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201 Effect of Gender, Race, and Ethnicity on Duration of Resuscitative Efforts Following Out-of-Hospital Cardiac Arrest

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Study Objective: The duration of unsuccessful resuscitation attempts in the emergency department (ED) following out-of-hospital cardiac arrest (OHCA) may be influenced by many factors. Factors known to be associated with a decreased likelihood of survival may influence providers to consider resuscitative efforts futile sooner, and may include: whether the arrest was witnessed, if bystander CPR was performed, duration of CPR in the pre-hospital setting, and the presence of a shockable rhythm. More subtle, and potentially sub-conscious factors may also influence the duration of unsuccessful resuscitation efforts, as well. We sought to determine if there is an association between patient race, ethnicity, or sex and the duration of unsuccessful resuscitative efforts performed in the emergency department following OHCA.

Methods: Retrospective cohort study with data from a prospectively collected internal quality database of all adult cardiac arrest encounters. All patients with OHCA without return of spontaneous circulation (ROSC) were included between June 2013 and May 2020. Patients were excluded if ROSC was documented for at least 20 minutes after CPR or if they survived to hospital admission. Also excluded were patients under 18 years old, incarcerated patients, patients who were transferred from other medical facilities, and patients whose family members decided to withdraw resuscitative measures. Our electronic health record was reviewed to identify self-identified race, ethnicity, and sex (assigned at birth). Descriptive statistics were provided as indicated. Ordinal regression was performed to evaluate the relationship between CPR duration and race, ethnicity, and sex, controlling for sex/race/ethnicity, age, cardiac rhythm, whether or not the arrest was witnessed, and if bystander CPR was performed.

Results: A total of 154 patients were included. Of these, 27.9% were female. 133 (86.4%) patients had ethnicity documented, of whom 16.5% were Hispanic. Of the 133 (86.4%) with race documented, 61.7% were Caucasian, 14.3% were Black, 3.8% were Asian, 1.5% were Native Hawaiian of Pacific Islander, while 18.8% were mixed/other. There was no association between sex and duration of CPR (female:male odds ratio (OR) 0.96 (95% CI 0.5-1.86) for longer duration of CPR attempt). There was no association between ethnicity and duration of CPR (Non-Hispanic ethnicity OR 1.13 (95% CI 0.48 - 2.64) for longer duration of CPR attempt). There was no association between reported race and duration of unsuccessful CPR attempt. Compared to Caucasian race identification, Native Hawaiian/Pacific Islander race had an OR of 0.2 (95% CI 0.01-3.65); Black race had an OR of 2.13 (95% CI 0.85-5.35); Asian race had an OR of 0.28 (95% CI 0.04-1.8); mixed/other race had an OR of 1.63 (95% CI 0.72-3.7).

Conclusion: After controlling for confounding variables, there were no systematic differences identified in the duration of resuscitative efforts in the emergency department following OHCA among the identified subgroups of sex, race, or ethnicity.

202 All Initial High Sensitivity Cardiac Troponin I Values Are Prognostic for 28 Day Survival in Coronavirus-19 Disease Patients

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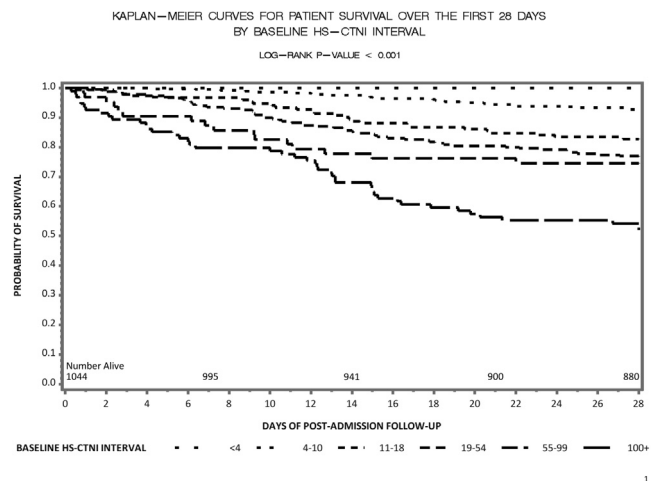
Study Objectives: Recent reports indicate that the presence of cardiac injury [troponin level > the 99th percentile upper reference limit (99th % URL) using mostly contemporary assays] is predictive of death within 30 days during hospitalization of coronavirus disease 2019 (COVID-19) patients. Troponin values ordered in the emergency department (ED) or after hospitalization were used for these analyses. Our objective was to determine the 28 day survival prognostic value of ED resulted high sensitivity cardiac troponin I (hs-cTnI) measurements in COVID-19 patients.

