the ED's is essential since almost 1/3 of STEMI patients arrive on their own. From a strict D2B time perspective, best times are obtained with EMS diversion to a PCI facility. Pre-hospital STEMI activation associated with concomitant critical care inter-facility transfer team activation appears to be the second best modality to achieve D2B times.

AUTHORS/INSTITUTIONS: A. Perez, , Windham Memorial Community Hospital, Willimantic, CT; A. Perez, , University of Connecticut Health Center, Farmington, CT;

ABSTRACT FINAL ID: OS40-A;

TITLE: Prehospital Therapeutic Hypothermia for Cardiac Arrest Survivors: A National Survey

ABSTRACT BODY:

Abstract Body:

OBJECTIVE: Each year 50.000 out-of-hospital cardiac arrest (OHCA) occur in France. Despite the implementation of the guidelines, it prognosis remain extremely dark with survival rates from 1 % to 34%. Therapeutic hypothermia (TH, body temperature between 32-34°for 12 to 24h) has proven beneficial in terms of survival and neurological outcome in OHCA survivors. The main aim of this study was to evaluate the implementation rate of prehospital induction of TH in the French emergency medical service system (EMS). Secondary aims were to report the different methods used to induce it as well as the barriers to it's spreading. METHODS: The 105 French regional EMS have been included in our study. The study was conducted using a web-based questionnaire, including 23 items (multiple choice and free text) divided in 2 scenarios. RESULTS: In our survey, 30% (n=32) of the French EMS have implemented prehospital hypothermia, 16 of which (15%) were doing it according to a cooling protocol. TH was induced in 78 % (n=25) post-return of spontaneous circulation and "as soon as possible". It was mostly achieved by infusion of 30ml/kg of 4°C saline in 30 minutes, with a temperature surveillance in less than 50%. The barriers to its implementation were organizational (no TH in the corresponding ICUs) and training linked. Those could be shifted by training the prehospital care actors and creating specific networks for post-cardiac arrest patients ("cardiac arrest center" based on the "trauma center" model). The barriers pointed out by our questionnaire are quite similar to the ones observed in North America, part of them being dealt with by the update of the international guidelines. CONCLUSION: TH prevalence in a prehospital setting in France is of 30%, 15% of the EMS implementing it systematically, following a standardized protocol. It has been evaluated that if cardiac arrest survivors were treated with TH, 52.000 lives could be saved every year in the U.S. The life saving potential; the ease, safety and cost of the most spread methods; plead very highly in favor of a larger use of TH on cardiac arrest in a prehospital setting.

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ABSTRACT FINAL ID: OS40-B;

TITLE: Epinephrine and Vasopressin Result in Improved Neurological Outcome compared to Epinephrine Alone in Swine Asphyxial Cardiac Arrest

ABSTRACT BODY:

Abstract Body: OBJECTIVES: To compare the effects of the combination of epinephrine and vasopressin on initial resuscitation success, 24h survival, and neurological outcome compared to epinephrine alone in a swine model of out of hospital asphyxial cardiac arrest (CA). METHODS: Twenty Landrace/Large-White pigs, 12 to 15 wks of age, were subjected to asphyxial CA by clamping of the endotracheal tube. After 4 min of untreated CA, resuscitation was initiated by unclamping the endotracheal tube, 100% oxygen mechanical ventilation, two minute chest compressions and drug administration. Animals were randomly assigned to receive either 0.02 mg/Kg epinephrine (n=10) alone or a combination of 0.02 mg/Kg epinephrine with 0.4 U/kg vasopressin (n=10). The Advanced Life Support algorithm was followed for the ensuing resuscitation procedures. In case of restoration of spontaneous circulation (ROSC), the animals were monitored for 30 minutes and then observed for 24h. RESULTS: Hemodynamic variables were measured at baseline during CPR and in the post-resuscitation period. For neurologic evaluation 24h following CA, neurologic deficit score (NDS) and brain histologic damage score (HDS) were used. Statistically significant differences were observed in groups E and E+V with regard to CPP during the first minute of CPR. In both groups, ROSC and survival rates were comparable (p=NS). NDS was significantly higher in the combination group compared to the epinephrine group ($p<0.001$). Histological damage score (HDS) was also better in the combination group ($p<0.001$). Total HDS and NDS showed a statistical significant correlation ($p<0.001$). CONCLUSIONS: In this porcine model of out-of-hospital asphyxial CA, epinephrine alone as well as the combined administration of epinephrine and vasopressin resulted in similar ROSC and survival rates, but the combination of epinephrine and vasopressin resulted in improved neurological recovery.

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ABSTRACT FINAL ID: OS40-D;

TITLE: The Attitudes of Team Members Towards Family Presence during Hospital-based CPR: A Study Based in the Muslim Setting of Four Iranian
teaching hospitals

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Contrary to international guidelines recommending family presence during cardiopulmonary resuscitation (CPR), allowing family members to be present remains a matter of debate in many countries. The purpose of this study was to determine the opinions of healthcare providers from a Muslim setting concerning family-witnessed resuscitation (FWR). METHODS: The sample population consisted of CPR responders in four teaching hospitals in Tehran. These centres have no policy regarding the presence of family members during resuscitation. We developed and circulated a questionnaire gathering opinions, and collated their comments. RESULTS: From 200 respondents, 77% opposed FWR. We found that gender, age, experience, previous exposure to FWR or specialty (except for emergency physicians) did not predict opinion towards family presence during CPR. The most common reasons given for opposition to family presence were fear of psychological trauma to family members, possible interference with patient care/
decision-making, and a perceived increase in staff stress. CONCLUSION: In a largely Muslim community, our survey suggested that the majority of CPR responders do not favour the presence of relatives during cardiopulmonary resuscitation. Any counter to this opinion would need to be based on educating team members about the possible benefits of relatives being present during resuscitation. Public education surrounding CPR would also be a fundamental element for implementing any formal programme encouraging family-witnessed CPR in hospitals such as ours.

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ABSTRACT FINAL ID: OS40-E;

TITLE: Correlation of having a Non-medical University Degree with Immediate and Late BLS Knowledge Improvement in Non-medical Hospital Staff after a Short BLS Course

ABSTRACT BODY:

Abstract Body: OBJECTIVE: We conducted a prospective randomised trial to test the hypothesis that university trained non-clinical hospital staff would yield better BLS knowledge improvement immediately and a year after a short BLS course compared to their colleagues with no university degrees. METHODS: Among not-medically-trained non-clinical staff of 3 different teaching hospitals in Tehran we randomly selected a group of 74 with and another group of 79 without a university degree. Both groups received a 2-hour session of theoretical and a 2-hour session of practical skills training on BLS within a protected paid time with extra salary incentives for well-performing participants. Just before, just after the training and 12 months later, we tested subjects to determine their BLS knowledge using standardized multiple choice question (MCQ) test scored on a continuous scale from 0 to 10. For comparison of scores between the two groups, we calculated differences in pre-course scores compared to scores just after and also 12 month after the course in each subject and compared the mean changes in the two groups using an unpaired t-test. RESULTS: Trainees with a university degree displayed superior BLS knowledge improvement immediately after the course compared with those without an university degree (95% confidence interval (CI) for the difference in mean score improvement of 0.21-0.36 and P-value <0.01). However, comparison of mean score improvement for both groups 12 months later revealed quite opposite results in terms of more improvement from baseline scores in those without a university degree compared with those with a university degree (95% CI for the difference in mean score improvement of 1.71-2.00 and P-value <0.01). CONCLUSION: We found that having a university degree in a non-medical field only correlated with immediate superiority in the BLS knowledge improvement assessed by MCQ tests when it comes to training non-clinical hospital staff with a 4-hour BLS course, while those without a university degree show more improvement from the baseline score after 12 months.

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ABSTRACT FINAL ID: OS40-F;

TITLE: Rapid Response Team: Is it Effective?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Once cardiac arrest occurs, fewer than 20% of patients having an in-hospital cardiac arrest will survive to go home. Prevention of in-hospital cardiac arrest requires staff education, monitoring of patients, recognition of patient deterioration, a system to call for help, and an effective response. In approximately 80% of cases clinical signs deteriorate over the few hours before arrest. A Rapid Response Team (RRT) is usually comprised of medical and nursing staff from intensive care and general medicine and respond to specific calling criteria. METHODS: In 2009 a retrospective study was done on all cardiovascular arrest at Al Rahba Hospital, including all patients deteriorating outside the Intensive Care Unit in the period from January to December 2010. Our findings showed a near 100% fatality rate. Fundamental problems were failure in planning, communication and to recognize early deterioration. Accordingly, the authors decided to implement RRT at Al Rahba hospital. A multidisciplinary team was formed to set the policy, activation criteria, forms, staff awareness and education and monitoring and follow up. RESULTS: The number of code blues decreased from 30 codes in 2009 to 19 codes (37%) in 2010. When patients met criteria, RRT was activated 100% of the times. The mean monthly code rate per 1000 discharges went from 3.8 in 2009 to 2.3 in 2010. CONCLUSION: Successful implementation of RRT was associated with a significant reduction in hospital-wide mortality rate and code rate outside the ICU. It reduced the number of unanticipated ICU admissions.
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ABSTRACT FINAL ID: OS40-G;

TITLE: Comparison of Survival and Morbidity Rates in CPR Applied Out of Hospital vs. in Emergency Services

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The aim of the study is to compare survival and morbidity rates in CPR applied out of hospital vs. those applied by emergency physicians in emergency services. METHODS: The patients brought to Emergency Service after they received CPR by Emergency Aid Physician (EAP) and patients who received CPR by Emergency Medicine Assistant (EMA) in emergency were included in the study. After resuscitation The patients' cardio-pulmonary (CP) arrest reasons, for how many minutes and how many times they were resuscitated, was recorded. The patients who received CPR by EAP and EMA were divided as 2 groups who were discharged (those discharged without sequela and with sequela) and those who were lost after they rearrested at hospital. The mean survival period of those who were lost after they rearrested at hospital and mean discharge periods of those discharged was determined. RESULTS: A total of 57 patients were included in the study. Among them 15 (mean age 58.2) were resuscitated by EAP, 52 (mean age 61.2) of them were resuscitated by EMA. Of the 15 patients resuscitated by EAP, one of the patients who was resuscitated by EAP was discharged without sequela (6.6%), 5 with sequela (33.3%). The remaining 9 patients (60%) had cardio-pulmonary arrest again at the hospital and did not respond to CPR and died (mean loss period 2.7 days). Of the patients resuscitated by EMA 11 (26%) were discharged without sequela (%26), 9 (21.4%) were discharged with sequela. The remaining 22 patients (52%) had CP arrest again at hospital and did not respond to CPR and died (mean survival period 1.7 days). There was a significant difference between the patients who were resuscitated by EAP before they were taken to hospital and those who were resuscitated by EMA in terms of being discharged without sequela and in terms of having a second cardio-pulmonary arrest at hospital ($p<0.05$). CONCLUSION: The survival periods of patients after CPRs applied by EMA are longer, their recovery without sequela, discharge is higher and having a second cardio-pulmonary arrest at hospital is lower.

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ABSTRACT FINAL ID: OS41-A;

TITLE: rPhone: A New Tool for Communication Analysis in Disaster Management Training

ABSTRACT BODY:

Abstract Body: INTRODUCTION: Communications play a key role in disaster response; problems which arise at this level may easily compromise the success of an efficient disaster response.(1,2) Communication analysis also plays an essential part in disaster medicine training.(3) To our knowledge no automated communication tool exists. DISCUSSION: We designed a web based phone and radio system called rPhone, faithfully reproducing on the computer a radio and phone apparatus, allowing one and two way communications between simulation players. (Figure 1) The system is portable, runs on a laptop webserver and can be used via any web browser allowing its use simultaneously with other computer software such as simulation or dispatch software. The only hardware requirement is a microphone and headset for each player. rPhone logs and timestamps each communication, also recording the direction and creating an audio file of the message itself. At the end of the exercise the system automatically builds a timeline both for radio and phone communication with the possibility to listen to each of them by simply clicking on it on the timeline. Phone communications can also be represented in sociograms, where arrows represent the direction and number of communication flow. (Figure 2) Each communication can be analyzed by keywords, which can then be used to tag them. A relevance ranking of the messages based on this tagging is then built. All this information is immediately available for debriefing at the end of the simulation. The use of rPhone during simulation allows to point out objectively critical communication flow and keywords and moreover allows the improvement of healthcare management and preparedness of major events. References: (1)Stephenson R et al. Disasters and the information technology revolution. Disasters 1997;21:305–334; (2)Juffermans J et al. Recurrent Medical Response Problems during Five Recent Disasters in the Netherlands. Preh Disaster Med 2010;25(10)127-136; (3)Ingrassia PL et al. Evaluation of medical management during mass casualty incident exercise: an objective assessment tool to enhance direct observation. J Emerg Med. 2010;39(5)629-36.

