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Spotlight on Special Topics

PRE-EXISTING CARDIOVASCULAR DISEASE, ACUTE KIDNEY INJURY, AND CARDIOVASCULAR OUTCOMES IN HOSPITALIZED BLACKS WITH COVID-19 INFECTION

Poster Contributions

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Background: The Corona Virus 19 (COVID-19) infection is associated with worse outcomes in blacks, although the mechanisms are unclear. We sought to determine the significance of black race, pre-existing cardiovascular disease (pCVD), and acute kidney injury (AKI) on cardiopulmonary outcomes and in-hospital mortality of COVID-19 patients.

Methods: We conducted a retrospective cohort study of blacks with/without pCVD and with/without in-hospital AKI, hospitalized within Grady Memorial Hospital in Georgia between February and July 2020, who tested positive for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) on qualitative polymerase-chain-reaction assay. The primary outcome was a composite of in-hospital cardiac events. Multivariable binary logistic regression was used to assess the association in-hospital AKI as well as pCVD and outcome measures adjusting for covariates using backwards selection with 5% stay criteria. Fisher's exact test was used to assess the association between AKI, as well as myocardial injury, and all-cause mortality among the subset of patients with pCVD.

Results: Of the 293 patients hospitalized with COVID-19 in this study, 71 were excluded (for race/ethnicity other than black non-Hispanic). Of the 222 hospitalized COVID-19 patients included in our analyses, 41.4% were female, 78.8% had pCVD, and 30.6% developed AKI during the admission. In multivariable analyses, pCVD (OR 4.7, 95%CI 1.5-14.8, $p=0.008$) and AKI (OR 2.7, 95%CI 1.3-5.5, $p=0.006$) were associated with increased odds of in-hospital cardiac events. AKI was associated with increased odds of in-hospital mortality (OR 8.9, 95%CI 3.3-23.9, $p<0.0001$). The presence of AKI was associated with increased odds of ICU stay, mechanical ventilation, and acute respiratory distress syndrome (ARDS).

Conclusion: pCVD and AKI were associated with higher risk of in-hospital cardiac events, and AKI was associated with a higher risk of in-hospital mortality in blacks.