maximum motor score on the Glasgow Coma Scale (GCS) (OR 1.5; 95% CI 1.4,1.6) had the greatest association with improved neurologic outcome. Longer duration of resuscitation was associate with worse outcomes (OR 0.84, 95% CI 0.82,0.87). The overall performance of our model was excellent with an area under the ROC curve of 0.89 and a Brier statistic of 0.13. **Conclusion:** Our model predicted good neurological outcome with a high rate of accuracy, however external validation of the model is required. This model may be useful in providing initial risk stratification of patients in clinical practice and future research on post-cardiac arrest care.

Keywords: out-of-hospital cardiac arrest, post-cardiac arrest, prognostication

LO17

Major adverse cardiac events in patients ruled-out by a validated high-sensitivity troponin algorithm for acute myocardial infarction

C. O'Rielly, BSc, J. Andruchow, MD, A. McRae, MD, MSc, PhD, University of Calgary, Calgary, AB

Introduction: Chest pain and symptoms of acute coronary syndrome are a leading cause of emergency department (ED) visits in Canada. Validated 2-hour high-sensitivity troponin algorithms can rapidly and accurately rule-in or rule-out myocardial infarction (MI) in most patients. The objective of this study was to quantify the incidence and timing of major adverse cardiac events (MACE: MI, death, or urgent revascularization) in the 30-days following the index ED encounter among patients who had MI ruled out using a 2-hour high-sensitivity troponin T (hs-cTnT) algorithm. We also sought to identify patient characteristics associated with very low risk of MACE. **Methods:** This was a secondary analysis of data prospectively collected from adult patients presenting with a primary complaint of chest pain or symptoms of ACS. This analysis focused on patients who had an MI ruled out using a validated 2-hour serial hs-cTnT diagnostic algorithm. Incidence of 30-day MACE was quantified. Sex-specific Kaplan-Meier curves were constructed to describe timing of MACE events after MI rule-out. Demographic and clinical variables of patients who did or did not have MACE were compared using simple bivariable analyses. **Results:** This analysis included 550 patients with serial 2h hs-cTnT testing. Of these, MI was ruled out in 344 (62.5% of patients), ruled in 67 (12.2%), and 139 (25.3%) had non-diagnostic hs-cTnT results. Among the 344 patients who had MI ruled out, 11 (3.2%) experienced a MACE in the 30 days following their index ED encounter. These included 10 (2.9%) unplanned revascularizations and 1 (0.3%) fatal MI. MACE occurred at a median of 5 days (range: 0-23 days) after the index ED encounter. Of the 11 patients experiencing MACE, 9 (81.8%) had a normal ECG at their index ED encounter. None of the 93 (27.0%) ruled-out patients under the age of 50 experienced a MACE in the follow-up period. Patients experiencing MACE were more likely to have a history of coronary disease and multiple vascular risk factors compared to those not experiencing MACE. **Conclusion:** The validated 2h hs-cTnT AMI algorithm ruled-out MI in a large proportion of patients. The 30-day MACE incidence after MI rule-out was 3%. Most MACE events were unplanned revascularizations. We determined that age < 50 was associated with event-free survival and may be of value in identifying patients who do not need additional cardiac testing after MI has been ruled out using high-sensitivity troponin testing.

Keywords: chest pain, high-sensitivity cardiac troponin, rapid rule-out algorithm

LO18

The state of the evidence for emergency medical services (EMS) care of prehospital hypoglycemia: an analysis of appraised research from the Prehospital Evidence-based Practice Program

J. Greene, BSc, J. Goldstein, PhD, R. Brown, MSc, J. Swain, BSc, D. Fidgen, BSc, Y. Leroux, MD, J. McVey, MD, J. Jensen, MSc, A. Carter, MD, Dalhousie University, Halifax, NS

Introduction: The Prehospital Evidence-based Practice (PEP) program is an online, freely accessible, continuously updated repository of appraised EMS research evidence. This report is an analysis of published evidence for EMS interventions used to assess and treat patients suffering from hypoglycemia. **Methods:** PubMed was systematically searched in June 2019. One author screened titles, abstracts and full-texts for relevance. Trained appraisers reviewed full text articles, scored each on a three-point Level of Evidence (LOE) scale (based on study design and quality) and three-point Direction of Evidence (DOE) scale (supportive, neutral, or opposing findings for each intervention's primary outcome), abstracted the primary outcome, setting and assigned an outcome category (patient or process). Second party appraisal was conducted for all included studies. The level and direction of each intervention was plotted in an evidence matrix, based on appraisals. **Results:** Twenty-nine studies were included and appraised for seven interventions: 5 drugs (Dextrose 50% (D50), Dextrose 10% (D10), glucagon, oral glucose and thiamine), one assessment tool (point-of-care (POC) glucose testing) and one call disposition (treat-and-release). The most frequently reported study primary outcomes were related to: clinical improvement (n = 15, 51.7%), feasibility/safety (n = 8, 27.6%), and diagnostics (n = 6, 20.7%). The majority of outcomes were patient focused (n = 18, 62.0%). **Conclusion:** EMS interventions for treating hypoglycemia are informed by high-quality supportive evidence. Both D50 and D10 are supported by high-quality evidence; suggesting D10 may be an effective alternative to the standard D50. "Treat-and-release" practices for hypoglycemia are supported by moderate-quality evidence for the patient related outcomes of relapse, patient preference and complications. This body of evidence is high-quality, patient-focused and conducted in the prehospital setting thus generalizable paramedic practice.

Keywords: emergency medical services, hypoglycaemia, prehospital

LO19

AED on the fly: A drone delivery feasibility study for rural and remote out-of-hospital cardiac arrest

I. Drennan, S. Cheskes, MD, P. Snobelen, M. Nolan, MA, T. Chan, PhD, S. McLeod, MSc, K. Dainty, PhD, C. Vaillancourt, MD, S. Brooks, MD, MSc, University of Toronto, Toronto, ON

Introduction: Time-to-treatment plays a pivotal role in survival from sudden cardiac arrest (SCA). Every minute delay in defibrillation results in a 7-10% reduction in survival. This is particularly problematic in rural and remote regions, where bystander and EMS response is often prolonged and automated external defibrillators (AED) are often not available. Our objective was to examine the feasibility of a novel AED drone delivery method for rural and remote SCA. A secondary objective was to compare times between AED drone delivery and ambulance response to various mock SCA resuscitations. **Methods:** We conducted 6 simulations in two different rural communities in southern Ontario. During phase 1 (4 simulations) a "mock" call was placed to 911 and a single AED drone and an ambulance were simultaneously dispatched from the same location to a pre-determined destination. Once on scene, trained first responders retrieved the AED

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