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ABSTRACT FINAL ID: OS41-B;

TITLE: MGE-RS: A Score to Predict Risk Level and MUR in Metropolitan Mass Gathering Events

ABSTRACT BODY:

Abstract Body: OBJECTIVE: During the MGE planning phase it is important to try to organize the most suitable health care response to assure primary, emergency and eventual major accident care, with the best balance between resource and cost. Aims: This study tries to develop a Mass Gathering Event Risk Scoring Model (MGE-RS) to predict Medical Usage Rate (MUR) that can assist EMS providers planning for mass gatherings across a variety of events and venue types in a metropolitan area, like Rome and Milan. METHODS AND RESULTS: This study includes 48 MGEs held in Rome (35 MGEs; 2005-2006) and Milan (13 MGEs; 2009-2010). All 35 MGEs held in Rome had more than 100.000 effective number of attendants (100.000 - 5.000.000), while the 13 MGEs held in Milan had a median of 100.000 attendants (50.000-200.000). Median PPR was 0,5 patients/1.000 persons: this rate is close to PPRs for MGE reported in the literature (0,5-2,0 patients/1.000 attendees). For each event, predicted MURs, calculated with Arbon Model and with MGE-RS Model, were compared with the effective MUR. MGE-RS scoring model is a formula that assigns points based on known information (type of event, place, duration, crowd, health system facilities) to predict MGE's Risk level. MGE-RS range score from 16 to 77; there are 5 Risk Level, each one corresponds to an expected MUR from <1,5 to >45. In the studied events the predicted MUR calculated with Arbon model correspond in 60% of cases (20% under/overestimation); while MGE-RS was in range in 88% of cases(0% understimation - 12% overestimation).

CONCLUSIONS: MGE-RS seems to be a provider friendly tool to be used in planning phases and is able to give an acceptable estimation of the Risk Level and Expected MUR of a MGE, without underestimating the event in the planning phase.

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ABSTRACT FINAL ID: OS41-C;

TITLE: Hospital Response to Disaster in Italy

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Recently the topic of disasters is very important in Italy because of incidents, natural casualties and mass events. National recommendations require hospitals to elaborate a Disaster Plan to provide required responses in a timely manner to a large number of victims. METHODS: The present prevalence study investigates hospitals' Disaster Plans, using a questionnaire exploring the following areas: hospital characteristics, workers' training, organization procedures, in-field experiences. Data were collected by the informatic platform of the Italian Society of Emergency Medicine (SIMEU) websit, and the network of the SIMEU Emergency Physicians which represent about 60% of hospitals throughout the country. The data set was completed on-line, by access to a reserved area, using identification and authentication mechanism. RESULTS: To date, 29 hospitals responded to the survey, 13 of which (48%) were of high complexity. 15 out of the network hospitals, could not respond to the questions because a Disaster Plan has not been elaborated yet. Responders come from 15/20 Italian Regions, mainly located in the Northern section (52%). On average, the activation of a Disaster Plan can increase the number of doctors, nurses and technicians about twice (3.5 vs 6.0 and 1.4 vs 2.7) compared with holiday day shift. 60% of responders report training workers on a Disaster Plan, but an annual refresher course is organized only by 21%, mainly in the largest ones. In 34% of hospitals the Disaster Plan has been tested in the field because of incidents or natural disasters; in 50% of these cases, raising and giving alarm procedures were modified after an assess meeting. Hospital Disaster Plans result in a better quality response in all the hospitals that experienced a true event. CONCLUSION: These preliminary results, show differences among hospitals in their ability to respond on time and correctly to a disaster and relevant information becomes available after a true emergency. Further studies are needed to verify these results and to investigate on how to improve the hospital Disaster Plan and how to identify mechanisms to support cooperation between hospitals involved in a disaster.

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ABSTRACT FINAL ID: OS41-D;

TITLE: VictimBase: Disaster Victim Descriptions for Simulation, Training and Research

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Victim descriptions are an important element in the design and development of disaster simulation exercises. Currently, the victim data utilized in computerized simulation exercises cannot be used in an interchangeable way. METHODS: The European Master in Disaster Medicine (EMDM) Academy, recognizing the need for access to reliable disaster victim data, initiated the VictimBase project in order to improve the availability and quality of disaster victim profiles for use in simulation, training and research. A standardized victim template was developed by an international consortium of training experts in disaster medical management during three workshops. RESULTS: The victim template is composed of a set of general victim data, a set of clinical conditions including primary survey, triage, secondary survey and diagnostic test data, and time and treatment triggers to move from one clinical state to another. The parameters of a casualty condition are organized in sub-templates and arranged in the way the victim would most likely be assessed. Subsequently, an online template has been developed to allow authors to file victim descriptions in VictimBase, which is an open access library of disaster victims. Victim profiles can be delivered in different output formats on request of the users. CONCLUSION: In order to evaluate the effectiveness or outcome of disaster response exercises or test operational plans, victim data must be robust, reliable and of high quality. Moreover, the data must be interchangeable in order to make comparisons between different response systems, regions or countries. VictimBase as an online library of disaster victims will contribute to achieve these objectives.

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ABSTRACT FINAL ID: OS41-E;

TITLE: A Survey of the Disaster Survival Skills and Attitudes of the Final Year Greek High School Students

ABSTRACT BODY:

Abstract Body: OBJECTIVE: This study aims at establishing the baseline of disaster survival skills and attitudes of the high school students in Greece. During a major disaster it is expected that the emergency services will require about 72 hours to reach the victims and to restore public utilities. During this period of time, the responsibility for survival rests upon the individual or very small groups. Their survival is likely to involve basic survival skills and knowledge of self protection and safety. METHODS: The survey was based on a 27-item questionnaire and was applied to a statistically significant convenience sample of the high school population (n = 170, CI = 1.34) in Crete, Greece. RESULTS: Of the 170 questionnaires, 3 had to be excluded, and the results were segregated by gender, where relevant. About half of the respondents would wear any means of identification when not at home (47% of the boys and 45% of the girls). Only 70% and 64%, respectively, would know how to turn off the water at the mains in their own home, but 82% in both groups knew to stop the electricity supply. However, 22% of the boys and only 6% of the girls knew how to render safe a room in case of a chemical gas incident. Only 67% of the boys and 80% of the girls knew the correct phone number for the emergency services. Astonishingly, only 14% of the boys and 12% of the girls knew how to make water safe, and only about a quarter would know for how long the food would remain safe in an unpowered fridge. CONCLUSION: This study demonstrates the lack of basic survival skills of the school leavers in Greece, and provides a baseline from which disaster education should be developed, taking into account the preference for a family approach.

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ABSTRACT FINAL ID: OS41-F;

TITLE: A Survey on Disaster Survival Skills and Attitudes of the High School Pupils in Croatia, Greece, Italy, the Kingdom of Bahrain and Scotland

ABSTRACT BODY:

Abstract Body: OBJECTIVE: In the recent years we saw the opening of the hadron collision accelerator, the building of the mothership that will launch tourists into the outer atmosphere, the successful landing of the Mars probe Phoenix, and the setting up of the Indian Ocean tsunami warning system. It would be fair to assume that such successes are reflecting the general population's increase in knowledge, experiences and data. However, traditional skills and inventive problem solving are gradually disappearing which may adversely impact the disaster survival, especially in the first 72 hours. In spite of their increased vulnerability, children are usually an overlooked category of victims in disasters. This study surveys the degree of disaster preparedness and skills of the secondary school pupils in a few countries. METHODS: A 13 part questionnaire was distributed to a statistically significant convenient sample of the high school students in the last year of compulsory education, in their respective countries. RESULTS: A total of 1898 valid replies were analysed. For example, an overall 75% would not know how to make a room safe in a chemical or would eat food which had deteriorated in an unpowered fridge, 25% would not know the emergency services' phone number, 71% would not know how to make water safe. The answers obtained are providing cause for serious concern. Education is the mainstay for mitigating the impact of a disaster, even more so in vulnerable populations, children being one of them. It is unacceptable that in the 21st century, in the areas studied, three quarters of the adolescents between 14 and 19 are still ignorant about making water safe. Also, there was no clear point of reference with regards to the responsibility for disaster preparedness, most respondents being not decided between television, family, school and local government. CONCLUSION: This study demonstrates the need for a multiagency concerted effort focused on the delivery of educational packages to improve the teenagers' disaster survival skills and attitudes.

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ABSTRACT FINAL ID: OS41-G;

TITLE: A Survey of the Disaster Knowledge of the Final Year Greek High School Students

ABSTRACT BODY:

Abstract Body: OBJECTIVE: This study aims at establishing the baseline for disaster preparedness knowledge of high school teenagers in Greece. During a major disaster it is expected that the emergency services will require about 72 hours to reach the victims and to restore public utilities. The responsibility for survival rests upon the individual or very small groups. Their survival will involve basic knowledge of protection, safety, basic survival skills, communication etc.
METHODS: The survey was conducted based on a 27-item questionnaire and was applied to a statistically significant convenience sample of the high school population (n = 170, CI = 1.34) in Crete, Greece. RESULTS: Of the 170 questionnaires, 3 had to be excluded, and the results were segregated by gender, where relevant. Although 95% of the respondents have previously heard the word “disaster”, 53% were able to list 3 correct examples, but 77% have declared having had discussions with friends or family about disasters. Most (95%) consider that the family has the main responsibility for disaster education, followed by the school (61%) and local government (20%), whilst television, radio, internet and other media figures were much lower. Although 87% could correctly explain an earthquake, only 63% could explain a tsunami.
Worryingly, only 63% believed that Greece is at risk for disasters, with an additional 20% not having an opinion. Further, only 61% could give an appropriate example.
CONCLUSION: Despite the efforts of the Greek government for disaster education, Greek high school students continue to struggle with what disasters are, and at what risk they are exposed to. Furthermore, considering that the survey was conducted 2 months after the 2011 Japan earthquake, the results may well overestimate the knowledge of the students.
This study provides a baseline from which disaster education should be developed, taking into account the preference for a family approach.

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ABSTRACT FINAL ID: OS42-A;

TITLE: A Survey on Disaster Awareness and Education of The High School Pupils in Croatia, Greece, Italy, the Kingdom of Bahrain and Scotland

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The disaster cycle comprises 6 stages: risk assessment, prevention, preparedness, response, recovery and mitigation. Good awareness and preparation is the key to the reduction of the disaster impact on the population and the area's infrastructure. This survey looks into the degree of awareness towards disasters of the secondary school pupils in the above countries, focusing especially on general knowledge and education. Children are usually an overlooked category of victims during a disaster in spite of their increased vulnerability. METHODS: A 14 part questionnaire was distributed to a statistically significant, convenient sample of secondary school students. All respondents were between 14 and 20 years of age and enrolled as students in the last year of compulsory education in their respective countries. The questionnaire collected information about demographics, general knowledge and education about disasters. RESULTS: 2338 valid and completed questionnaires were analysed (CI = 1.34). Most respondents knew the word "disaster" from multiple sources. However, overall, only 12% did recall a single lesson or lecture on disasters during the previous year and only 58% would know if their country is at risk of disasters. Description of an earthquake and tsunami was appropriate only in 32% and respectively 35%. There was wide indecision as to whom has the responsibility for their education in disasters (family, school, TV, government etc). CONCLUSION: Even taking into account the degree of subjectivity of their answers, there is cause for real concern, from both an awareness and educational point of view. It has been shown that a high level of disaster awareness is the foundation for reduction in the impact of a disaster. High schools should provide teaching opportunities for disaster topics in their curriculum and parents should be actively involved in disaster awareness and preparedness.

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ABSTRACT FINAL ID: OS42-B;

TITLE: NGO and Military Liaison in Haiti to Improve Care of Patients

ABSTRACT BODY:

Abstract Body: OBJECTIVE: After the earthquake in Haiti, the Italian Government decided to dispatch the aircraft carrier “Cavour”. Our NGO was deployed at the Foyer Saint Camille Hospital, a poor and obsolete structure. While trying to arrange a sufficiently equipped operating room, we decided to find an agreement between us and the Italian Navy to improve the management of the human and material resources and to give a better standard of care. Those patients needing major surgery were helitransported from the hospital to the aircraft carrier and sent back for continuation of care. METHODS: Medical records of casualties who received operations under general or locoregional anesthesia on the aircraft carrier were retrospectively analyzed (demographic data, injury types, surgical procedures, anesthetic techniques, perioperative care and post-operative complications). RESULTS: 42 M and 44 F pts (6-88 yrs, mean 47) were moved on board and required anesthesia for surgical operations. The most common injury-related surgical procedures were wound debridement/skin grafting, orthopedic surgery and amputation. 45 patients only had lower limb injuries, 21 upper limb injuries, 9 combined lower and upper limb and 11 maxillofacial trauma. The most common types of orthopedic trauma were mandible fractures (7), femoral fractures (6), tibial fractures (4) and forearm fractures (3). Nineteen cases (22,1%) had general anesthesia, 33 (38,4%) spinal anesthesia, 1 (1,2%) epidural anesthesia, 28 (32,6%) deep procedural sedation, 5 (5,7%) brachial plexus block. Most of the patients were stable and safe during intra and postoperative period, no major complications occurred. After surgical procedures 48/86 (55%) were transferred back to our hospital; others to different hospitals in Haiti. CONCLUSIONS: In disaster situations, the coordination of international aid is often difficult especially among NGOs and military forces. In Haiti, we succeeded in creating a good interaction between our volunteer organization and the Italian Navy, by the use of their operating rooms (until ours have been made available) and with our medical support for first response, transportation and post-operative care.

