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Door-to-antibiotics and mortality for emergency department patients presenting with septic shock

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Introduction: We examined our local sepsis patient population, and specifically our most vulnerable patients - those presenting to the emergency department (ED) in septic shock - for variables predictive of survival to hospital discharge. We applied the familiar ED paradigm of, "Door to," to calculate the impact of time to antibiotics against patient survival to hospital discharge. **Methods**: Retrospective chart review of patients aged > = 18 years, presenting to tertiary care ED between 01 Nov 2014 and 31 Oct 2015. Patients determined to have sepsis if A) > = 2 SIRS criteria and ED suspicion of infection (ED acquisition of blood/urine cultures or antibiotic administration) and/or B) received ED or Hospital discharge diagnosis of sepsis (ICD-10 diagnostic codes A4xx and R65). Patients sub-classified with septic shock if A) triage SBP < = 90mmHg, B) triage MAP < = 65mmHg or C) serum lactate > = 4mmol/L. "Door Time" was defined as the earliest time recorded for the patient encounter, either the time the patient registered in the Emergency Department, or the triage time. A generalized linear model was performed with a binomial distribution using survival to discharge as the response variable. Age, sex, ED arrival method, time to antibiotics, ED serum lactate and ED serum glucose level were the predictor variables. **Results**: 13506 patient encounters met inclusion criteria (10980 unique patients). Linear regression of time to antibiotics against survival to hospital discharge failed to achieve statistical significance. Linear regression of the secondary outcome variables achieved statistical significance for age and serum lactate level. Per the model, as age increased by 1 year, the odds of dying prior to hospital discharge increased by 3.8% and as serum lactate increased by 1 mmol/L, odds of dying prior to hospital discharge increased by 11.1%. **Conclusion**: We found no association between time to antibiotic treatment and mortality. Causal relationships require randomized controlled trials, and this analysis contributes to clinical equipoise.

Keywords: antibiotic, emergency department, sepsis

P004

Effect of telephone triage (811) calls on a regional poison centre

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Introduction: Telephone Triage Services (TTS) manage phone calls from the public regarding general medical problems and provide telephone advice. This telephone based care can overlap with care provided by Poison Centres. Our objective was to examine the impact of a provincial 811 TTS on the IWK Regional Poison Centre (RPC). **Methods**: This is a retrospective descriptive study using interrupted time series methodology. We compared monthly IWK RPC call volume in the pre-811 era (January 2007-July 2009) and the post-811 era (September 2009-December 2017). We summarized the characteristics of callers who accessed the IWK RPC in terms of client age, sex, intentionality, time of day, call disposition and outcome. Caller characteristics were compared between the pre- and post-811 eras using chi-square test for categorical variables. We used segmented regression analysis to evaluate changes in slope of call volume in the pre- and post 811 eras. The Durbin-Watson statistic

was performed to test for serial correlation and the Dickey-Fuller test to investigate seasonality. **Results**: The dataset included 82683 calls to the IWK RPC – 27028 pre-811 and 55655 post-811. Overall, 55% of calls were for female clients and the largest age group was children aged 0-5 years (37%). Most calls originated from home (47%), followed by a health care facility (23%). Most calls were managed at home (65%). Less than 3% of calls resulted in major effect or death. The Durbin Watson statistic was not statistically significant (p = 0.94). The Dickey-Fuller test indicated series stationarity (p = 0.001). There was no statistically significant change in call volume to the IWK RPC due to the introduction of 811 (p = 0.39). There was no significant variation by time of day, day of week or month, with most calls occurring in the evening. There were significantly more calls regarding intentional ingestions in the post-811 era (23% vs. 19% pre-811, p < .001). Outcomes in the pre and post 811 eras were as follows: minor/no effect/non-toxic/minimal 80% vs. 78%; moderate 7% vs. 10%; and, major/death 1.7% vs. 2.0%. **Conclusion**: The introduction of a TTS did not change call volumes at our RPC. The increase in the percentage of calls about intentional ingestions may reflect an increase in call acuity as the 811-TTS likely manages calls about minor/non-toxic ingestions without consulting with the RPC. Our future research will examine the nature of poison related calls to the 811-TTS.

Keywords: nurse triage, poison centre, telephone triage

P005

An opportunity to reduce morbidity in delayed postpartum hemorrhage: Multicentre analysis of tranexamic utilization in the emergency department

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Introduction: Postpartum hemorrhage (PPH) is a leading cause of maternal mortality and morbidity worldwide. Tranexamic acid (TXA) has been shown to be efficacious and safe in reducing mortality and morbidity if given within 3 hours of bleeding onset. Delayed PPH of more than 24 hours after delivery is a rare but high-risk ED presentation that requires timely management with TXA. This study aims to evaluate the patterns of TXA administration to treat delayed PPH in the ED using a retrospective review of medical reviews from 4 centres across a major urban Canadian city. **Methods**: We conducted a retrospective medical record review of patients presenting with PPH to 4 large urban EDs from 2013 to 2017; from 1.5 million ED visits, using a search for ICD-10 diagnostic codes of interest. Of these, the study cohort included only patients that were admitted to the hospital. Univariate analyses using Chi-squared tests and t-tests for non-continuous and continuous variables, respectively, were used to determine patient demographics and clinical characteristics significantly associated with TXA administration. **Results**: A total of 238 patients were included in the study cohort. Of these patients, 72.7% presented to the ED with mild hypovolemic shock, defined by a shock index score greater than 0.6. A total of 12.6% (95% CI 0.09-0.17) of patients were given TXA for PPH management in the ED. 67% (95% CI 0.47-0.82) of patients received the TXA within 3 hours of triage, whereas 33% (95% CI 0.18-0.53) received it after 3 hours, with the total mean time at 3.43 hours. 4.2% of patients required a blood transfusion and 2.9% required surgery. Univariate analyses indicated that greater maternal age (p = 0.028), lower hemoglobin levels (p = 0.014), higher shock index scores (p = 0.001), greater heart rate (p = < 0.001)), and use of oxytocin (p = <0.001) or blood products (p = < 0.001) in the ED were all significantly associated