Methods: We established an ED centric electronic database of COVID-19 patients (nasopharyngeal swab testing within 1 week prior to or during the ED visit) having at least 1 hs-cTnI (Beckman Coulter, Brea, CA; level of quantitation (LoQ) 4ng/L, non sex specific 99th percentile URL 18 ng/L) value reported during a visit to an urban, academic ED in the United States. All patients, whether admitted and expired in the hospital or hospital discharged or sent home directly from the ED

were followed for 28 days to determine all-cause mortality. Kaplan Meir survival curves were constructed to compare outcomes amongst predetermined initial hs-cTnI value intervals.

Results: From March 16-November 2, 2020 1476 consecutive ED COVID-19 patients were identified with 1044 (70.7%) having at least 1 hs-cTnI value resulted in the ED. Patients' mean age and body mass index were 60.8 ± 16.1 years and 32.4 ± 11.3 kg/m² respectively. 531 (50.9%) were male, 804 (77.0%) self-identified as African American and 615 (58.9%) had 2 or more comorbidities with hypertension (42.5%), diabetes (37.4%) and hyperlipidemia (27.23%) commonest. Frequent primary presenting complaints were shortness of breath (37.7%), fever/chills (14.5%) and cough (11.9%). Hs-cTnI interval values were: 147 (14.1%) < 4 (LoQ), 359 (34.4%) 4-10 and 151 (14.5%) 11-18 ng/L. Hs-cTnI values were > 99th % URL in 387 (37.1%) patients with 230 (22.0%) 19-54, 63 (6.0%) 54-99 and 94 (9.0%) \geq 100 (laboratory reported critical value) ng/L. 145 (13.9%) patients were discharged directly home and 2 (0.2%) died in the ED. 147 (14.1%) were admitted to an ICU with 104 (70.7%) dying. Each of the interval initial ED hs-cTnI values was associated with a different ($p < 0.001$) 28 day survival curve (Figure).

Conclusions: Most COVID-19 patients had a hs-cTnI value obtained with 85.9% of these > 4 ng/L. No one with an initial hs-cTnI < 4 ng/L died within 28 days while increasing presenting hs-cTnI values > 4 ng/L were associated with decreased 28 day survival. Our findings indicate that in COVID-19 patients detectable initial ED hs-cTnI values, whether reaching thresholds for cardiac injury or not, are highly prognostic of 28 day survival. Studies are needed to better define how hs-cTnI values could alter early management of COVID-19 disease to improve outcomes for these patients.



203 An Ensemble Learning Approach to Predict Non-ST-Segment Elevation Myocardial Infarction in Patients With Clinical Concerns for Acute Coronary Syndrome

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Study Objective: To develop an ensemble learning classification model to predict non-ST-segment elevation myocardial infarction (NSTEMI) in patients presenting with clinical concerns for acute coronary syndrome (ACS).

Methods: This is a retrospective cohort of patients ≥ 18 years of age presenting to a large, urban emergency department (ED) with clinical concerns for ACS from January 2017 to August 2020. Patients diagnosed with ST-segment elevation myocardial infarction (STEMI) or those transferred from another facility were excluded. Patient outcomes were classified into three groups based on final diagnostic coding: NSTEMI, unstable angina (UA), and non-ACS etiologies. Incorporating 63 clinical patient variables present on initial testing in the ED, we applied feature engineering with Random Forest, an ensemble learning technique, to predict NSTEMI.

Results: A total of 31,228 patients were included. The mean age of patients is 59 years, with 53% being female and 74% being Black. NSTEMI was diagnosed in 431