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ABSTRACT FINAL ID: OS42-C;

TITLE: Integer Linear Programming: A Mathematical Optimization Tool for Logistical Decision Aid as a Lesson Learned from the Haiti Earthquake Disaster Response

ABSTRACT BODY:

Abstract Body: OBJECTIVE: January 12th, 2010, Haiti was hit by a catastrophic 7.0 earthquake. Belgium sent its First Aid and Support Team (B-FAST) to Port-au-Prince with medical, SAR, logistic, foreign affair and military personnel. Reviewing the Haiti B-FAST disaster relief operation, mathematical optimization and modular approach is supposed to better serve disaster type-specific response. METHODS: The technical feasibility to utilize the Solver of Microsoft Excel® based on Integer Linear Programming (ILP) is tested for B-FAST payload optimization. To approximate pivotal values on utility and maximums for the Solver programming 7 B-FAST heads of mission (HOM) participated to a disaster type-specific simulation game (DTSG). RESULTS: Payload maximization with Solver is demonstrated via gradual encoding: from adding constraints till automated proportional adjustment of connected objects to create strings of objects or modules. The DTSG indicated that a heuristic method may lead to converging central tendency values and decreased ranges to recognize ILP pivotal values. CONCLUSION: The introduction of powerful mathematical modelling within given constraints may rapidly provide HOM with accurate estimations and maintain (proportional) dependencies between connected payload items. Computerized mathematical maximization for logistical decision aid harbours modular approach, disaster-type specific response and preservation of safety and well-being of both patients and relief workers.

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ABSTRACT FINAL ID: OS42-D;

TITLE: Emergency Nursing Leadership in Mass Casualty Incident

ABSTRACT BODY:

Abstract Body: INTRODUCTION: Emergency Nurses are core personnel in Mass Casualty Incidents (MCI). Even small incidents may overwhelm an unprepared team and facility, while large incidents are within the scope of some facilities and teams. Such a situation may create challenges, not only in the level of medical and nursing care, but also in the managerial level. Our experience shows that nurses took upon themselves to solve all problems, including those that not related to patients care. (Especially while it's occurred during the evening/ nights and weekends, and senior managers are absents). After evacuated from the arena, victims of MCI referred to the Emergency Department (ED), the first responders with the physicians, to the immediate medical needs, are the Senior Emergency Nurses (SEN). SEN nominated by the Head Nurse of the ED, with the authority of the medical center management to run the daily shifts and activate MCI mode if needed. They are also responsible to manage the ED until ED management arrives.

DISCUSSION: Special workshop including ”on spot” training, designed in order to provide the SEN tools of leadership and coordination that are the core requirement in order to achieve optimal outcome to MCI. The paper will present the workshop and the training as well as the process occurred in the ED, following the workshop.

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ABSTRACT FINAL ID: OS42-E;

TITLE: Combination of MEWS and StO2 Indicates Mortality in Patients Visiting the ED with Non-Traumatic Complaints

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Whether the physiologic responses of the body during illness are indicators of auto protection or deterioration is not always clear. The modified early warning score (MEWS) is calculated based on heart rate, systolic blood pressure, respiratory rate, temperature and neurologic status. It is used in the hospital as a tool to alert caretakers that a patient might be at risk. Soft tissue oxygenation (StO2) is another indicator for patients at risk and can be measured non-invasively (with the InSpectra ® device). Hemodynamic changes appear after the redistribution of blood flow. We tried to determine, whether classification of patients into groups with low or high StO2 and corresponding MEWS, might fine-tune the prognosis of patients at the moment they present with complaints of illness at the ED. METHODS: 651 patients (at random selection) with non-traumatic complaints were divided into 4 groups, according to their MEWS score (<2 or >=2) and StO2 (<75 or >=75) upon arrival in the ED. Regardless of subsequent hospital admission after the ED-visit, we registered survival of all the patients included in the study until 3 months after the ED-visit. The Kaplan-Meier survival curve is calculated for the 4 groups (figure 1). RESULTS: Patients with high MEWS and low StO2 (n = 32; group 2) had significantly higher mortality (31,25%) during the study period, compared to high MEWS and high StO2 (n = 118; group 1; mortality 14,4%), low MEWS and low StO2 (n = 80; group 4; mortality 7,5%) and low MEWS and high StO2 (n = 421; group 3; mortality 4,75%). CONCLUSIONS: The combination of a low StO2 and a high MEWS predicts a bad outcome for ED-patients with non-traumatic complaints. The use of StO2 measurement in combination with MEWS calculation is useful in the evaluation of ED patients.

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ABSTRACT FINAL ID: OS42-F;

TITLE: Sexual Violence Among Host and Refugee Populations in Eastern Cameroon

ABSTRACT BODY:

Abstract Body: OBJECTIVE: A decade of political instability in the Central African Republic (CAR) has led to civilian insecurity in the northwestern region of the country. 300,000 people have been internally displaced and another 80,000 have fled across the western border into Cameroon and have been integrated into the community there. As during many significant conflicts and displacements, sexual violence remains a significant concern in these populations. Our aim was to conduct a population-based survey of the CAR female refugee population displaced to rural Djohong District of Eastern Cameroon and the associated female Cameroonian host population to characterize the prevalence and circumstances of sexual violence. METHODS: Design, Setting, and Participants: A population-based, multistage, random cluster survey of 600 female heads of household conducted during March of 2010. Main Outcome Measures: Adult women (>18) heads of household were asked about demographics, household economy and assets, level of education, and sexual violence experienced by the respondent only. For the last episode of sexual violence, the respondent was asked to describe circumstances of the assault, including the perpetrator. RESULTS: Lifetime prevalence of sexual violence among all Djohong community female heads of household is 35% (95%CI 28.7-42.2). Among heads of household who reported a lifetime incident of rape, 64% (95%CI 54.4-72.5) were raped by their husband or partner. Among the host population, 3.9% (95%CI 1.4-10.5) reported rape by armed groups compared to 39.0% (95%CI 25.6-24.5) of female refugee heads of household. Women who knew how to add and subtract were markedly less likely to report sexual violence in the past 6 months or during their lifetime (OR 0.16, 95%CI 0.08-0.34). CONCLUSION: Sexual violence is common among refugees and host population in eastern Cameroon with no significant difference when the refugee population is integrated into the host community. Most often, perpetrators are partners/husbands or armed groups. Ability to do math is associated with a lower likelihood of reporting rape.

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ABSTRACT FINAL ID: OS43-B;

TITLE: Teaching Pediatric Emergency Medicine: Traditional vs. Simulation Enhanced Curriculum

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Simulation in medicine has seen rapid recent expansion. Evaluation tools such as checklists have been shown to discriminate between novice and experienced providers with good inter-rater reliability (IRR). We sought to evaluate the effectiveness of a simulation-enhanced curriculum compared to standard didactics. METHODS: EM residents attended didactics covering 8 pediatric topics and were then divided into groups. A randomized, controlled, cross-over design was used to provide supplemental simulation teaching followed by simulation-based testing. Four Pediatric EM faculty also completed the testing. Testing sessions were recorded and were reviewed by 3 blinded physicians, for completion of a twenty-point checklist and time to 3 critical actions. A repeated measures, mixed model analysis was performed to assess for differences between the attending, supplemental simulation and lecture-only groups. Using intra-class coefficients, IRR was determined for each scenario and as a whole. At the end of the year residents provided anonymous feedback on the curriculum. RESULTS: Data for 95% of the scenarios were available for analysis. The attending group performed significantly better than either resident group on the overdose scenario checklist ($p=0.0202$) as well as on time to antibiotics, for the neonatal shock scenario ($P=0.0142$). Checklist and time differences were non-significant for all other topic and group comparisons. IRR was moderate for the checklists (0.602) and excellent for the time to critical action (>0.75). 87.5% of residents felt the curriculum was above average or excellent. Multiple residents reported using knowledge/skills they had gained through the curriculum clinically. CONCLUSION: The study failed to demonstrate a difference between the simulation and lecture-only groups for any of the 8 topics. It did demonstrate construct validity for two of the topics. This suggests that the curriculum requires further development, refinement and ongoing assessment. Despite the lack of significance the curriculum was reportedly beneficial and generally well received by the residents.

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ABSTRACT FINAL ID: OS43-C;

TITLE: Cranial Trephination: Simulation Model for Rare but Life-Saving Procedure

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Most hospitals do not have 24/7 neurosurgical capabilities. In patients with an expanding intracranial hemorrhage, the outcome is universally poor if transfer to a tertiary care institution is required for hematoma evacuation. A study demonstrated that cranial trephination performed by Emergency Medicine (EM) physicians can result in uniformly good outcomes without significant complications. A simulation model was developed for emergent cranial trephination for EM resident education and training of this potentially life-saving procedure. METHODS: At a Simulation Center of a 950 bed urban teaching hospital, PGY 1-3 EM (n=12) residents received scenarios with patients developing expanding hemorrhage requiring emergent cranial trephination. After constructing a novel skull hematoma model, instruction and demonstration of the procedural steps for correct cranial trephination and placement of an extra ventricular drain (EVD) was performed. Pre- and post-session surveys were completed by each resident to assess knowledge of the diagnosis and management of an expanding intracerebral hemorrhage, incidence of performing trephination in the ED, and confidence level (Likert scale 0-10) in performing cranial trephination. RESULTS: Mean total time for trephination and EVD placement was 5.5 minutes. Only 1 of 12 residents (8%) had observed cranial trephination in the ED setting and 0/12 (0%) had performed this procedure. Resident comfort level in performing ED cranial trephination increased from 0.28 pre-simulation to 3.42 post simulation training. Simulation training would increase a resident's likelihood to perform cranial trephination in the future (6.82) and residents favored additional simulation training on emergent management of an expanding intracerebral hemorrhage.(6.36) CONCLUSION: Cranial trephination is an uncommon but potentially life-saving ED procedure. Few opportunities exist to perform or learn this procedure in live patients. This reproducible simulation model provides a novel approach to teaching residents and could facilitate maintenance of skills as attending required for performance of cranial trephination.

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ABSTRACT FINAL ID: OS43-D;

TITLE: Comparison of Predictive Value of Acute Physiology and Chronic Health Evaluation (APACHE) II & III Scores in Intensive Care Units, Kermanshah-Iran

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Severity of illness scoring systems is important tool in measuring outcome of patients. Measuring severity of illness enables nurses to describe intensive care unit patients' status to promote and improve the clinical decision-making in nursing and performance in ICUs. This study was aimed to compare the predictive value of APACHE II and APACHE III. METHODS: In this diagnostic clinical trial, 508 eligible patients were recruited within the first 24 hours of their admission to the ICU between (month 4) 2007 to (month 4) 2008 APACHE II & III scores were subsequently recorded and all subjects were categorized into two groups based on using each scale. Comparison was carried out after 2 weeks in terms of outcome prediction for two scales. Then test sensitivity, test specificity, negative predictive value, positive predictive value, diagnostic accuracy and Yoden index of each scale were measured. RESULTS: After two weeks, 314 (61/8%) of patients were still alive. The Yoden index was 64% for APACHE III and 59% for APACHE II. The results showed that APACHE III presents a significantly higher prediction capability than APACHE II. CONCLUSION: Hence, although APACHE III has more variables which needs more time to complete and so it is costly; this can be considered as a suitable alternative scale to use in ICUs.

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ABSTRACT FINAL ID: OS43-E;

TITLE: Critical Care Training for French Emergency Physicians: A National Report

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Since 2004, emergency medicine trainees have had to complete a 6 month clerkship in a CCU-ICU which we wanted to evaluate. METHODS: A 67 item online questionnaire was sent to the whole 2007-2009 class about their clerkships and possible remaining lacks. We calculated data distributions and ran a $\chi 2$ test and a Yates correction when necessary, to establish statistical links. RESULTS: The national response rate was 82.6%. All came from GP programs, most were satisfied with their clerkships, even if only ¼ had a specific director sensitive to the goals of their training. More than 50% performed more than 10 intubations, central venous access and arterial line placements. 72.7% were interns but performed less procedural skills (intubations, resuscitations, ultrasonographies, $p<0.05$) than the fellows. The 65% working in prehospital care complain of more lacks in practical skills ($p<0.05$). In University Hospital more pedagogical means were used ($p<0.05$). Only 10% were in ICUs but notice more lacks after clerkship than the CCU group ($p<0.05$). A lot ask for improved communication between university and clerkship directors, especially concerning training purposes. CONCLUSION: The trainees consider this clerkship as high-leveled, but it seems better for post-graduate students and in CCUs. A lot find it too short. Prehospital care physicians could receive a specific and complementary training. Better communication between university and clinical services is necessary, and the use of a standard student's handbook with clear training goals seems essential.

