Introduction: Nova Scotia has a province wide reperfusion strategy for the treatment of patients presenting with acute ST-Elevation Myocardial Infarction (STEMI). Patients are referred for primary percutaneous coronary intervention (PPCI) if a first medical contact to device time can be achieved within 90 to 120 minutes; otherwise, fibrinolytic therapy is administered, as per guideline recommendations. Since 2011, Nova Scotian paramedics have been providing prehospital fibrinolysis (PHF) and prehospital catheterization (cath) lab activation for STEMI patients outside and within the PPCI catchment area, respectively. Patients who received fibrinolysis are transferred to a PCI facility if rescue PCI is required or if there are other indications for urgent intervention. This province wide approach is unique and the objective of this retrospective cohort study is to compare the impact of this approach on the primary outcome of 30-day mortality. **Methods:** For the study period, July 2011 to July 2013, STEMI patients who were diagnosed prehospital or in the ED who subsequently underwent reperfusion therapy were identified in the Emergency Health Services (EHS), Cardiovascular Information Systems (CVIS) and Cardiovascular Health Nova Scotia (CVHNS) databases. Baseline demographics and outcomes were then compared according to the treatment received: 1) PHF; 2) ED Fibrinolysis (EDF); 3) prehospital activated PPCI (EHS PPCI); and 4) ED activated PPCI (ED PPCI). **Results:** There were a total of 1107 STEMI patients identified during the study period, of whom 742 received lytic therapy (146 PHF; 596 EDF) and 332 underwent PPCI (202 EHS PPCI; 130 ED PPCI). Demographic variables were similar across the groups. The primary outcome of 30-day mortality was not significantly different across groups: 5 (3%) in PHF, 26 (4%) in EDF, 8 (4%) in EHS to PPCI and 2 (2%) in ED to PPCI. The number of rescue PCIs was 28 (19%) in PHF and 102 (17%) in EDF. Other outcomes (key timestamps) are pending. **Conclusion:** Our results show that the 30-day mortality was lowest for patients undergoing PPCI and slightly less for patients receiving pre-hospital fibrinolytic compared to those receiving ED fibrinolytic with no difference in the proportion requiring subsequent rescue PCI. The majority of patients in rural areas received EDF as opposed to PHF; pending results will show if this represents a delay in patient presentation after symptom onset.
Keywords: prehospital, fibrinolysis

LO027

Cervical spine injury in trauma patients 65 years and older immobilised in the prehospital setting

L. Lamy, MD, J. Chauny, MD, MSc, D. Ross, MD; Université de Montréal, Montréal, QC

Introduction: Following a protocol derived from the Canadian C-spine Rule (CCR), patients 65 years and older transported by ambulance after trauma require full spinal immobilisation. Immobilisation complicates the transport and the evaluation; potential side effects have been recognized. The aim of this study was to evaluate the effect of mechanism of trauma and age on the rate of cervical injury in a geriatric population. **Methods:** We conducted a retrospective observational study on patients 65 years and older transported by ambulance to a level-one trauma center from March 2008 to October 2013. The outcome was the rate of clinically important cervical spine injury (CICSI), defined as any fracture, dislocation or ligamentous injury needing treatment or specialised follow up. The rate was calculated in the geriatric population and in the subgroup of patients with minor trauma, defined as a fall from a standing height, a chair or a bed. We then looked at the rate of CICSI based on age to define a subgroup at lower risk of lesion. **Results:** We included 1221 patients with a mean age of 80 y.o. (SD = 8), 739 women (61%). CICSI was found in 53 patients (4.3%, 95% CI 3.2-5.4).

This is similar to the rate found in patients 65 years and older in the NEXUS population (4.6%) and the CCR population (6.0%). The mechanism of injury was a minor trauma for 716 patients (59%). Of those, 24 patients (3.4%, 95% CI 2.1-4.7) had CICSI. The rate increased after 85 y.o in both the overall population (3.4% vs 6.4%) and the minor trauma subgroup (2.6% vs 4.4%). **Conclusion:** The subgroup of patients 65-84 y.o. with a minor trauma had the lower rate of cervical spine injury (2.6%). In a lot of prehospital systems, those patients are not systematically immobilised for transport. It will be interesting to review the files of all patients with CICSI to identify any possible case that would have been missed without the age criteria.
Keywords: prehospital, immobilization, geriatrics

LO028

Prospective validation of an iOS app to evaluate tremor in patients with alcohol withdrawal syndrome

B. Borgundvaag, MD PhD, S.L. McLeod, MSc, T.E. Dear, BSc, S.M. Carver, BSc, N. Norouzi, MASc, BSc, S. Bromberg, BSc, M. Kahan, MD, S.H. Gray, MD, P. Arabi, PhD; Schwartz/Reisman Emergency Medicine Institute, Toronto, ON

Introduction: Ideal management of alcohol withdrawal syndrome (AWS) incorporates a symptom driven approach, whereby patients are regularly assessed using a standardized scoring system (Clinical Institute Withdrawal Assessment for Alcohol-Revised; CIWA-Ar) and treated according to severity. Among the domains assessed by the CIWA-Ar, tremor is the most objective indicator of withdrawal severity, however, the ability of clinicians to reliably quantify tremor is highly dependent on experience. The objective of this study was to prospectively validate an objective, reliable tool to standardize and quantify the severity of alcohol withdrawal tremor using the built-in accelerometer of an iOS application. **Methods:** A prospective observational study of patients ≥ 18 years presenting to an academic emergency department in alcohol withdrawal was conducted from Oct 2014 to Aug 2015. Assessments were videotaped by a research assistant and subsequently reviewed by 3 clinical experts, blinded to the primary clinical assessment. Tremor severity was scored using the 8-point CIWA scale (0 = no tremor, 7 = severe tremor). Accelerometer derived results were compared to expert assessments of each video. Inter-rater agreement was estimated using Cohen's kappa (k) statistic. **Results:** 76 patients with 78 tremor recordings were included. Accelerometer derived tremor scores matched exactly with expert assessor scores in 36 (46.2%) cases, within 1 point for 73 (93.6%) cases and differed by ≥ 2 points in 5 (6.4%) cases. The overall kappa for agreement within 1 point for tremor severity was 'very good' 0.92 (95% CI: 0.86, 0.99). **Conclusion:** iOS accelerometer based assessment of the tremor component of the CIWA-Ar score is reliable and has potential to more accurately assess the severity of patients in alcohol withdrawal. We anticipate this resource will be easily disseminated and will impact and improve the care of patients with alcohol withdrawal.
Keywords: alcohol withdrawal, validation, interrater agreement

LO029

Undetected serious medical illness in mental health patients seen in an academic emergency department

C. Poss, MD, C. Fernandes, MD, M. Columbus, PhD, K. Wood, MSc; Division of Emergency Medicine, Department of Medicine, Schulich School of Medicine & Dentistry, Western University, London, ON

Introduction: Mental health concerns make up 5-10% of all adult presentations to Canadian emergency departments (ED). One challenge