Levels of hypersensitive troponin T in the emergency department as a predictive factor of mortality for hospitalized COVID-19 patients

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Background: Coronavirus disease 2019 (COVID-19) has resulted in considerable morbidity and mortality worldwide since December 2019. Cardiac complications are a common condition among patients with COVID-19. The association between elevated hypersensitivity troponin T in COVID-19 disease and risk of mortality remains unclear but data suggest it could be associated with higher risk of in-hospital mortality.

Purpose: The present study examine the potential association between the level of hypersensitive troponin T (Hs TnT) in emergency department (ED) and mortality among patients hospitalized with COVID-19.

Methods: Consecutive patients admitted in two hospitals from ED with confirmed PCR COVID-19 were included in this retrospective study. The data were collected from October 1, 2020 to December 31, 2020. The demographic characteristics (age and sex), clinical data (symptoms, comorbidities, laboratory findings, treatments, complications, and outcomes), and results of cardiac examinations (cardiac biomarkers and electrocardiogram) were collected in an electronic database. There data were analyzed and the mortality at 1 month was compared for patients with normal or elevated Hs TnT (>14 ng/L).

Results: The study population included 413 hospitalized patients with a confirmed PCR COVID-19. The median age was 82. The comorbidities like cardiovascular diseases, cerebrovascular diseases, pulmonary diseases and renal insufficiency are associated with a significant higher mortality (P < 0.05). Clinicals findings like tachypnea (respiratory rate >20/minute) or hypotension (<90 mmHg systolic blood pressure) also result an increased mortality (P < 0.05). In this cohort, 90 patients had an analysis of Hs TnT in the ED. The mortality at 1 month was higher in patients with elevated Hs TnT (>14 ng/L) compared to the patients with normal levels of Hs TnT and the correlation was significant (P < 0.05). The relative risk of fatal outcome is 3.86 when the troponin level is >14ng/L.

Conclusion: Elevated Hs TnT levels in the emergency department appear to be a predictive factor of mortality at one month for patients with COVID-19 infection requiring admission.