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ABSTRACT FINAL ID: OS43-F;

TITLE: The Cognitive Psychology of Missed Diagnoses in the Emergency Department

ABSTRACT BODY:

Abstract Body: INTRODUCTION: Cognitive psychology is the science which studies the way or method of reasoning, the way or method of judging, the decision making process. None of the processes listed above can be flawless so that errors can be expected and hopefully eschewed. Errors are common, all individuals make mistakes and tend to do it in a sort of peculiar and systematic way. For several years now even the nature of clinical reasoning has been put under investigation in the hope of finding out strategies aimed at improving doctor's performance. Diagnostic mistakes are common too, most of the time totally ignored; that's why possible solution to the problem is looked for. Many diagnostic medical errors are not technical or cultural (15%) but cognitive (80%) that is related to faulty reasoning. The clinical reasoning often takes the doctor to a quick and conclusive judgment, but at the same time contains potential sources of error. These cognitive errors have been singled out as follows: "availability error", "anchoring error", "framing error", "hasty conclusion", "representation error", "attribution error", "affectivity error" and so on and so forth. Exercises have been worked out, apt at recognizing errors and which type of error are we more frequently exposed to, as well as correcting actions possibly implemented. DISCUSSION: On the ground of these considerations, we are trying to put in practice in our E.D. and Emergency Medicine Unit a program to improve our clinical audits, to discover cognitive errors by means of two tools: the diagnostic error feed-back and the cognitive meta-analysis. The first step is to recognize in a systematic way that a mistake has been made, the second step is to analyze the reasoning that brought us to that error. If we come to know our most frequent cognitive errors, we will have the chance to become better doctors

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ABSTRACT FINAL ID: OS45-A;

TITLE: Could Telemedicine Replace Lack of Physicians in Critical Situations in the Pre-hospital Setting?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: There is a lack of pre-hospital physicians in several locations of Moldavia, north-east of Romania. Many locations are situated tens of kilometers from a hospital and ambulances with nurses or paramedics often deal with critical cases. The telemedicine intervention (transmission of vital signs in real time associated with clinical data provided by the nurse or paramedic) allows coordinating physicians to diagnose, make recommendations (including drug administration) and properly manage the patient. Our aim was to assess the role of a coordinating physician in the management of critical cases in the pre-hospital setting using telemedicine. METHODS: We used telemedicine transmissions over six months (October2010-March2011) to cover a 36850 km2 area with 3.8 mil citizens. Transmissions (by mobile phone system) included monitoring data: HR, respiratory rate, ECG, SaO2, arterial blood pressure and clinical data provided by nurse or paramedic. The coordinating physician provided recommendations and decided the patient management. RESULTS: From a total of 248 transmissions during this period, 79.4% were made by ambulances with nurses and 20.6% by paramedics. 64.2% were transmitted from Vaslui, 16.9% from Suceava, 13.7% from Iasi, 3.2% from Bacau, 1.2% from Neamt and 0.8% from Botosani. 12 lead ECGs were transmitted in 37.5% cases, so the physician could diagnose arrhythmias or AMI. 62% of cases had cardiovascular pathology, 10.4% were in cardiac arrest, 4.8% had acute respiratory failure, 7.3% stroke and 1.6% intoxications. In 34.6% of cases of cardiac arrest a physician could be dispatched, in 65.4% nurses or paramedics received indications from the coordinating physician; 30.8% of the cases with cardiac arrest reached the hospital during CPR, 27% were declared dead. Intervention with a helicopter occurred in 11.9% of cases. CONCLUSIONS: Telemedicine has a critical role in management of critical cases in pre-hospital settings; recommendations provided by the coordinating physician have led to an improvement in patient condition before arrival at the hospital in 53% of cases.

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ABSTRACT FINAL ID: OS45-B;

TITLE: The Process of the Provision of Pre-hospital Care for Road Traffic Injuries in Iran: A Grounded Theory Study

ABSTRACT BODY:

Abstract Body: OBJECTIVE: A significant proportion of mortality and morbidity could be prevented by improving the process of the pre-hospital emergency medical care particularly in low and middle-income countries with a high rate of Road Traffic Injuries (RTI) such as Iran. Identifying the process of providing pre-hospital emergency medical care is essential for improving delivery of trauma care for RTIs victims. This study was designed to explore the process of pre-hospital Emergency Medical services (EMS) in Iran based on experiences and perceptions of EMS managers, staff and RTI victims in Tehran, the capital city of Iran. METHODS: A qualitative research study using grounded theory approach with purposive and theoretical sampling was used. Data were gathered through two focus group discussions and 16 individual interviews with four RTI victims, four ambulance staff and four ambulance managers and four experts in field of EMS. The data were analyzed using constant comparative analysis method. RESULTS: The process of the provision of pre-hospital medical care of road traffic injuries was explored to some extent and contributing factors to delivering effective trauma care were identified. Training of dispatch staff, defining unique and comprehensive coding systems in dispatch, distributing missions between stations based on capacity and situation, improving communication between the dispatch system and ambulance staff, improving communication and coordination between the ambulance staff and hospital emergency department are some of the important factors which have been explored. CONCLUSIONS: This study explored some important factors to improve the process of the provision of pre-hospital medical care for road traffic injuries in Tehran. Low quality of data registry, lack of unified coding system and insufficient communication, coordination and education were emphasized by study participants as the main issues which need improvement. Because of the big focus of the study, more analysis and interpretation is needed to shed light on all aspects of this phenomenon.

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ABSTRACT FINAL ID: OS45-C;

TITLE: Attempted and Completed Suicides in Air Rescue Missions:
A 2-Year Analysis from a German Helicopter Base

ABSTRACT BODY:

Abstract Body: OBJECTIVE: In Germany, emergency physicians in the prehospital rescue system ensure primary care. The rescue helicopter in Dresden covers the city of Dresden (population 517,000), surrounding areas with distances up to 70 km. Typical reasons for alerting the rescue helicopter are heart diseases or injuries during accidents. There also is a high number of patients with attempted or completed suicides. The goal of the study was to analyze cases associated with suicide. METHODS: Data of all emergency cases from the German Air Rescue (DRF-Luftrettung) Helicopter Base Dresden between January 2008 and December 2009 were recorded on a standardized protocol and transferred to a central computer database. Subsequently, all cases were analyzed with special regard to suicides. RESULTS: There were a total of 3,051 cases during the study period. Fifty-nine cases (1.9%) were related to suicide. The helicopter was on the scene within 10.9 minutes [5-22]. The mean NACA Score was 4.9. The mean age was 51.6 [6-94] A total of 52.5% of patients were male. In 15.2% of the cases, the patient hiimself called for emergency help; in 37.3%, bystanders contacted authorities. The reason for attempted suicide was unknown in 57.6% of the cases. In 16.9%, it was related to partnership, in 20.3% to health problems, in 5.1% to financial problems. The main method of attempt was the use of medical pills (47.4%). Female victims more often use medical pills than male victims. Other frequent methods were strangulation (18.6%), stab wounds and gunshots (8.5%), intoxication (3.4%), or unknown (15.3%). Ten patients were dead before arrival of the helicopter. Another six patients received cardiopulmonary resuscitation, four achieved a return of spontaneous circulation. The overall lethality was 20.3%. CONCLUSION: Helicopter teams often are confronted with suicide victims. This study demonstrates the need for better prevention as well as an improvement of education for emergency physicians working in the prehospital setting.

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ABSTRACT FINAL ID: OS45-D;

TITLE: How Does the Use of Telehealth for Patients Referred to a Retrieval Service Alter Timing, Destination, Mode of Transport, Escort Level and Patient Care?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Aeromedical retrieval is an essential element of the Emergency Health System, which allows patients in rural areas timely access to definitive care. This process should ensure that patients have an appropriate level of care in flight and are transported not just to the closest hospital, but to hospitals with the resources most appropriate to their needs. Our aim was to determine the utility of telehealth in aeromedical tasking decisions, especially with regard to timing, destination, mode of transport and escort level, by Medical Co-ordinators with Retrieval Services Queensland (RSQ). METHODS: A structured survey was used to collect information with both binary response questions and Likert scale responses. RSQ Medical Co-ordinators from the Northern Operations site in Townsville were asked to complete a data sheet with regard to changes that telehealth made to their retrieval decision making process for patients meeting pre-determined urgency criteria referred from selected sites. Formal written consent was obtained from each Co-ordinator, as was ethics approval. RESULTS: During the study from 17 May 2010 to 16 May 2011, there were 46 telehealth consultations and 44 completed survey forms were returned. The RSQ Medical Co-ordinators reported that the use of telehealth altered their decisions in 15 cases (most often for severity of patient condition, then diagnosis and priority of transfer), and/or assisted with confirming original decisions in 30 cases (in the same three areas as for decision alterations). It was not of assistance or definitely not of assistance in 6 of the cases where no use in confirmation was found. CONCLUSION: The results indicate the use of telehealth for an expanded range of patient referrals to Retrieval Services Queensland has benefit in either changing the decisions of Medical Co-ordinators, or confirming the decisions already made in the areas of severity, diagnosis and timing of transfer, more often than with destination, mode of transport or escort level during transfer.

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ABSTRACT FINAL ID: OS45-E;

TITLE: Quo Vadis Emergency Medical Services: A 6 - Year Survey of a German City

ABSTRACT BODY:

Abstract Body: OBJECTIVE: In the city of Dresden, emergency medical care is provided by thirty ambulances and one rescue helicopter. The number of emergency cases has increased over the years. The goal of the study was to evaluate emergencies compared to general changes of the population to identify requirements with regard to emergency services. METHODS: Data of all emergencies were collected with a special notepad (Husky fex21®) and transferred to a central database. All cases between 1/2003 and 12/2008 were extracted from the database and analyzed concerning to general and demographic data, rescue time and diagnoses. RESULTS: A total number of 413.455 emergency cases were documented during the study period. There was an increase of 4000 cases (6.8%) annually. 2003: 58501, 2004: 61942, 2005: 67489, 2006: 71346, 2007: 75674, 2008: 78503. The fraction of patients in the group over 65 years increased from 46% to 52%. Simultaneously the fraction of patients at the age 18-64 decreased from 46.3% to 41.5% and in the fraction 0-17 from 7.6% to 6.5%. The number of patients over age 100 years also increased. (2003: 11; 2008: 57). The most common diagnoses were heart diseases. In 2003: 18.7%; 2008: 16.6%. The second frequent diagnoses were emergencies associated with circulation. In 2003: 16.2%; 2008: 17.1%. Altogether internal diseases were responsible for almost 50% of all emergency cases. Another frequent diagnosis group was psychiatric diseases. 2003: 8.2% 2008: 9%. All at all there is a high increase in emergency cases, but the frequency of specific diagnoses has not changed. CONCLUSION: Every year we see an increase of emergency cases and more emergencies in very aged patients. A high number of patients are not life-threateningly ill with regard to NACA classification. EMS were often alerted to compensate social or minor medical problems. Providing prehospital emergency care in high quality is the mission, but the conditions have changed. However, we should review the proceedings of our mission control centers. In addition the implementation of 24 hour services of general practitioners are reasonable.

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ABSTRACT FINAL ID: OS45-F;

TITLE: Dispatch for Syncope

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Syncope is a symptom of cerebral hypoperfusion and is defined as a short, sudden, self-terminating episode of loss of consciousness with failure to maintain postural tone. Every day the Dispatch Center receives a lot of calls (in the City and County of Torino (Italy) more than 650 calls/day for the EMS) with a large number from persons that don't have medical education. Sometimes medical terms are used by the caller, but not in the appropriate way. We analyzed all the calls where the caller referred to the principal symptoms as syncope and the situation at the arrival of an ALS team of the County of Turin. METHODS AND RESULTS: During the month of November and December 2010 an ALS team was dispatched 186 times. In 58 (31.2%) cases the principal symptom of the call was syncope. 31 patients (53,4%) were male, 27 (46,6%) female. The median age was 67,5 yo (range 11 months – 96 yo, median 75 yo) and 30 (51.7%) patients were elderly (age > or = 75 yo). 43 (75.4%) were at home. In 18 (31%) cases the patient was in cardiac arrest at the arrival on scene of the ALS team and in 11 (19.0%) of these, the patient was clearly dead and the reanimation was judge as futile. 1 patient had AMI and was going in cardiac arrest during the transport to the hospital. In 20 (34.9%) patients the problem was neurological related, as stroke, ischemic transitory attack, seizure. In 4 (7%) the problem was orthostatic hypotension and in the other 2 (3.5%) the problem was hypoglycemia that was treated on scene. In 3 (5.2%) cases the patient refuses hospitalization. CONCLUSIONS: The term syncope was used often by the caller to refer to a critical presentation that could range from cardiac arrest to orthostatic hypotension. It is not possible in this limited study to identified variables to predict the patient at high-risk or low-risk for poor short-term outcomes in particular from the symptoms referred during a telephone call. Moreover, this study has a few limitations as the data are limited to only one ambulance station. However, these limited data suggest that the symptom syncope is related in the largest part to common life-threatening complaints.

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ABSTRACT FINAL ID: OS45-G;

TITLE: Evaluation of Air Rescue Missions with Helicopter: A 5 Year Analysis from a German Helicopter Base

ABSTRACT BODY:

Abstract Body: OBJECTIVE: In Germany, emergency medical care is provided by ambulances. Emergency physicians also are used in the German rescue system to ensure primary care. Additionally, rescue helicopters are insertable. The rescue helicopter in Dresden covers the city of Dresden and its surrounding areas, with 517,000 inhabitants and distances up to 70 km. The goal of this study was to evaluate emergency cases in helicopter rescue missions with regard to primary diagnoses and severity of the mission on the basis of NACA Score. METHODS: Data from all emergencies using the German Air Rescue (DRF-Luftrettung) Helicopter Base Dresden were recorded on a standardized protocol and transferred to a central computer database (MEDAT®). Data from all emergency cases between January 2006 and December 2010 were analyzed. RESULTS: There was a total of 7,068 emergencies during the study period, with a significant increase over time. The helicopter was on-scene within 10.9 minutes. In total, 54.9% of the patients were male. The rate of female patients >80 years of age was 64.5%. A total of 54.7% of patients suffered life-threatening injuries or dysfunctions and a NACA score ≥4. A total of 6.0% of patients were classified in NACA 6 or 7. The most common cause for rescue missions was an acute coronary syndrome (19.8%). Other frequent diagnoses included brain injury (12.8%), stroke (12.7%), unconsciousness (12.5%), general cerebral convulsion (7.5%), polytrauma (6.4%), and cardiac arrest (6,0%). The rate of prehospital endotracheal intubation was 11.9%. In 0.8% of patients, a thoracic drainage was established. First aid actions by bystanders were performed in 28.2% of all cases. CONCLUSION: In recent years the number of helicopter rescue missions increased, along with injury severity. The total number of patients with NACA 5,6 and 7 was extremely high, and demonstrates the need for an efficient emergency medical rescue system, which is on the scene within a short time. In respect to rescue time and indications the insertion of a rescue helicopter was reasonable.

