Methods: Transthoracic echocardiography was used to mark the location of the aortic root (traditional compressions), and the center of the left ventricle (LV) on animals (n=34) which were randomized to receive chest compressions in one of the two locations. Animals were hemorrhaged to MAP<20 to simulate traumatic PEA. After five minutes of PEA, basic life support (BLS) with mechanical CPR was initiated and performed for ten minutes followed by advanced life support (ALS) for an additional ten minutes. During BLS the area of maximal compression was verified using transesophageal echocardiography. Hemodynamic variables were averaged over the final two minutes of BLS and ALS periods. Differences in rates of survival were analyzed using Fisher's exact test. A two-way repeated measures analysis of variance was performed for the hemodynamic variables.

Results: Six of the left ventricle group (35%) achieved ROSC compared to eight of the aortic root group (47%) (p=0.73). There was an increase in aortic systolic blood pressure (p=0.01), right atrial systolic blood pressure (p<0.01) and right atrial diastolic blood pressure (p=0.02) at the end BLS; there were no differences in hemodynamics during ALS.

Conclusion: In our swine model of traumatic PEA, chest compressions performed directly over the left ventricle improved blood pressures during BLS, but not ROSC.

627 Patient Selection, Dosing Patterns, Safety, and Delayed Time to Effect of Intravenous Amiodarone in the Cardioversion of Atrial Fibrillation and Flutter in 13 United States Community Emergency Departments

Manvi R. Nagam[1], Garrett G. Thiel[2], Oliver Dutczak[2], Matthew D. Stevenson[3], E. Margaret. Warton[4], Mary E. Reed[4], Nelya Lugovskaya[2], Dustin W. Ballard[5], and David R. Vinson[5]

[1]*The CREST Network,* [2]*University of California, Davis,* [3]*Stanford University,* [4]*Kaiser Permanente Division of Research,* [5]*The Permanente Medical Group*

Background: IV amiodarone is recommended by the American Heart Association (AHA) for cardioversion of atrial fibrillation and flutter (AFF), while the European Society of Cardiology (ESC) restricts its use to those with structural heart disease; Canadian guidelines advise against its ED use altogether due to delayed cardioversion effects (at least 6-8h). Guidelines recommend an initial amiodarone bolus followed by a continuous infusion. Amiodarone use in U.S. EDs has not been described. We analyzed patient selection, consultations, dosing, direct-current cardioversion (DCC), and side-effects.

Methods: This retrospective cohort study included adults who received IV amiodarone for AFF cardioversion from 01/2009 to 06/2015 in 13 U.S. community EDs. We collected data by structured manual chart review on rhythm, symptom onset, heart failure (HF) prevalence, cardiology consultation, and the 1.5, 4, and 8h incidence of cardioversion. We describe DCC incidence at 8h, when amiodarone's cardioversion effects begin to appear. We defined bradycardia as heart rate <60 bpm and hypotension as two consecutive sBPs <100 mmHg within 4h of drug initiation. We used chi-square test for comparisons.

Results: Among 209 patients, mean age was 65.0 years and 103 were female; 168 had AF and 41 had AFL or both. Most (n=176; 84.2%) had recent-onset AFF, 35 (16.7%) had HF, and 141 (67.8%) had cardiology consultation. 52 bolus non-responders (25.1%) failed to begin an infusion by 8h; 38 amiodarone non-responders received DCC, 32 of these (15.3% of the cohort) before reaching 8h. Median time to DCC was 149 minutes (IQR 100-238). Amiodarone effectiveness at 1.5, 4, and 8h was 17.7%, 32.1%, and 42.6%, respectively. 1.5h effectiveness was lower than ibutilide and procainamide in the same practice setting (17.7% vs 44.0% for both) (p<0.001). Bradycardia was common (n=49; 23.4%), usually post-cardioversion, and often asymptomatic. Among 5 cases (2.4%) with hypotension, only 1 required treatment (with IV fluids).

Conclusion: Amiodarone use in the cardioversion of AFF in U.S. ED patients, most without HF, was contrary to ESC but aligned with AHA guidelines. Amiodarone was safe, but significantly less effective at 1.5h than ibutilide and procainamide, supporting the Canadian preference for more time-effective agents. Dosing irregularities were common, including incomplete dosing and premature DCC.

628 Is a Single High-Sensitive Troponin I Enough to Discharge a Low-Risk Chest Pain Patient?

Nikhil Tambe[1], Sonal Shah[2], Sameer Rathi[2], and Sanjay Mehta[2]

[1]*KokilabenDhirubhai Ambani Hospital,* [2]*Kokilaben Dhirubhai Ambani Hospital*

Background: High sensitive troponin I testing has found its way into the emergency department for safe disposition of the suspected acute coronary syndrome patients. There has been a controversy on use of a single high sensitive troponin I versus serial high sensitive troponin I for safe discharge of patients. Hence we carried out a study in low risk chest pain patients at a tertiary care centre, to compare utilisation of single high sensitive troponin I versus serial high sensitive troponin I towards 30 day major adverse cardiac event.

Methods: This was a prospective observational study of adult patients who presented to the emergency department over a period of 8 months (August 2016-March 2017) with haemodynamically stable chest pain and non- ST elevation acute coronary syndrome (NSTE-ACS). Patients in the study were surveyed by telephone 30 days after initial presentation for any major adverse cardiac event (MACE) including documented myocardial infarction, coronary angioplasty, coronary artery bypass graft or death. Highly sensitive troponin I ≤ 26 pg/ml was considered negative. 0 hour and 3 hour high sensitive troponin I was compared. Statistics was carried out using simple percentage and chi square test. P value less than 0.05 was considered as statistically significant.

Results: Out of 353 low risk chest pain patients studied; 319 underwent high sensitive troponin I testing, 265 (83%) underwent serial high sensitive troponin I testing (0 and 3 hours). The remaining 54 (17%) patients decided not to undergo second high sensitive troponin I (3 hour) after shared decision making. We found out that 24 (7.5%) and 15 (5.6%) had MACE in 0 hour and 3 hour high sensitive troponin value ≤ 26 (p=0.4). The negative predictive value of 0 hour and 3 hour high sensitive troponin I was 92.4% and 94.3% respectively.

Conclusion: Hence we conclude that the 3 hour high sensitive troponin I is comparable to 0 hour high sensitive troponin I in low risk chest pain patients. The ultra-sensitive nature of this test helps in earlier and safe disposition of this patient population.

629 Implementation of High-Sensitivity Cardiac Troponin: International Practices as a Brief for the United States

Bryn Mumma, Stacey Howell, Ezra Amsterdam, Javier Lopez, and Nam Tran

UC Davis

Background: High-sensitivity cardiac troponin (hs-cTn) was recently approved for use in the United States (US). Clinical implementation of hs-cTn presents challenges in sex-specific 99th percentiles, clinical protocols, and provider education. We sought to describe practices used in successful implementations of hs-cTn outside the US.

Methods: We conducted a cross-sectional survey of international physicians and laboratorians using hs-cTn in clinical operations and authored PubMed-indexed studies on hs-cTn. The survey assessed the following domains related to hs-cTn implementation: (1) leadership and education, (2) clinical protocols, and (3)