288 The effects of cardiovascular diseases and treatment on clinical course of hospitalized COVID-19 patients

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Aims: Significant concern has been raised about the effect of pre-existing cardiovascular diseases (CVD), cardiovascular (CV) risk factors and CV therapies on COVID-19 course. On the other hand, COVID-19 could worse pre-existing CVD or trigger the development of new-onset CVD. The aim of this study was to evaluate the relationship between pre-existing CVD, CV risk factors, and CV therapy with the clinical course of hospitalized COVID-19 patients.

Methods and results: Consecutive hospitalized COVID-19 patients admitted to the Cardiovascular COVID-19 Unit at Policlinico Umberto I of Rome between December 2020 and April 2021 were enrolled. All patients underwent a cardiovascular evaluation including troponin, electrocardiogram (ECG), and echocardiogram. Data on medical history, pre-existing CVD, CV risk factors, and therapy were collected. Admission to the Intensive Care Unit (ICU) or Cardiac Intensive Care Unit (CICU), as well as the development of new-onset CVD, were considered as endpoint of the study. Among $n = 229$ patients enrolled, 22 (10%) died. Nearly half of patients (112, 49%) were admitted to the ICU/CICU. The presence of prior ischaemic heart disease nearly doubled the probability of hospitalization in the ICU/CICU (HR: 2.09, 95% CI: 1.132-3.866, P 0.018). In regards of therapy, beta blockers reduced the likelihood of admission in the ICU/CICU (HR: −1016, 95% CI: 0.192-10.682, P 0.002). However, neither the use of RAAS blockers, heparin or dexamethasone influenced the risk of ICU/CICU admission (respectively, HR: 0.85, 95% CI: 0.498-1.450, P 0.551; HR: 0.768, 95% CI: 0.435-1.356, P 0.363; HR: 0.861, 95% CI: 0.453-1.635, P 0.647). $N = 89$ patients (39%) experienced a new onset CVD including arrythmias (18.3%) with nearly half experiencing atrial fibrillation, acute coronary syndrome (10.9%), acute pulmonary embolism (5.3%), heart failure (HF) (3%), and myocarditis and pericarditis (1.3%). A pre-existing diagnosis of HF substantially increased the likelihood of new onset CVD (HR: 2.380, 95% CI: 1.004-5.638, P 0.049). However, treatment with heparin or dexamethasone reduced the risk of new onset CVD (HR: 0.482 95% CI: 0.268-0.867, P 0.015; HR: 0.487, 95% CI: 0.253-0.937, P 0.031, respectively).

Conclusions: Our study found that hospitalized COVID-19 patients who have at least one CV risk factor or pre-existing CVD had a greater likelihood of being admitted to the ICU/CICU and experiencing new onset CVD.