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ABSTRACT FINAL ID: OS46-A;

TITLE: Recommended Public Access Defibrillation Placement by Out of Hospital Cardiac Arrest Occurrence in Singapore

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Public access defibrillation (PAD) has shown potential to increase cardiac arrest survival rates. The American Heart Association recommends an automated external defibrillator (AED) placed in public areas with a high probability of cardiac arrest occurring in 5 years. To determine the incidence rate of pre-hospital cardiac arrests for different location categories and assess the potential for deployment of a PAD program. METHODS: Denominators of arrest sites in Singapore were obtained from public accessible sources e.g. government agencies' websites. Where the information was not available on the public domain, government officers were contacted or statistics purchased from the Singapore Department of Statistics. RESULTS: From 1 October 2001 to 14 October 2004, 2 254 patients were enrolled into the study. Mean age for arrests was 62.2 years with 67.5% males. The location category with the highest average incidence of cardiac arrests per 5 years was Port/ Airport/ Immigration Checkpoints (5.24). The sites with a high average incidence of cardiac arrests per 5 years were Changi Airport (25.0), Subordinate Court (5.0), Singapore Turf Club (3.33), Choa Chu Kang Cemetery (3.33), SCDF Ambulances (3.17), Immigration Checkpoints (2.5), Sentosa (1.67), Night Safari (1.67), Ferry Terminals (1.67) and Nursing Homes (1.06). 71.4% of arrests occurred in residences, with HDB flats accounting for 88.9% of these arrests. Incidence of cardiac arrests in residential areas was highest in the Central and Eastern parts of Singapore. The postal sector with the highest average incidence of cardiac arrests in a residential area was Tampines/ Simei (113.0) while that with the highest average incidence per 100 000 population was Geylang Bahru (65.0). CONCLUSIONS: There was a definite location distribution pattern of cardiac arrest. This study has implications for implementing a PAD program, targeted CPR training and AED placement.

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ABSTRACT FINAL ID: OS46-B;

TITLE: The Performance of an Anaeroid Endotracheal Cuff Pressure Manometer at Altitude: A Validation Exercise

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Endotracheal tubes (ETT) are usually of a low pressure/high volume design. At increasing altitude, intracuff pressure rises which can lead to direct complications such as cuff rupture as well as pressure effects on the tracheal mucosa. This is confirmed by previous studies showing that there is a significant rise in ETT cuff pressure in patients transported at normal aviation altitudes by rotary wing aircraft. Anaeroid gauge manometers, can be used to measure endotracheal cuff pressure. However as they are calibrated at sea level they are not validated for use at altitude and previous work has raised concern about the accuracy of these anaeroid manometers under flight conditions. Aim: Does a mechanical anaeroid endotracheal cuff pressure monitor accurately measure endotracheal cuff pressure at altitude? METHODS: An airway trainer mannequin was intubated using a size 8.0 Portex soft seal endotracheal tube. The cuff pressure was then adjusted to 22 cmH2O measured using a Portex Cuff inflator and pressure indicator at sea level. The cuff was also connected via a three way tap to a Propaq Encore monitor with a transducer set normally used for measuring invasive pressures. The transducer set was zeroed at sea level and the three way tap turned off to the transducer when not taking measurements to prevent the influx of fluid into the cuff and subsequently altering the intracuff pressure. The mannequin and monitoring were then flown to an altitude of 6000ft in a rotary wing aircraft. The ETT cuff pressure was measured simultaneously at 500ft altitude increments by both pressure monitoring devices. RESULTS: A total of 24 cuff pressures measurements were recorded. Cuff pressures reached a maximum pressure of 93 cmH20. A Bland-Altman plot (Fig 1) applied to the data revealed a reasonable line of agreement between the Propaq pressure transducer and Portex cuff manometer with an average over read of 2 cmH20 by the manometer. CONCLUSIONS: Our data shows a hand held anaeroid ETT cuff manometer to be a valid method of measuring intracuff pressures during rotary wing flight at altitudes up to 6000ft.

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ABSTRACT FINAL ID: OS46-C;

TITLE: Rescue Missions for the Very Aged People - Reasonable or Nonsense? A 30-month-analysis of People in the Age over 100 of a German City.

ABSTRACT BODY:

Abstract Body: OBJECTIVE: In the city of Dresden emergency medical care is provided by thirty ambulances and one helicopter. The mean age of the population has increased during recent years. Simultaneously the number of rescue missions for elderly patients (pat) is rising up. The goal of the study was an evaluation of emergency cases in very old pat to identify circumstances and requirements with special regard to emergency medical services. METHODS: Data on all emergencies were collected with a notepad Husky fex21®) and transferred to a central computer system. All cases between 1/2008 and 6/2010 of pat in the age of 100 or more were extracted from the database and analysed. RESULTS: A total number of 204773 cases of emergency were documented during the study period. In 212 cases pat were in the age of 100 or more years. 88.2% were female. Ambulances were on the scene within 6.0 min [0 - 17]. In 47,1% location of emergency was at home, in 45.8% in a nursing home. In 37.8% of cases the patients had life-threatening injuries or dysfunction with a NACA score 4 and higher. In 3.8% patients were classified in NACA 7. The most common cause for the rescue mission was a minor head trauma after downfall with 25.9% of the cases. Injuries of the lower limbs were documented in 13,2% of cases. Other frequent diagnoses were unspecific pain (11.8%), pneumonia (9.4%), acute coronary syndrome (8.0%), stroke (7.0%), hypoglycemia (5.9%), unconsciousness (4.7%) and cardiac arrest (3.8%). No pat received cardiopulmonary resuscitation or endotracheal intubation. However, 65.9% of the pat were admitted to hospital. 8.2% denied a transport. CONCLUSION: Every year we see more emergencies in very old patients. There is a high number of pat with life-threatening injuries or dysfunction requiring emergency care. We have to adjust the conditions in this field of emergencies. The implementation of 24 hour services of general practitioners, adaption of emergency rooms, as well as special education for emergency professionals with regard to diagnoses and ethical aspects in elderly pat are reasonable.

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ABSTRACT FINAL ID: OS46-E;

TITLE: Investigation of the Frequency of Different Diseases in Northern and Southern Geographical Areas of Tehran Reported to 115 Emergency Services

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Urban society hosts many cultural, economic and social differences that may be a cause of specific diseases. Because the process of decision-making should be based on necessities we attempted to gather and organize information from 115 emergency centers for each area. METHODS: At the beginning, four emergency teams each consisting of two trained technicians and each equipped with one vehicle were used. Two of the teams were deployed to southeastern Tehran and two were deployed to the northeast. These teams were commissioned to transfer patients to the nearest hospital after receiving emergency calls. We reviews and categorized patient calls as cardiovascular, bronchitis, non-drug abuse suicidal, poisoning and accidents. RESULTS: Car accidents were the most frequent causes of emergency calls in both southern and northern areas of Tehran. The number of accidents and the related frequency of death and injury were greater in northern Tehran. The only source of emergency calls for which women were more the actuators was suicide. In northern areas of Tehran, addictive drug abuse was more frequent in men while non-addictive drug abuse was more frequent in women. In both northern and southern areas, the highest rates of poisoning and accidents belonged to 18-27 age groups and the most frequent cause of emergency calls related to 48-57 age groups was heart condition. The rarest cause of emergency calls for both southern and northern areas was manslaughter, though the absolute number of this was greater for southern areas and the age group involved was mostly 18-27 years. CONCLUSION: We concluded that more attention should be allocated to equipping medical centers according to the causes of medical conditions and type of illnesses rife in each area.

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ABSTRACT FINAL ID: OS47-A;

TITLE: Whole Blood Lactate Kinetics in Patients Undergoing Quantitative Resuscitation for Septic Shock

ABSTRACT BODY:

Abstract Body: OBJECTIVE: To compare the association of whole blood lactate kinetics with survival in patients with septic shock undergoing early quantitative resuscitation. METHODS: Preplanned analysis of a multicenter ED based RCT of early sepsis resuscitation targeting 3 physiological variables: CVP, MAP, and either central venous oxygen saturation or lactate clearance. Inclusion criteria: suspected infection, 2 or more SIRS criteria, and either SBP <90 mmHg after a fluid bolus or lactate >4 mmol/L. All patients had an initial lactate measured with repeat at two hours. Normalization of lactate was defined as lactate decline to <2.0 mmol/L in a patient with an initial lactate ≥2.0. Absolute lactate clearance (initial-delayed value), and relative ((absolute clearance)/(initial value)*100) were calculated if the initial lactate was ≥2.0. The outcome was in-hospital survival. Receiver operating characteristic (ROC) curves were constructed and area under the curve (AUC) was calculated. RESULTS: Of 272 included patients, median initial lactate was 3.1 mmol/L (IQR 1.7, 5.8), and median absolute and relative lactate clearances were 1 mmol/L (IQR 0.3, 2.5) and 37% (IQR 14, 57). An initial lactate >2.0mmol/L was seen in 187/272 (69%) and 68/187 (36%) patients normalized their lactate. Overall mortality was 19.7%. AUCs for initial lactate, relative lactate clearance, and absolute lactate clearance were 0.70, 0.69, and 0.58, respectively. Lactate normalization best predicted survival (OR 6.1, 95% CI 2.2-21), followed by lactate clearance of 50% (OR 4.3, 95% CI 1.8-10.3), initial lactate of <2 mmol/L (OR 3.4, 95% CI 1.5-7.8), and initial lactate <4 mmol/L (OR 2.3, 95% CI 1.3-4.3), with lactate clearance of 10% not reaching significance (OR 2.3, 95% CI 0.96-5.6). CONCLUSION: In ED sepsis patients undergoing early quantitative resuscitation, normalization of serum lactate during resuscitation was more strongly associated with survival more than any absolute value or absolute/relative change in lactate. Further studies should address if strategies targeting lactate normalization leads to improved outcomes.

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ABSTRACT FINAL ID: OS47-B;

TITLE: Acute Myocardial Dysfunction in Severe Sepsis

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The development of hemodynamic instability plays a key role in the progression from sepsis to severe sepsis and septic shock. The aim of this study was to identify the prevalence of acute myocardial dysfunction (AMD) and clinical predictors of heart involvement in septic patients. METHODS: From June 2008 to April 2011 we performed an echocardiogram on 65 patients with severe sepsis or septic shock without known heart disease within 5 days from admission in our High Dependency Unit. Myocardial involvement was defined as global left (LV EF<50%) or right ventricular (RV TAPSE<18 mm) systolic dysfunction. Patients were divided into 2 groups according to the presence (D+) or absence (D-) of AMD. RESULTS: The study population included 35 males and 30 females with mean age of 74±14 years. Within 28 days 14 (23%) patients died, LV-AMD was found in 26 patients (40%) and RV-AMD in 3. Comparing patients with and without AMD, index of sepsis severity like the SOFA score after the first 24h, lactate level on admission and lactate clearance were similar. Hemodynamic profile, in terms of mean arterial pressure and highest heart rate worst value in the first 48h did not show any difference. Hemodynamic support with vasopressors had been used in 22 patients (33%) and showed a correlation with 28 days mortality (46% vs 10% p=0.001) but not with AMD. Troponin I peak was no different in the 2 groups while pro-BNP measured on admission, after 24h and the maximum value were significantly higher in patients with AMD. Procalcitonin values in turn showed a similar trend, both measured after 24h and as peak value (Table 1). Mortality rates were similar in the 2 groups (19% D- vs 20% D+ p=NS) while patients with AMD showed a higher degree of disability expressed as a worsening in ADL scale (0% vs 36.4% p=0.011). CONCLUSIONS: AMD was observed in about half of severe sepsis and septic shock patients; it was related to a higher degree of disability at hospital discharge. Heart involvement was not linked to sepsis severity and was not predictable by hemodynamic parameters, but biomarkers such as procalcitonin and pro-BNP are useful to detect myocardial dysfunction in severe stages of septic disease.

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ABSTRACT FINAL ID: OS47-C;

TITLE: Validation of the PIRO Score for the Prognostic Stratification of Patients with Severe Sepsis and Septic Shock in the Emergency Department

ABSTRACT BODY:

Abstract Body: OBJECTIVE: It's largely known that severe sepsis and septic shock are complex diseases with a great variability in etiology, evolution and prognosis. Recently a PIRO (Predisposition, Infection, Response and Organ-dysfunction) model was proposed by Howell et. al to describe with better accuracy septic patients and to stratify them from a prognostic point of view. The aim of this study was to validate the PIRO model in patients with severe sepsis or septic shock in the Emergency Department (ED). METHODS: We performed a retrospective analysis on 182 patients admitted from June 2008 to April 2011 to the ED of the University Hospital of Careggi with a diagnosis of severe sepsis or septic shock according to the criteria SCCM / ESICM / ACCP / ATS / SIS in 2001, and subsequently admitted in our High Dependency Unit (HDU). We calculated the PIRO score (Table 1) at admission and after 24 and 48 hours and we grouped our population into 5 classes by PIRO score (0-4, 5-9, 10-14, 15-29 and >30 points). We analyzed the 28-day mortality rates in the different categories. We finally performed a Bonferroni post-test correction for multiple tests and considered significant any p value <0.005/3=0.0167. RESULTS: The characteristics of the study population are shown in Table 2. The 28-day mortality was 32% (n=58). An admission in Intensive Care Unit (ICU) was needed in 26 (14%) patients. As this study evaluated only patients with severe sepsis and septic shock in a HDU, with respect to the PIRO model (Howell, Crit Care Med 2011), we had no patients in class 1 and in class 5 subjects were only 5 and were included in the preceding. An increasing PIRO score after 24 hours (14% for class 2, 38% for class 3 and 50% for class 4; p=0.00117 between class 3 and class 4) and 48 hours (8% for class 2, 32% for class 3 and 63% for class 4; p=0.0096 between class 2 and class 4) in the HDU was associated with higher mortality. CONCLUSIONS: The PIRO model can be used to describe with more accuracy patients affected by severe sepsis and septic shock in an ED setting, with a significant prognostic value.

