

mean eGFR was 82 mL/min/1.73 m<sup>2</sup>. In patients with a low (67%) hsTnT, the mean eGFR was 87 (SD=22). In the intermediate (31%) and high (2%) hsTnT groups, the mean eGFR was 72 (SD=21) and 73 (SD=31), respectively. We detected a statistically significant difference between the low and intermediate groups at a level of  $p < 0.0001$ , but not between the intermediate and high hsTnT groups. 27% of individuals with an eGFR  $\geq 60$  had an elevated hsTnT compared to 58% of those individuals with an eGFR  $< 60$  (Chi-square,  $p < 0.0001$ ).

**Conclusion:** Patients with intermediate and high hsTnTs were found to have significantly decreased eGFR. Further studies are needed to determine algorithms for the rapid rule out of myocardial infarction in patients with renal dysfunction.

#### 439 High-Sensitivity Troponin I: Two-Hour Evaluation for Acute Myocardial Infarction in the United States

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**Background:** High sensitivity cardiac troponin I (hs-cTnI) assays are being approved for use in the United States (US). Our objective was to determine the efficacy of a 2 hour acute myocardial infarction (AMI) rule-out/rule-in European derived hs-cTnI algorithm when applied to patients in the US when the second sample was drawn 2-3 hours later in the High Sensitivity Cardiac Troponin I in the US (HIGH-US) study.

**Methods:** Adults presenting with any suspicion for AMI were included. Patients with STEMI were excluded. Baseline and 2-3 hour plasma samples were analyzed in a core laboratory (University of Maryland) using the Siemens Atellica hs-cTnI assay (99th % 45.0 ng/L). AMI was independently adjudicated using all 30 day clinical materials available.

**Results:** 2505 patients were enrolled with 1916 having complete data for the 2-3 hour algorithm analyses. Subjects had a mean age of 56.7 ± 12.9 years and 1419 (56.5%) were males. Past medical history included hypertension in 1730 (69.1%), coronary artery disease, cardiac bypass surgery, percutaneous coronary interventions or AMI in 930 (37.1%) and diabetes in 739 (29.5%) while 83 (3.3%) were receiving renal dialysis. ECG abnormalities included ST depression ( $\geq 0.5$ ) or elevation ( $> 1.0$ ) in 231 (9.2%) or T wave inversions in 298 (11.9%). Patients with AMI (except on dialysis) had significantly more ( $p < 0.001$ ) of each of these characteristics but they were also commonly seen in those without AMI. 1066 (55.6%) were ruled-out with a NPV 99.8% and sensitivity 99.1% (95%CI: 99.3-99.9 and 96.8-99.8 respectively). Of these 612 (31.9%) had a baseline hs-cTnI  $< 3$  ng/L and 454 (23.7%) had a baseline hs-cTnI  $< 6$  ng/L and a 1 hour delta value  $< 3$  ng/L. 254 (13.3%) were ruled-in with a PPV 69.7% and specificity 95.5% (95%CI: 63.8 -75.0 and 94.4-96.3 respectively). Of these 199 (10.4%) had a baseline hs-cTnI  $\geq 120$  ng/L and 55 (2.9%) had a delta value  $\geq 12$  ng/L. The remaining 596 (31.1%) in the continue evaluation zone had an adjudicated AMI prevalence of 7.0% (95%CI 5.3-9.4).

**Conclusion:** The European utilized 2 hour rule-out/rule-in algorithm using hs-cTnI for AMI evaluation yields very similar results (very high NPV) when used in an all comers US population with many cardiac risk factors when the second blood draw is 2-3 hours later. Further studies are needed to improve the PPV and specificity of a 2-3 hour rule-in algorithm for AMI in the US ED population.

#### 440 The Management of Stable Ventricular Tachycardia Across 21 Community Emergency Departments

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**Background:** There is sparse research on the contemporary management of stable monomorphic ventricular tachycardia (VT). Which interventions are selected and how effective they are in the real-world setting is unknown. We describe the variation and effectiveness of stable VT management.

**Methods:** This interim analysis of a retrospective cohort study used structured manual chart review of all treated adults with ED presentations for prolonged ( $> 2$  min) monomorphic VT in 21 community EDs from 01/2010 through 12/2017 (we have reviewed to date 36% of the cohort). We defined monomorphic VT as a regular wide-complex tachycardia (WCT) with QRS  $> 120$  ms and rate  $> 120$  beats/min. We excluded unstable patients, that is, those with an abnormal level of consciousness, dyspnea at rest, severe anginal symptoms, or physician documentation of instability. We also excluded patients whose WCT was diagnosed as supraventricular. We report the incidence of treatments, successful termination (defined as sustained VT resolution of  $> 30$  min), ED cardiac arrest, and death.

**Results:** We analyzed 115 eligible ED presentations from 105 patients. Mean age was 68.6 years and 25.7% were female: 34 (32.4%) had an automated internal cardioverter defibrillator (AICD), 64 (61.0%) had congestive heart failure, and 30 (28.6%) were taking chronic antiarrhythmic medications. WCT was evaluated with adenosine in 14 (12.2%) cases. Initial VT treatments were amiodarone (n=60; 56.1%), external direct-current cardioversion [DCC] (n=25; 23.4%), lidocaine (n=9; 8.4%), firing of AICD (n=5; 4.7%), procainamide (n=3; 2.8%), and other treatments (n=5; 4.6%). Initial treatment success was as follows: amiodarone (41.7%), DCC (72.0%), lidocaine (44.4%), AICD (20.0%), procainamide (66.7%), and other treatments (16.7%). Overall, 74 presentations (69.2%) required multiple treatments. Six patients had cardiac arrest, 5 of whom were admitted to the ICU and one died in the ED. At the time of hospitalization, 10 presentations (8.7%) had continued stable VT.

**Conclusion:** ED physicians use a variety of treatments for stable monomorphic VT with differing rates of success. Amiodarone is the most common treatment, but may be less effective than DCC. Because initial treatments are often ineffective, most patients require multiple interventions. Opportunities exist for improvements in care.

#### 441 Impact of HEART Score-Based Pathway on Coronary Computed Tomography Angiography Utilization and Yield

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**Background:** Coronary computed tomography angiography (CCTA) accurately identifies coronary artery disease (CAD). However, its use in ED patients with acute chest pain (CP) is controversial. We instituted a HEART (history, ECG, age, risk factors, troponin) score-based protocol to reduce unnecessary advanced testing in ED patients with CP. We hypothesized that the new protocol would reduce the number of CTAs and increase the percentage of CCTAs demonstrating obstructive CAD.