P079

A retrospective cohort study of the impact of age and post-intubation hypotension threshold on mortality

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Introduction: Endotracheal intubation (EI) is frequently performed in the emergency department (ED). Although this procedure is generally life-saving, EI is also known to cause adverse effects, such as hemodynamic alterations. A systolic blood pressure <90 mmHg is the most commonly accepted definition of hypotension; however systolic blood pressure naturally increases with age. The National Trauma Triage Protocol now states that this threshold could be raised to 110 mmHg in older patients. **Objective**: to determine the impact of increasing the post-intubation hypotension (PIH) threshold to 110 mmHg on hospital length of stay and mortality in older patients. **Methods**: Design: A historical cohort of patients admitted in a level-1 trauma center ED between 06/2011 and 05/2016 was constituted. **Population**: Patients were included if pre-EI vital signs were available, their intubation was performed in the resuscitation room, were aged ≥65, if no surgical access was needed and if EI was performed in ≤3 attempts. **Measures**: All clinical data including vitals were prospectively recorded using the software ReaScribe. Main outcome was in-hospital mortality. **Analyses**: Univariate and multivariate analyses assessed the relation between PHI and outcomes. **Results**: A total of 181 patients were included. When using the 90-mmHg threshold, 92 patients suffered from PIH. Mean length of stay for these PIH patients was 18.9 days, compared to 12.0 days for non-hypotensive patients (P = 0.06). Mortality rate at 24 hours was 9.78% and 15.83% for PIH and non PIH patients, respectively (p = 0.2). The 110-mmHg threshold identified 33 additional PIH patients (n = 125) and their mean length of stay was 17.8 compared to 10.2 days for non PIH patients (P = 0.02). Mortality rate at 24 hours was 9.90% for PIH patients and 21.43% for non PIH patients (p = 0.02). **Conclusion**: PIH was associated with a significant increase in LOS when the PIH threshold is set at 110. Mortality rate is high in the intubated ED older patient and that increasing hypotension threshold for older patient seem to have no impact on patient mortality at 24 hours. Since our sample is limited, more research is needed to confirm these results.

Keywords: geriatric, hypotension, intubation

P080

What is the impact of post-intubation hypotension on mortality and in-hospital length of stay?

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Introduction: Hypotension is known to severely impact the prognosis of patients in need of acute care. Endotracheal intubation (EI) is a procedure that is often used in the emergency room for patients with severe conditions. Post-intubation hypotension (PHI) is a well-known adverse effect of EI, although the impact of PHI on mortality is still unclear. The objective of this study was therefore to evaluate the association between post-intubation hypotension (PIH) and in-hospital mortality rates and length of stay (LOS). **Methods**: Design: A historical cohort of patients admitted in a university-affiliated emergency department (ED) between 06/2011 and 05/2016 was constituted. **Population**: Patients aged ≥16 were included if pre-EI vital signs were available, if their intubation was performed in the resuscitation room, if no surgical access was needed and if EI was performed in ≤3 attempts. **Measures**: All clinical data including vitals were prospectively recorded using the software ReaScribe. Hypotension was defined as a systolic blood pressure ≤90 mmHg. The occurrence of PIH was assessed at 5, 15, 30 minutes and any time after intubation. Main outcomes were in-hospital mortality and hospital length of stay. **Analyses**: Univariate and multivariate analyses assessed the relation between PHI and outcomes. **Results**: A total of 497 patients were included in our analyses. Of these patients, 63 (12.7%) suffered from PIH at 5 minutes, 120 (24,1%) at 15 minutes, 168 (33,8%) at 30 minutes and 209 (42%) at any moment after intubation. Mortality rates were 42.9% (n = 27), 35.8% (n = 43), 33.9% (n = 57) and 30.6%(n = 64) for patients who presented PIH at the 4 time periods, respectively, while 26.74% patients died in the normotensive group. PIH at 5 (p = 0.006), 15 (p = 0.04) and 30 minutes (p = 0.05) was associated with a significant increase in overall post-intubation mortality. Mean LOS for patients who suffered from PIH was 16.7, 18.9, 17.3, 17.4 days compared to 19.5 (p = 0.22) days for the normotensive group. **Conclusion**: Early post-intubation hypotension at 5 minutes was strongly associated with an increased mortality. As for the in-hospital length of stay, PIH was not associated with an increased LOS. Our results show that PIH within 30 minutes of intubation is associated with an increased mortality rate and should therefore be aggressively treated or prevented.