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ABSTRACT FINAL ID: OS47-D;

TITLE: The Role of a Novel Recombinant Human Soluble Thrombomodulin for Sepsis and Disseminated Intravascular Coagulation Patients

ABSTRACT BODY:

Abstract Body: OBJECTIVE: It is expected that recombinant human soluble thrombomodulin (rTM) not only reverses hyper-coagulative status through activating protein C but also prevents multiple organ failure. rTM may improve both physiological scores and the amount of mediators, and reduces the mortality of sepsis and DIC patients in 28 days. Purpose: We started a new protocol by adding rTM for sepsis and disseminated intravascular coagulation patients. We introduce the preliminary report in this paper. METHODS: We enrolled and analyzed 21 patients who were treated for septic DIC from May to October 2008. Our primary endpoint was mortality in 28 days. As composite outcomes, we followed Acute Physiology and Chronic Health Evaluation (APATCHE II) score, Sequential Organ Failure Assessment (SOFA) score, acute phase DIC score, and serum soluble thrombomodulin, TNF-α, IL-1β, IL-6, HMGB-1, protein C, protein S levels during 10 days. Statistical analysis was performed by Wilcoxon rank-sum test. $P < 0.05$ was regarded as statistically significant. RESULTS: We found that all scores and mediators improved after administration of rTM in Day 10, but there was no significant improvement in at 28 days. Median of each score or mortality was as follows; APATCH II score: 32 at Day 1 to 26 at Day 10 ($p=0.0048$), SOFA score: 12 to 8 ($p=0.0096$), acute phase DIC score: 5 to 3 ($p<0.001$), SIRS score: 3 to 2 ($p=0.0095$), mortality in 28days: 46.9%. Significant adverse effects such as gastrointestinal bleeding, cerebral hemorrhage, and bronchial hemorrhage by using rTM were not observed in this trial. CONCLUSION: Various physiological scores improved in acute phase, but mortality did not improved so far.

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ABSTRACT FINAL ID: OS47-E;

TITLE: Intraosseous Access for Fluid Administration in a Simulation Setting: Comparison with Intravenous Access

ABSTRACT BODY:

Abstract Body: OBJECTIVE: This study evaluates the influence of experience of emergency care physicians on the speed of the establishment of an intraosseous access (IOA), in comparison with peripheral venous access (PVA). METHODS: After a theoretical introduction & practical demonstration of the EZ/IO®, 73 emergency care providers from a prehospital service, formerly naive to the IO technique and willing to participate in the study, were divided in two groups according to their experience in PVA in the emergency setting - experts group (E;>1 year of experience; n=51) and the beginners group (B;<1 year of experience; n=22). Each participant performed successively in a random sequence, PVA on a Multi-Venous Access IV Arm model and IOA on a Laerdal Tibial model, according to the institutional guidelines and the EZ/IO constructor's instructions. The primary endpoint was the time from start of the technique to the confirmation of an efficient flow, defined as aspiration of blood from PVA and presence of liquid in the medullary space after IOA, whatever the number of attempts. The participants then filled a questionnaire: 1) ease of placement of the IOA (yes or no); 2) perceived comparative ease of placement, rapidity, and safety of IOA when compared to PVA (superior, identical, or worse), and 3) first choice in a life-threatening situation (IOA or PVA). Wilcoxon signed rank test and median test of mood was used. RESULTS: Overall OIA was achieved significantly faster than PVA (p <0.0001). PVA was achieved significantly faster by the experienced group (p=0.003). However, there was no difference between the groups with respect to IOA (p =0.165). IOA was graded as easy by 71% of the participants and superior to PVA for ease of placement, rapidity and safety (80%; 69% and 97% respectively). The first choice in a life-threatening situation was IOA for 67% of the participants. CONCLUSION: In this simulation, IOA proved swifter than PVA. The time of completion for IOA was independent of the experience of the operator and remained shorter even in the beginners group. IOA was superior to PVA for all the evaluated variables.

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ABSTRACT FINAL ID: OS48-A;

TITLE: Fast and Adequate Determination of Severity of Pneumonia in the Emergency Department: Alternatives to the PSI.

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The Pneumonia Severity Index (PSI) is commonly used to determine the severity of pneumonia in the Emergency Department (ED). PSI is a validated scoring system, however it requires assessment of multiple variables and arterial blood gas. Other scoring systems are: CURB65 (Confusion, Urea, Respiratory rate, Blood pressure and age) and REMS (Rapid Emergency Medical Score). The aim of this study was to determine these scores in patients reporting to the ED with a suspected pneumonia, in correlation with PSI. METHODS: This descriptive retrospective study took place at the ED of a university hospital in the Netherlands. The medical charts of patients with pneumonia in the ED between January 1 and December 31 2008 were studied. Patients were excluded in case of incomplete documentation, prior diagnosed pneumonia, age <18 years, or suspected viral infection. Collected data included variables to calculate the different scoring systems (PSI, mPSI (modified PSI: no arterial blood gas), CURB65, REMS, see table 1). PSI was used as 'golden standard'. Correlations between the different scores were determined using the Spearman Rank Correlation test. RESULTS: A total of 333 patients were included. The before-mentioned scores were calculated. All individual scoring systems significantly correlate with each other ($p<0.01$). The correlation coefficient was highest when comparing PSI with mPSI ($r=0.979$). Moderate, but statistically significant correlations were found when comparing PSI with REMS ($r=0.691$), CURB65 ($r= 0.685$) or CURB ($r=0.526$). See table 2. CONCLUSIONS:

The scoring systems CURB65, CURB and REMS are validated alternatives for PSI in determining the severity of pneumonia. There is a high and significant correlation between mPSI and PSI pH does not contribute to the outcome of PSI. For fast and adequate determination of severity of pneumonia in the ED, we recommend the scoring system REMS, as it does not require waiting for blood test results. Future studies should focus on prospective validation of REMS for determining severity of pneumonia in the ED.

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ABSTRACT FINAL ID: OS48-B;

TITLE: The Role of Routine Chest Radiography in High Risk ACS

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Every year in England and Wales 700,000 people present to their ED with chest pains. Chest radiography is a commonly ordered investigation for this patient group with one study reporting a rate exceeding 70% despite the fact that chest radiography is not included in guidelines for risk stratification. Notably, radiology accounts for 6-10% of all health care expenditures. Hubbell et al found that abnormalities were found in 36% of patients but these findings had little additional value and altered management in only 4% of patients. METHODS: A retrospective study was conducted of 306 patients presenting to our ED between February and July 2010 with suspected diagnosis of high risk ACS. The main outcome analysis was the proportion of patients who had a chest radiograph in the ED was recorded as the primary study objective. RESULTS: Chest radiography was performed in 92.5% of patients. There was documented evidence that in 6.0% of cases ED management had been altered (e.g. acute pulmonary oedema, pneumonia etc.) An abnormality was reported in 26.9% of patients by the radiologist, although most were of no consequence. CONCLUSION: The proportion of chest radiographs with significant pathological findings in high risk ACS is low and rarely altered their ED management. Routine chest radiography for this group is questionable and needs further investigation. Cases should be considered individually before a CXR is ordered. When using their clinical acumen doctors may have a low threshold for requesting a CXR in the ED. The exclusion criteria ensured that the patients enrolled had no specific indication for a CXR other than as a screening tool for pathology that could otherwise be missed. Most of our patients (92.5%) underwent radiography at a rate higher than that reported by others (60-70%). In 2010 ~ £7980 went towards chest radiographs in our trust that did not show any new abnormalities or effect patient management for high risk ACS.

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ABSTRACT FINAL ID: OS48-C;

TITLE: What Advice is Given to Patients Discharged from the Emergency Department after Treatment of a Spontaneous Pneumothorax?

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The British Thoracic Society (BTS) recommends that patients diagnosed with spontaneous pneumothorax should be given the following advice on discharge: To return if short of breath, to never dive (unless they have bilateral surgical pleurectomies), and to not fly until 6 weeks after the pneumothorax has resolved. The aims of this study were to discover what advice is given to patients discharged from our ED after treatment of spontaneous pneumothorax, and to ask whether junior doctors are aware of what advice should be given to patients discharged after treatment of spontaneous pneumothorax. METHODS: A retrospective study was performed on all patients who presented to our ED with a confirmed spontaneous pneumothorax between 01/01/2009 – 12/10/2010. Notes were analyzed and any discharge advice recorded. A verbal survey of randomly selected junior doctors working in different specialties in the West Midlands Deanery was performed. We asked what advice should be given to a patient with a spontaneous pneumothorax upon discharge. RESULTS: 35 patients were identified, 12 patients were discharged from the ED after treatment. 50% (6/12) had advice regarding diving, flying and breathlessness documented, 42% (5/12) had advice on breathlessness documented, and 1 had no advice documented. The survey of 20 junior doctors revealed that 100% (20/20) of respondents were aware of advice to return if breathless, 65% (13/20) were aware of advice regarding flying, and 35% (7/20) were aware of advice regarding never diving. CONCLUSIONS: Patients are not always being given full discharge advice as recommended by the BTS, and junior doctors are not aware of all the advice that should be given on discharge. A patient information leaflet on spontaneous pneumothorax has been designed, which contains advice regarding diving, flying and breathlessness. This can be given to patients on discharge to ensure they are receiving all of the information recommended.

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ABSTRACT FINAL ID: OS48-D;

TITLE: Hospital Emergency Medical Assistance Code

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The Emergency Medical Treatment and Active Labor Act (EMTALA) mandates that Medicare participating hospitals must stabilize and provide treatment for any person with an emergency medical condition. In 2000, EMTALA expanded the definition of “comes to the ED” to include medical events or trauma incidents that occur to visitors or passersby within 250 yards of the hospital. Accordingly, hospital staff have developed policies and procedures to respond to “Code EMA”, though there are no standard guidelines as to the level of training a responder might require. We sought to define the specific conditions warranting code EMA, and to determine the disposition from these occurrences as a means to audit the quality and preparedness of our code EMA teams. METHODS: We performed a retrospective chart review of 399 sequential code EMA’s at our academic level one trauma metropolitan hospital from January 2009 through December 2010. Our code EMA team consists of a security officer, registered nurse, respiratory therapist, and emergency medical technician. Data was obtained from our electronic coding systems; informed consent was waived due to study design. Patient demographics including code EMA condition and disposition were assessed. RESULTS: Code EMA Disposition: On scene, 37 patients refused ED evaluation, 4 were cancelled, and one person died. Of the 357 patients triaged to the main ED, 9 left without being seen, 4 left against medical advice, 26 were transferred to labor and delivery, and 240 (72%) were evaluated then discharged. Of the 78 (24%) admitted patients, 61 went to a med-surg bed, and 17 (5%) required intensive care.

Code EMA Condition: cardiac (35), respiratory (20), neurologic (156: seizure, syncope, dizziness), trauma (61), labor/obstetrical (31), psychiatric (14), endocrine (5), miscellaneous/other (35). Medical complaints accounted for 81% and trauma for 19% of conditions. CONCLUSIONS: Code EMA’s represented a wide spectrum of conditions with nearly one in four requiring admission. Code EMA teams should reflect the skill set of a paramedic: able to manage critical ill patients, cardiac or respiratory arrest and major trauma.

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ABSTRACT FINAL ID: OS48-E;

TITLE: Emergency Medicine: Advocating for Ethical Standards in International Medical Care

ABSTRACT BODY:

Abstract Body: OBJECTIVE: International heath care takes place in a variety of settings in which many ethical dilemmas arise. There is a widespread, growing interest among emergency physician (EPs) in the practice of international medical care (IMC), as reflected in the increased representation of EPs in international care settings and through the evolution of the international emergency medicine (EM) subspecialty. This trend, coupled with the clinical skill set which allows EPs to function well in a variety of settings, uniquely positions EPs to be leaders in this field and to advocate for ethical guidelines for the provision of IMC. METHODS: A review of the current literature addressing ethical standards of IMC was undertaken, with particular attention to EM publications. Anecdotal evidence from the experiences of the authors and our international EM colleagues regarding ethical challenges encountered while providing IMC was also gathered. RESULTS: A literature review demonstrated no established guidelines informing the ethics of IMC. CONCLUSION: With increasing numbers of EPs involved in international EM and the emergence of this subspecialty within our profession, EPs should be the advocates for the establishment of ethical standards of international practice. Our literature review reveals a knowledge gap for standards of ethical IMC. Our specific aims are to identify the ethical issues germane to the practice of IMC through structured interviews with international providers and to establish a consensus statement of ethical guidelines for the provision of IMC by EPs through dialogs, meetings and conferences with international EM experts worldwide.

