Prognostic significance of cardiac injury in COVID-19 patients with and without coronary artery disease

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Objective: COVID-19 is a disease with high mortality, and risk factors for worse clinical outcome have not been well-defined yet. The aim of this study is to delineate the prognostic importance of presence of concomitant cardiac injury on admission in patients with COVID-19.

Methods: For this multi-center retrospective study, data of consecutive patients who were treated for COVID-19 between March 20 - April 20 2020 were collected. Clinical characteristics, laboratory findings and outcomes data were obtained from electronic medical records. In-hospital clinical outcome was compared between patients with and without cardiac injury.

Results: A total of 607 hospitalized patients with COVID-19 were included in the study; the median age was 62.5±14.3 years, and 334 (55%) were male. Cardiac injury was detected in 150 (24.7%) of patients included in the study. Mortality rate was higher in patients with cardiac injury (42% vs. 8%; $p<0.01$). The frequency of patients who required intensive care unit (ICU) (72% vs.19%), who developed acute kidney injury (AKI) (14% vs. 1%) and acute respiratory distress syndrome (ARDS) (71% vs. 18%) were also higher in patients with cardiac injury. In multivariate analysis, age, coronary artery disease (CAD), elevated CRP levels, and presence of cardiac injury (OR: 10.58, 95% CI: 2.42–46.27; $p<0.001$) were found to be independent predictors of mortality. In subgroup analysis, including patients free of history of CAD, presence of cardiac injury on admission also predicted mortality (OR: 2.52, 95% CI: 1.17–5.45; p=0.018).

Conclusion: Cardiac injury on admission is associated with worse clinical outcome and higher mortality risk in COVID-19 patients including patients free of previous CAD diagnosis.