Keywords: hypotension, intubation, mortality

P081

Distribution of take home naloxone in Edmonton zone emergency departments between January 2016 and December 2017

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Introduction: Morbidity and mortality from opioid overdoses continue to be a significant issue worldwide. In Alberta, there was a 40% increase in accidental opioid-related deaths from 2016 to 2017. In response to this crisis, Alberta Health Services has dramatically expanded access to Naloxone with a province-wide program for the distribution of take-home naloxone (THN) kits. Edmonton Zone ED's began dispensing these kits in 2016. The objectives of this study are to assess the trends in THN kit distribution from these sites in 2016 and 2017. **Methods**: The Edmonton Zone is a health region that comprises eleven tertiary, urban community and rural community ED's. THN kits in Edmonton Zone ED's were distributed through Pyxis, an automated medication dispensing and tracking system. Pyxis data for THN kits in 2016 and 2017 was extracted for each Edmonton Zone ED and the raw numbers and trends were examined. The National Ambulatory Care Reporting System database was also analyzed to determine the number of opioid related visits to Edmonton Zone ED's over that same time period. **Results**: A total of 686 THN kits in the Edmonton Zone were distributed over 2016 and 2017. The two tertiary centers distributed 502 kits, while the urban and rural community emergency departments collectively distributed 184 kits. Comparing 2016 (n = 245) to 2017 (n = 441), there was an 80% overall increase in the number of kits distributed, with tertiary center ED's dispensing 92% more kits, urban community ED's 51% more and rural ED's 63% more. Over the same time period, the number of opioid related visits increased in tertiary center ED's by 78%, in urban community sites by 26%, and in rural ED's by

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67%. Almost all ED's increased their THN kit distribution from year to year, though there was one urban community site that dispensed fewer kits in the second year of the program. **Conclusion**: Edmonton Zone ED's dispensed 686 THN kits over two calendar years. Almost every ED distributed more kits in 2017 than 2016, which likely reflects successful uptake of this harm reduction intervention by frontline ED staff. However, there is still evidence of some imbalance in THN kit allocation as the percent increase in kits distributed varied widely based on the type of ED. This data can be used to pinpoint areas in the Edmonton Zone where barriers to THN access may still exist and guide continued quality improvement interventions to increase distribution and education.

Keywords: take home naloxone, opioid, overdose

P082

Predictive ability of the quick Sepsis-related Organ Failure Assessment score among patients with infection transported by paramedics: a Bayesian analysis

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Introduction: The quick Sepsis-related Organ Failure Assessment (qSOFA) score was developed to provide clinicians with a quick assessment for patients with latent organ failure possibly consistent with sepsis at high-risk for mortality. With the clinical heterogeneity of patients presenting with sepsis, a Bayesian validation approach may provide a better understanding of its clinical utility. This study used a Bayesian analysis to assess the prediction of hospital mortality by the qSOFA score among patients with infection transported by paramedics. **Methods**: A one-year cohort of adult patients transported by paramedics in a large, provincial EMS system was linked to Emergency Department (ED) and hospital administrative databases, then restricted to those patients with an ED diagnosed infection. A Bayesian binomial regression model was constructed using Hamiltonian Markov-Chain Monte-Carlo sampling, normal priors for each parameter, the calculated score, age and sex as the predictors, and hospital mortality as the outcome. Discrimination was assessed using posterior predictions to calculate a "Bayesian" C statistic, and calibration was assessed with calibration plots of the observed and predicted probability distributions. The independent predictive ability of each measure was tested by including each component measure (respiratory rate, Glasgow Coma Scale, and systolic blood pressure) as continuous predictors in a second model. **Results**: A total of 9,920 patients with ED diagnosed infection were included. 264 (2.7%) patients were admitted directly to the ICU, and 955 (9.6%) patients died in-hospital. As independent predictors, the probability of mortality increased as each measure became more extreme, with the Glasgow Coma Scale predicting the greatest change in mortality risk from a high to low score; however, no dramatic change in the probability supporting a single decision threshold was seen for any measure. For the calculated score, the C statistic for predicting mortality was 0.728. The calibration curve had no overlap of predictions, with a probability of 0.5 (50% credible interval 0.47-0.53) for patients with a qSOFA score of 3. **Conclusion**: Although no single decision threshold was identified for each component measure, a calculated qSOFA score provides good prediction of mortality for patients with ED diagnosed infection. When validating clinical prediction scores, a Bayesian approach may be used to assess probabilities of interest for clinicians to support better clinical decision making. Character count 2494