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ABSTRACT FINAL ID: OS48-F;

TITLE: Validation of an Early Warning System as a Tool for Triage

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Early Warning Systems (EWS) are used to facilitate and shorten the identification (in terms of time / severity) of critically ill patients in the Emergency Department, establish corrective measures and provide levels of care according to the final "score". These internationally validated tools are only occasionally used in our facility (Carlos Haya University Hospital). We chose the MEWS (Modified Early Warning System) as the best suited to our environment for its implementation. Our objective was to evaluate the usefulness of MEWS in our environment as a triage tool and predictor of severity in the critical care area. METHODS: We reviewed a sample of 240 randomly selected patients (providing they met the criteria for inclusion and exclusion) of a total population of 7,969 subjects who were transferred by the pre-hospital emergency service (EPES-061), during the years of 2008 and 2009, of the University Hospital Carlos Haya (Regional complex) in Malaga. It emphasises in the selection of patients who come through the hospital emergency service, that need to obtain pre-hospital data that are relevant in the study. It creates a retrospective descriptive study for main and complimentary variables which are analysed using the statistical package SPSS ®. RESULTS: After analyzing the different variables we have found great disparity in resources at the time of transfer, patient attention priority when in the ED and the initial location of the patient in the ED. However, despite the different approaches the final result depending on the MEWS is similar. A low MEWS score means Polyclinic attention, short stay in the emergency department and a good prognosis. A high MEWS score means observation attention, increasing the length of stay and a worsening prognosis. CONCLUSION: It seems a useful tool, which combined with outpatient and inpatient attention, provides and ensures appropriate levels of care stratified by risk.

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ABSTRACT FINAL ID: OS49-A;

TITLE: Meeting a Simple Clinical Target Results in a High Level of Patient Satisfaction With Their Pain Management

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The inadequate provision of analgesia is a widely recognized problem affecting emergency department (ED) patients. Our recent pilot study indicated that the provision of 'adequate analgesia', defined as a decrease in pain score to <4 and a decrease from the triage pain score of ≥2 (scale 0-10), was significantly associated with a high level of patient satisfaction with their pain management. We report on our definitive study that confirms the value of this clinical target. METHODS: We undertook a prospective cohort study in a large academic ED. Consecutive adult patients, with triage pain scores ≥4, were enrolled. Variables examined included demographics, presenting complaint, pain score every 30 minutes, nurse-initiated analgesia provision, analgesia administered, time to analgesia, specific communication regarding pain, and whether 'adequate analgesia' (as defined) was provided. The primary endpoint, determined by a blinded investigator 48 hours post-discharge, was the level of patient satisfaction with their pain management (6-point scale: very unsatisfied-very satisfied). Multivariate (logistic regression) analyses were undertaken. RESULTS: 476 patients were enrolled: mean age 43.6±17.2 years, 237 (49.8%) males. 190 (39.9%, 95%CI 35.5-44.5) patients were 'very satisfied' with their pain management and 207 (43.5%, 95%CI 39.0-48.1) patients were provided with 'adequate analgesia'. Three variables were significantly associated with being very satisfied: the provision of 'adequate analgesia' (OR 7.8, 95%CI 4.9-12.4), specific communication regarding pain (OR 2.3, 95%CI 1.3-4.1) and the administration of oral opioids (OR 2.0, 95%CI 1.1-3.4). Notably, the provision of nurse-initiated analgesia to 211 (44.3%) patients and the short time to analgesia (median 11.5 min) were non-significant variables. CONCLUSION: The 'adequate analgesia' target provides a highly valuable, clinically relevant and achievable endpoint for ED staff in the pursuit of best-practice pain management. It has the potential to dramatically change practice once systems are in place to ensure short times to analgesia.

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ABSTRACT FINAL ID: OS49-B;

TITLE: The Effect of Stylet Choice on the Success Rate of Intubation using the GlideScope Video Laryngoscope in the Emergency Department

ABSTRACT BODY:

Abstract Body: OBJECTIVE: To determine whether the using the GlideRite® rigid stylet as compared to a standard malleable stylet affects the success rate of intubation in emergency intubations. METHODS: This was a retrospective analysis of prospectively collected CQI data based on 1377 intubations performed in an academic emergency department over a three year period. Following each intubation the operator filled out a form which included the device that was used and which type of stylet was used. Intubation was considered successful if the initial device used was the same as the final device. Intubation was considered unsuccessful if the final device used was different from the initial device. Difficult airway predictors such as obesity, facial trauma, and aspiration were considered. Two types of stylets were compared: the GlideRite® rigid stylet produced by the GlideScope manufacturer and the standard malleable stylet. RESULTS: Over the three year study period the GlideScope was used for 368 intubations. When the GlideRite® rigid stylet was used, the operator was successful in 224 out of 244 cases (93.4%) whereas when the standard malleable stylet was used, the operator was successful in 76 out of 124 cases (61.3%) [p<.02]. For the GlideRite® stylet group the average number of difficult airway predictors was 2.1 and the average PGY year of the operator was 2.2 years. For the standard stylet group the average number of difficult airway predictors was 2.0 and the average PGY year of the operator was 2.2 years. CONCLUSION: When the GlideScope video laryngoscope was used for intubation, the success rate was much higher when the GlideRite® rigid stylet was used as compared to the standard malleable stylet.

AUTHORS/INSTITUTIONS: L.B. Kalin, J.C. Sakles, Department of Emergency Medicine, University of Arizona, Tucson, AZ;

ABSTRACT FINAL ID: OS49-C;

TITLE: Intravenous Sedation with Midazolam and Fentanyl Compared to Axillary Nerve Block in Reduction of Upper Limb Fractures: A Randomized Controlled Trial

ABSTRACT BODY:

Abstract Body: OBJECTIVE: This study aimed to compare pain scores after intravenous anaesthesia using a combination of midazolam and fentanyl, with axillary nerve block using lidocaine among patients with upper limb fractures. METHODS: In this study, 60 patients with distal forearm fractures, who had indication for reduction of fracture, were entered into a randomized clinical trial and were divided into two equal groups, one receiving the drugs (midazolam and fentanyl) and the other group received trans-arterial axillary nerve block. The pain scores were recorded using Visual Analogue Scale and the means of two groups were compared using t-student test by SPSS statistical program. RESULTS: Forty one patients (68%) were male and 19 (32%) were female. The drug group total operation times (40± 9 min) including analgesia and post recovery period was shorter compared to the axillary nerve block (45±9min) ($p<0.033$), but both methods provided equal pain relief before, immediately and after the final stage of the procedure. In contrast, compared to the drug group, the axillary nerve block group showed a longer rate of analgesia after the procedure. Moreover, the block group needed a shorter post procedure time ($p<0.001$). CONCLUSION: Our study indicates equal pain reduction in both groups but shorter procedure time (from the start of analgesia to the end of recovery) in the drug group. In comparison the post procedure time is shorter for axillary nerve block group. The block also provides a longer period of pain control compared to fentanyl and midazolam. This makes the choice of sedation method dependent on practitioner preference based on the emergency medicine department's priorities considering the time needed for operation or the post procedure time.

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ABSTRACT FINAL ID: OS49-D;

TITLE: Comparison of GlideScope Video Laryngoscope to CMAC Video Laryngoscope in Emergency Intubations

ABSTRACT BODY:

Abstract Body: OBJECTIVE: To compare the relative success rates of the GlideScope Video Laryngoscope (GVL) to the CMAC Video Laryngoscope for intubations in the emergency department. METHODS: The success rates of the two devices were retrospectively analyzed using a prospectively collected database of tracheal intubations in an academic emergency department through the use of continuous quality improvement (CQI) forms. Intubation was considered successful if the initial video laryngoscope and the final video laryngoscope were the same. Complications such as hypoxia, airway trauma, and aspiration were considered. Difficult airway predictors such as the presence of a c-collar, facial trauma, and obesity were also considered. All patients intubated over a three-year period using either the GlideScope or CMAC were analyzed. Data was analyzed using Fisher's exact and a p value of less than 0.05 was considered significant. RESULTS: GVL was used in 372 patients and was successful in 330 (88.7%, $p< .003$). CMAC was used in 139 patients and was successful in 135 (97.1%, $p<.003$). The complication rate for the GVL group was 0.3 and for the CMAC was 0.2 (p=ns). The GVL was used in patients with an average of 2.1 difficult airway predictors while the CMAC was used in patients with an average of 1.3 difficult airway predictors. The average PGY year was 2.2 years for the GVL group and 2.0 years for the CMAC group. CONCLUSION: The CMAC was found to be more successful for emergency intubations than the GVL however the GVL was preferentially used in cases with more difficult airway predictors. The average number of complications was similar in both groups.

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ABSTRACT FINAL ID: OS49-E;

TITLE: Procedural Sedation and Analgesia by Dutch Emergency Physicians: a Complication Registration

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Providing Procedural Sedation and Analgesia (PSA) in the Emergency Department (ED) is considered a safe and common procedure for emergency physicians. However, in many countries Emergency Medicine is still striving to become a fully recognized specialty. The skill of providing safe PSA at an ED still needs to be shown in such ED settings. We aimed to investigate the safety of PSA in a Dutch ED. METHODS: We registered data of 411 consecutively performed PSA's with either S-ketamine or propofol using a standardized registration form. Incidents were pre-specified. Physicians used a combination with an opioid or benzodiazepine of their choice. We included 75 children (1-15 years, mean 9.2 +/-3.4) and 336 adults (16-97 y 52.0 +/-20.8). RESULTS: 67% of the children received S-ketamine (mean 0.57 +/- 0.41 mg/kg) mostly in combination with midazolam. One pre-specified incident occurred: a hospital admission due to persisting nausea in a 7 year old boy. He was well the next morning. Of the adults 85% received propofol (mean 1.25 +/-0.65 mg/kg) mostly in combination with fentanyl. In 18 adults (5%) a pre-specified incident occurred (apnea, desaturation, hypotension or partial airway obstruction). All incidents were quickly resolved using oxygen, bag-mask ventilation or iv fluids. In adults all pre-specified events occurred in the propofol group. There was a trend toward more events with increasing level of sedation. No trends were seen for fasting time, age or ASA class (1-3). CONCLUSION: In 411 consecutively performed PSA's only minor incidents occurred, most could easily be resolved. PSA can be performed safely by Emergency Medicine physicians in a Dutch ED. A complication registration provides insight into incidents and used regimens.

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ABSTRACT FINAL ID: OS49-F;

TITLE: Effectiveness of Intravenous Propofol versus Dexamethasone for Pain Relief from Migraine Headache in the Emergency Department

ABSTRACT BODY:

Abstract Body: OBJECTIVE: There are many drugs recommended for pain relief in patients with migraine headache who present to the emergency department (ED). METHODS: In a prospective double blind randomized clinical trial, 90 patients presenting to the ED with a migraine headache were enrolled in two equal groups. We used intravenous propofol (10-20 mg every 5 minutes to a maximum of 80 mg, slowly) and intravenous dexamethasone (0.15 mg/kg, slowly), in group I and II, respectively. Pain explained by patients, based on VAS (Visual Analogue Scale), was recorded at presenting time and after injection. Data were analyzed by paired samples t test, using SPSS 16. P< 0.05 was considered to be statistically significant. RESULTS: The mean of reported pain (VAS) was 8±1.52 in the propofol group and 8.11±1.31 in the dexamethasone group at presentation (P> 0.05). The VAS in the propofol group was obviously decreased to 3.08±1.7, 1.87±1.28 and 1.44±1.63 after 10, 20 and 30 minutes of drug injection, respectively. The VAS in the dexamethasone group was 5.13±1.47, 3.73±1.81 and 3.06±2 after 10, 20 and 30 minutes of drug injection, respectively. The mean reported VAS in the propofol group was less than the dexamethasone group at the above mentioned times (P< 0.05). The reduction of headache in the propofol group, also, was faster than the dexamethasone group (P< 0.05). There were no adverse side effects due to administration of both drugs. CONCLUSION: Lower activity of GABAergic receptors is the likely pathophysiology in migraine. Because of high affinity to GABAergic receptors, propofol probably changes the cited condition by activating the receptors and pain is reduced as a result.

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ABSTRACT FINAL ID: OS49-G;

TITLE: Factors Affecting Patient and Clinician Satisfaction Following Procedural Sedation in Trauma Patients in the Emergency Department

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The purpose of our study was to evaluate the main factors affecting patient and clinician satisfaction levels of procedural sedation in trauma patients in the emergency department (ED) of a tertiary care teaching hospital. METHODS: This retrospective study was conducted in the ED between June 2009 – June 2010 period in all age groups. Detailed data concerning age, gender, fasting period, vital signs, maximum Ramsey Sedation Scale (RSS) score, sedative and narcotics, dosage and route of administration, adverse events, satisfaction levels, recovery times for trauma patients requiring PS were collected. Comparisons of RSS were made using the Mann-Whitney U and Kruskall-Wallis Rank Sum test. The categorical outcomes were compared with $\chi 2$ test. The average recovery time of the groups were analyzed with the t-test. RESULTS: A total of 166 eligible study patients presented to the ED. The mean age of patients was 21.8 ± 22.2 (10-90 years) and average duration of fasting was 4.78 ± 2.63 h. Patient demographics are shown in Table I. The scores for the satisfied group with the procedure were significantly higher than the unsatisfied patients group (median, IQR; 3.0, 2.0-4.0 versus 4.0, 3.0-4.5.0; p:0.019). The maximum RSS achieved high scores in applications of high levels of satisfaction reported by clinicians (median, IQR; 3.0, 2.0-3.5 versus 4.0, 3.0-4.0; p:0.009). The analysis of maximum RSS are shown in Table II. The patient and clinician satisfaction wasn't associated with gender (respectively, p:0.95, 0.77), age (respectively, p: 0.75, 0.29), route of administration (respectively, p: 0.97, 0.73), procedure (respectively, p: 0.16, 0.36), sedative drugs (respectively, p: 0.81, 0.42), narcotics (respectively, p: 0.06, 0.05) and recovery time (respectively, p: 0.09, 0.19). CONCLUSION: The most important factor affecting satisfaction level is the sedation depth in PS applications in trauma patients in the ED. The preferred sedative drugs, route of administration, the additional use of narcotic drugs and recovery period had no effect on levels of satisfaction.

