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Spotlight on Special Topics

CARDIOVASCULAR DISEASE AND OUTCOMES IN CRITICALLY ILL PATIENTS WITH COVID-19: A STOP-COVID ANCILLARY

Poster Contributions

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Background: Patients with pre-existing cardiovascular disease (CVD) and coronavirus disease (COVID-19) are perceived to be at higher risk of poor in-hospital outcomes. Multicenter data on the impact of CVD on COVID-19 related outcomes are lacking. We leveraged the multicenter Study of the Treatment and Outcomes in Critically Ill Patients with COVID-19 (STOP-COVID) to determine the prevalence of pre-existing CVD in critically ill patients with COVID-19 and assess its impact on in-hospital outcomes.

Methods: STOP-COVID is a multicenter prospective study that included adults (≥ 18 years) admitted to critical care units at 68 hospitals from 3/2020 to 6/2020 (n=5019). We identified patients with pre-existing coronary artery disease (CAD), heart failure (HF) and atrial fibrillation or flutter (AF) and collected clinical data on risk factors and troponin levels. Myocardial injury was defined as a troponin level above the upper limit of normal. We used binary logistic regression to examine the association between pre-existent CVD, myocardial injury and in-hospital death.

Results: 1149 patients (22.9%) had a history of CVD, including 13.5% with CAD, 10.2% with HF and 7.6% with AF. Compared to patients without CVD, those with were older (mean 69 vs 59 years, $P < 0.001$), had a higher burden of hypertension (84.9% vs 54.5%, $P < 0.001$), diabetes mellitus (55.6% vs 38.0%, $P < 0.001$) and higher incidence of myocardial injury on day 1 of admission (39.9% vs 20.8%, $P < 0.001$). Patients with CVD had significantly higher in-hospital mortality compared to those without (51.9% vs 37.4%, $P < 0.001$). However, after adjusting for age, gender and BMI, CVD was not associated with an increased risk of death (OR 1.16 95% CI [0.84-1.61], $P = 0.38$). Myocardial injury was associated with in-hospital death (OR 1.57 95% CI [1.39-1.81], $P < 0.001$) independently of clinical characteristics including pre-existing CVD. Incident AF occurred in 10.3% and new HF in 3.3% of patients without CVD.

Conclusion: Pre-existing CVD is not independently associated with in-hospital mortality in critically ill patients with COVID-19. Myocardial injury is however common and independently associated with death, likely reflecting the severity of COVID-19.