Keywords: Bayesian analysis, prediction, sepsis

P083

Innovative use of AED by RNs and RTs during in-hospital cardiac arrest (Phase III)

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Introduction: In-hospital cardiac arrest (IHCA) most commonly occurs in non-monitored areas, where we observed a 10min delay before defibrillation (Phase I). Nurses (RNs) and respiratory therapists (RTs) cannot legally use Automated External Defibrillators (AEDs) during IHCA without a medical directive. We sought to evaluate IHCA outcomes following usual implementation (Phase II) vs. a Theory-Based educational program (Phase III) allowing RNs and RTs to use AEDs during IHCA. **Methods**: We completed a pragmatic before-after study of consecutive IHCA. We used ICD-10 codes to identify potentially eligible cases and included IHCA cases for which resuscitation was attempted. We obtained consensus on all data definitions before initiation of standardized-piloted data extraction by trained investigators. Phase I (Jan.2012-Aug.2013) consisted of baseline data. We implemented the AED medical directive in Phase II (Sept.2013-Aug.2016) using usual implementation strategies. In Phase III (Sept.2016-Dec.2017) we added an educational video informed by key constructs from a Theory of Planned Behavior survey. We report univariate comparisons of Utstein IHCA outcomes using 95% confidence intervals (CI). **Results**: There were 753 IHCA for which resuscitation was attempted with the following similar characteristics (Phase I n = 195; II n = 372; III n = 186): median age 68, 60.0% male, 79.3% witnessed, 29.7% non-monitored medical ward, 23.9% cardiac cause, 47.9% initial rhythm of pulseless electrical activity and 27.2% ventricular fibrillation/tachycardia (VF/VT). Comparing Phases I, II and III: an AED was used 0 times (0.0%), 21 times (5.6%), 15 times (8.1%); time to 1st rhythm analysis was 6min, 3min, 1min; and time to 1st shock was 10min, 10min and 7min. Comparing Phases I and III: time to 1st shock decreased by 3min (95%CI -7; 1), sustained ROSC increased from 29.7% to 33.3% (AD3.6%; 95%CI -10.8; 17.8), and survival to discharge increased from 24.6% to 25.8% (AD1.2%; 95%CI -7.5; 9.9). In the VF/VT subgroup, time to first shock decreased from 9 to 3 min (AD-6min; 95%CI -12; 0) and survival increased from 23.1% to 38.7% (AD15.6%; 95%CI -4.3; 35.4). **Conclusion**: The implementation of a medical directive allowing for AED use by RNs and RRTs successfully improved key outcomes for IHCA victims, particularly following the Theory-Based education video. The expansion of this project to other hospitals and health care professionals could significantly impact survival for VF/VT patients.

Keywords: automated external defibrillator, cardiac arrest

P084

The sky is not the limit! Protocol for a rapid systematic review on the use of drones in emergency medicine

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Introduction: Drones are already being used in medicine. They are employed to transport blood products and laboratory samples in rural and remote areas and they are increasingly being tested to deliver external defibrillators outside the hospital to patients with cardiac

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