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ABSTRACT FINAL ID: OS49-H;

TITLE: Decrease of Practice Variability in Procedural Sedation and Analgesia in Spanish Pediatric Emergency Departments (PEDs)

ABSTRACT BODY:

Abstract Body: OBJECTIVE: The aim of the study is to evaluate the impact of a Clinical Working Group and the spread of practical guidelines in the practice variability in procedural sedation and analgesia in Spanish PEDs in the last decade. METHODS: Comparative study of the paediatric emergency physicians' practice related to procedural sedation and analgesia in 2004 and 2010 in Spanish PEDs using an electronic questionnaire. RESULTS: In 2004, we received 72 questionnaires from 22 PEDs and 73 from 33 PEDs in 2010. In both years, all of the paediatric emergency physicians considered it necessary to use analgesia and sedation for procedures in the PED. The use of analgesia and sedation increased significantly between 2004 and 2010: lumbar puncture (66.7% vs 95.9%), lacerations (75% vs 93.2%), fractures reduction (65.3% vs 83.6%) and diagnostic tests (68.1% vs 87.7%). In 2004, 22.2% of the physicians had never used analgesia-sedation for procedures (vs 1.4% in 2010; p<0,01), 27.8% did not use topical anaesthesia in 2004 (vs 2.7% in 2010; p<0,01). In 2004, 13 physicians (18.1%) had applied Nitrous oxide (vs 53, 72.6% in 2010; p<0,01). In 2010, all the physicians, except for 3, should use analgesia-sedation for procedures (vs 16 in 2004), although the selected option varied among physicians. Of the 33 PEDs, 20 had analgesia-sedation protocols (vs 7/22 in 2004, p=0,03). CONCLUSIONS: The analgesia-sedation for procedures in Spanish PEDs has improved in the last years although some issues have to be improved.

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ABSTRACT FINAL ID: OS50-A;

TITLE: To Intubate or Not, That's the Question!

ABSTRACT BODY:

Abstract Body: OBJECTIVE: In the Netherlands, Amsterdam is the place with the most substance related incidents. Every year more than 550 patients with drug related problems are seen in the ED of the OLVG. Around 13% of these patients present with a loss of consciousness. The standard treatment that is advised by experts and medical books is to intubate all patients with CNS depression when drug abuse has lead to a GCS of 8 or lower. This treatment however is merely based on assumptions of the risk of aspiration; no study has been done on this subject so far. The main goal of our study was to answer the question if an observational policy, with close monitoring but without (prophylactic) intubation, for these patients is sufficient. METHODS: From January 2009 to March 2010 we conducted a cross-sectional study in the ED of the OLVG. All doctors included all patients who presented with a complaint related to recreational drug abuse within the last 24 hours. Patient characteristics, vital signs, degree of intoxication, complications, and type of drug(s) used were registered in a web-based database. Patients with only alcohol abuse were excluded. When there was doubt about the drug used and the patient had signs of a severe intoxication, a urine drugs screen was done. RESULTS: 550 patients were included of which 139 (25%) had a severe degree of intoxication or had "loss of consciousness" as a complication of drug abuse. In this group 37 patients had unconsciousness with a GCS of 8 or less on arrival (with 20 patients presenting with a GCS = 3). 22 out of 37 (60%) patients used at least GHB. Only 3 out of 37 (8%) patients eventually were intubated and ventilated. All three patients recovered without further adverse events. All non-intubated patient recovered within 4 hours and were sent home. No respiratory complications due to aspiration or other causes were seen in the non-intubated patient group. CONCLUSION: An observational policy with close monitoring but without (prophylactic) intubation is sufficient for patients with loss of consciousness (GCS 8 or lower) due to drug abuse, also when GHB is involved. Routine intubation is not necessary!

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ABSTRACT FINAL ID: OS50-C;

TITLE: The Future of PreHospital Analgesia: Methods or Medicines?

ABSTRACT BODY:

Abstract Body: OBJECTIVES: To assess the use of and providers' attitudes to analgesia in the Irish PreHospital Emergency Care Setting. To undertake a qualitative study of current practices in the Emergency Medical Service, elucidating first hand experiences of the efficacy of current Clinical Practice Guidelines. METHODS: A survey of prehospital emergency care providers was created with 9 questions, 2 of which allowed open responses. This was emailed to 436 prehospital EMS providers all over Ireland, from each of the National Ambulance Service areas. Open responses were evaluated using the framework approach; reading and arranging by recurring themes. RESULTS: The online survey received a 22% response rate. Of the 96 respondents, 69% were paramedics, 31% were advanced paramedics. 68% were based in the South & SouthEast, 24.5% Midlands, 2 from each of the other 3 NAS areas. Opening questions framed the research by illuminating prevailing circumstances in the Irish prehospital care setting. 41% dealt with pain weekly and 22% dealt with a patient in pain daily. 15% of responders said they transported a patient in pain more than once a day. Entonox (72%) was the most common, recently used analgesic, followed by Glyceryl TriNitrate (31%) and Morphine (29%). 20% were unsatisfied with clinical response. 70% said analgesics available to them were inadequate, and 98% answered 'Yes' to feeling potential exists for the introduction of intranasal or orally soluble analgesia in their practice. Respondents' open answers fell into areas such as; IV access obstacles, time taken, patient care and safety, limitations of current medications and guidelines, paediatric difficulties as well as suggesting new formulations and routes of administration. CONCLUSIONS: This survey is the first to describe the use of prehospital analgesia in Ireland. It identifies that a significant proportion of prehospital care providers desire innovations and new thinking in the area of analgesia available to them. Providers demonstrate a palpable desire to extend responsibilities to improve patient comfort, cooperation and care. There is significant potential for research and development in this area.

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ABSTRACT FINAL ID: OS50-E;

TITLE: Effectiveness of Propofol vs. Ketamine in Discharge State by Aldrete Score for Orthopedic Procedure in the Emergency Department

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Propofol which is categorized in the Total IV Anesthesia (TIVA) group is one of the newest anesthesia drugs. Due to its desirable pharmacological effects, this drug became popular in the last years. The aim of this study is to evaluate efficacy and safety of propofol in the emergency department after Procedure Sedation Analgesia (PSA). METHODS: 63 patients with dislocation or fracture of the upper or lower limbs were studied. All patients needed PSA for treatment and were randomly allocated into two groups. Propofol + fentanyl were used in 31 patients and ketamine + midazolam were used in 32 patients. We used Aldrete score ≥ 12 as criteria for discharge. Linear regression was used for statistical analysis. RESULTS: Demographic characteristics were the same in both groups. In the propofol + fentanyl group, the mean time for achieving an Aldrete score of 12 was 6.39 ± 5.94 minutes and in the ketamine + midazolam group was 26.16 ± 8.20 minutes. During this study there was no complication requiring intubation. CONCLUSION: Patients in the group treated with propofol + fentanyl reach an Aldrete score of 12 more rapidly and are discharged earlier. Plus, no significant complications were recorded for propofol + fentanyl. Therefore this combination is more appropriate for emergency procedures.

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ABSTRACT FINAL ID: OS50-F;

TITLE: Comparison of Success Rate in Radial, Ulnar and Median Nerve Block for Pain Management in Emergency Department with or without Ultrasonographic Guide

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Despite the growing interest in the use of ultrasound (US) imaging to guide performance of regional anesthetic procedures such as peripheral nerve blocks, controversy still exists as to whether US is superior to previously developed landmark techniques. So we aimed to comparison satisfaction of patients between classic and sonographic groups. METHODS: 90 patients with 23.3% (n=21) female and 76.7% (n=69) male that required nerve blocks in the emergency department were divided into two groups each containing 45 cases. Pain scores before and after the anesthetic procedure were determined. Mean decreases of pain scores for all subgroups were measured. RESULTS: There was a significant difference in mean decrease in pain intensity between the two groups, sonographic and landmark (P=0.000). Comparison of mean decreases in pain intensity between subgroups of sonographic with subgroups of landmark showed significant differences between ulnar groups (P=0.031) and median groups (P=0.002) with a higher mean decreases in pain intensity in ulnar and median subgroups of sonograghy. CONCLUSION: Our results suggest that sonography could be a better way to induce local anesthesia especially in ulnar and median nerves.

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ABSTRACT FINAL ID: OS50-G;

TITLE: Effectiveness and Side Effects of Entonox

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Entonox is a mix of nitrous oxide 50% and oxygen 50%. It has been used in our Emergency Department (ED) for more then ten years now for light injuries or medical care and we thought it necessary to verify its effectiveness and side effects. METHODS: 2-year prospective study.
Inclusion criteria: any patient for which Entonox is used.
Observable criteria: type of care, other painkillers used or not, side effects, if any, patient satisfaction.
RESULTS: 78 patients entered the study. Sex ratio: women 44%, men 56%. Average age: 17 years, median: 7, extremes at 2 and 91. 15% received an oral painkiller (ex.: acetaminophen), 43% received local anesthesia (lidocaine). Nb 5% of the patients were receiving chronic care painkillers. Results are listed in the tables below.
CONCLUSION: The study group is composed mostly of children. Tolerance is excellent in most cases. The rare side effects are minor and without any consequence and treatment was never interrupted. 91% of patients were fully satisfied. In conclusion, we strongly recommend the use of Entonox in minor traumatology, as it is safe and easy to use.

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ABSTRACT FINAL ID: OS50-H;

TITLE: A Mixture of Dexmedetomidine together with Propofol by TCI for Conscious Sedation during ESWL

ABSTRACT BODY:

Abstract Body: OBJECTIVE: Dexmedetomidine with fentanyl can be used safely and effectively for conscious sedation and analgesia during a minimal to mildly painful procedure such as ESWL. Nowadays TCI of dexmedetomidine cannot be used. We evaluated conscious sedation and analgesia with a mixture of dexmedetomidine and propofol given by a pharmacokinetic-based target controlled infusion (TCI) system in the same syringe compared with narcotic and midazolam for an ESWL procedure. METHODS: A retrospective, case series, comparative, open study of 251 patients from 1 Feb - 31 April 2011 allocated simultaneously by anesthesiologist experience service into two groups to receive either dexmedetomidine with propofol given by TCI to 125 patients or narcotics and midazolam to 126 patients for elective ESWL. Dexmedetomidine was mixed together with propofol (10 mg/ml) to a concentration of 2µg/ml given by Schnider model of TCI system with effective concentration ≤1µg/min for conscious sedation and fentanyl 1 µg/kg IV was given 10 min before TCI. Dosage was titrated until the patient met a required Ramsay Sedation Score of 2 – 3 and TCI was stopped 10 min before the end of procedure. Narcotics and midazolam was given as 1mg/kg of pethidine or fentanyl 1 µg/kg and small doses of midazolam 0.02 mg/kg IV 10 min before ESWL. All patients received O2 by cannula 10 l/min throughout the procedure. Pain intensity was evaluated with VAS. Sedation was determined using Ramsey scores. NIBP, ECG, SPO2 and respiratory rate were recorded regularly during ESWL as standard monitoring. RESULTS: 251 patients were evaluated. The percentage of mild to moderate pain and co-operative oriented, and tranquil was significantly higher in the TCI group as compared to the narcotics and midazolam group as shown in table 1 (82.0% vs.18.0%, $p < 0.05$). Other clinical variables were similar as table 2 ($p > 0.05$). CONCLUSION: A mixture of dexmedetomidine together with propofol (10 mg/ml) to 2 µg/ml given by Schnider model with the TCI system with effective concentration ≤ 1µg/min in combination with fentanyl IV can be used safely and effectively for conscious sedation and analgesia during ESWL.

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ABSTRACT FINAL ID: None

TITLE: An Ergonomics Approach to Redesigning an Emergency Medicine Physician's Workstation

ABSTRACT BODY:

Abstract Body: INTRODUCTION: An ergonomic evaluation of an emergency medicine physician's workstation/desk revealed that the working posture while performing documentation and reading/interpreting tasks is less than desirable, causing physical discomfort especially in the neck and the back. A work sampling study showed that emergency medicine physician spends most of the working time (28%) at the workstation/desk. Consequently, an ergonomics intervention is desirable to redesign the physician's workstation based on engineering anthropometry to deal with the working posture, physical discomfort and user dissatisfaction. DISCUSSION: An ergonomics workstation design should deal with adequate posture, work height, normal and maximum working areas, lateral clearance and visual requirements and provide workstation dimensions and layout. Adjustable chairs with proper seat/backrest and footrests (attached to the chair) should be provided so that the working height is about 2.5 cm below the elbow (height). The same criterion stated for desk height can be used to set elbow height. The reach requirements involved in the workplace layout should preferably be within the normal reach (eg., keyboard) and not exceed the maximum reach limit. For determining reach requirements, 5th percentile female anthropometric values are used. The minimum lateral clearances at waist level are determined by adding 5 cm on both sides or 10 cm to hip breadth. The thigh clearance is the minimum space required to accommodate the thighs between the desk bottom and the seat top. For determining the clearances, 95th percentile male anthropometric values are used. The centre of the video display should be positioned between -10° and -30° from the horizontal plane at eye level. It is desirable to locate or position the video display on top of the desk or preferably an adjustable arm (and not on the top of monitor (PC). The procedure or methodology for determining the workstation dimensions are presented.

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