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Spotlight on Special Topics

RISK PREDICTORS FOR MYOCARDIAL INJURY IN SEVERE COVID-19

Poster Contributions

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Authors: *Jorge H. P. Nascimento, Luiza V. Amaral, Carolina M. Cavalcanti, Andrea H. Neves, Rafael L. Costa, Luiz F. N. Simvoulidis, Liszt P. Oliveira, Eduardo C. F. Silva, Max R. F. Ramos, Glauca Maria Moraes De Oliveira, Hospital UNIMED-Rio, Rio de Janeiro, Brazil, Universidade Federal do Rio de Janeiro (UFRJ), Rio de Janeiro, Brazil*

Background: Myocardial injury (MI) is recognized as an indicator of worse clinical outcome in COVID-19; however, its incidence and risk predictors may vary according to the severity of the patients. This domain of knowledge is still under construction. The primary objective of this study is to describe the incidence of MI in patients hospitalized for severe COVID-19. Secondary objective was to evaluate possible risk predictors for the occurrence of MI.

Methods: This is a retrospective study, from March to July 2020, with patients hospitalized for severe COVID-19. The Shapiro-Wilk test was used to assess the sample distribution. The numerical variables were compared using the Mann-Whitney U test; the chi-square test was used for categories. Variables that are associated with MI at a significance level of $P < 0.05$ were included in the multiple linear regression model.

Results: 190 patients were evaluated (59.47% male, mean age 69.93 ± 14.73 years). The MI was present in 54.73% of the population, in which longer hospital stay was observed (25.13 ± 17.57 days x 15.90 ± 16.04 days; $p < 0.001$) and higher in-hospital mortality (52.88% x 13.95% ; $p < 0.001$). The occurrence of MI was statistically significant ($p < 0.05$) associated with age, length of stay, SAPS3 score, C-reactive protein value, systemic arterial hypertension (SAH), coronary atherosclerotic disease (CAD), glomerular filtration rate (GFR), moderate to severe acute respiratory distress syndrome (ARDS) and in-hospital mortality. Multiple linear regression analysis showed that age ($\beta = 0.153$; $T = 2.218$; $p = 0.028$), SAPS3 score ($\beta = 0.165$; $t = 2.244$; $p = 0.027$), C-reactive protein value ($\beta = 0.179$; $T = 2.640$; $p = 0.009$), SAH ($\beta = 0.130$; $T = 2.181$; $p = 0.030$), GFR ($\beta = -0.169$; $T = -2.598$; $p = 0.010$) and severe ARDS ($\beta = 0.296$; $T = 4.316$; $p < 0.001$) are predictors of MI. CAD and moderate ARDS had no statistical significance in the multiple linear regression model.

Conclusion: A high incidence of myocardial injury was observed in hospitalized patients with severe COVID-19, being associated with longer hospital stay and in-hospital mortality. In this study, the predictors of MI were age, SAPS3 score, C-reactive protein value, SAH, GFR and severe ARDS.