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Spotlight on Special Topics

COMPARISON OF PROGNOSTIC SIGNIFICANCE OF TROPONIN I ELEVATION TO OTHER BIOMARKERS IN PATIENTS HOSPITALIZED WITH COVID 19 INFECTION

Poster Contributions

Monday, May 17, 2021, 9:45 a.m.-10:30 a.m.

Session Title: Spotlight on Special Topics: COVID 7

Abstract Category: 61. Spotlight on Special Topics: Coronavirus Disease (COVID-19)

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Background: Troponin I (TnI) elevation has been found to portend worse outcomes in patients with hospitalized with COVID-19 infection. We analyzed initial TnI level as a prognostic indicator compared to other biomarkers in a large cohort of patients admitted to 4 hospitals comprising the Mainline Health System (MLHS)

Methods: We identified 1424 adult patients, admitted to MLHS hospitals between 03/05/2020 and 05/31/2020 with COVID-19 infection. We compared outcomes of patients with initial abnormal TnI (≥ 0.05 ng/ml, defined as >99 th percentile upper reference limit) to patients with normal TnI levels using multivariable regression. Akaike information criterion (AIC) was used to compare Cox proportional hazard models of troponin I with other biomarkers. Smaller value AIC value indicates better model fit.

Results: At baseline, patients with initial abnormal TnI were older in age (median(IQR) 80y (70-88)vs 68y (56-81) $p < .0001$), likely male (32% vs 25%, $p = 0.016$), with higher prevalence of coronary artery disease (CAD) (4.4% vs 1.7% $p = 0.0014$). Of the 1424 patients, 1137 (80%) survived to discharge. In models adjusting for age, gender, BMI, history of CAD, diabetes mellitus, hypertension, heart failure, stroke, abnormal TnI was associated with 2.5 days longer hospitalization($p = 0.0015$), higher odds of ICU admission (Odds Ratio(OR) 2.5, 95% Confidence Interval(CI) 1.8-3.3 $p < 0.001$) and higher odds of death (OR 3.4, 95% CI 2.5-4.6 $p < 0.001$) compared to patients with normal troponin. Using AIC to compare multiple Cox proportional hazard models, TnI (3054) was a better predictor of death during hospitalization, than creatinine (3210) and hemoglobin (3209) but not C-reactive protein (CRP) (2819) or lactate (2859)

Conclusion: Abnormal TnI was associated worse outcomes in hospitalized COVID patients. However, CRP and lactate were better predictors of adverse outcomes than TnI, indicating systemic inflammation as the possible pathognomonic basis of worse outcomes.