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Spotlight on Special Topics

PREDICTING COVID-19 INPATIENT MORTALITY AND MORBIDITY BY USING CARDIOVASCULAR RISK SCORES

Poster Contributions
Sunday, May 16, 2021, 12:15 p.m.-1:00 p.m.

Session Title: Spotlight on Special Topics: COVID 5
Abstract Category: 61. Spotlight on Special Topics: Coronavirus Disease (COVID-19)

Authors: *Eyad Ahmed, Kok Hoe Chan, Ruhma Ali, Aditya Patel, Chrystina Kiwan, Dilesha Kumanayaka, Paula Gonzalez, Jihad Slim, Addi Suleiman, Saint Michaels Medical Center, Newark, NJ, USA*

Background: Many studies have linked COVID-19 mortality to high risk of cardiovascular disease. We set out to determine which cardiovascular risk calculator will better predict these outcomes. We compared CHA_2DS_2-VASc (CVS), Atherosclerotic Cardiovascular Disease (ASCVD) and Framingham risk score (FRS) in predicting inpatient mortality or need for mechanical ventilation.

Methods: A retrospective hospital cohort study on patients ≥18-year-old with confirmed COVID-19 who were admitted to our hospital between 03/15/2020 and 05/25/2020. Demographics, clinical and laboratory data were reviewed and retrieved. Data was expressed as counts and percentages or mean. Logistic regression was used to identify the potential prognostic value of CVSc, ASCVD and FRS for need of mechanical ventilation (MV) and mortality prediction. GraphPad Prism was used for data analysis.

Results: Out of the 453-study population, 192 (57%) were female and 261 (42%) male; with an average age of 60. Hypertension was the most common comorbidity, followed by diabetes mellitus and chronic kidney disease. There were 69 (15.2%) patients who required MV and 108 (23.8%) patients expired.The detailed characteristics and outcomes are shown in (Table 1). When comparing CVSc, ASCVD and FRS in predicting inpatient mortality, high FRS was significantly associated with increased risk of mortality [Log-likehood ratio 4.344, p=0.0371, 95% confidence interval (CI) 0.4884-0.6746, area under the ROC curve (AUC) of 0.5815]. Similar to FRS, high ASCVD also significantly associated with increased risk of mortality [Log-likehood ratio 4.028, p=0.0447, 95% CI 0.4717-0.6640, AUC of 0.56780. CVSc was not statistically significant (Table 2). On the other hand, high CVSc was found to be significantly associated with the need for MV (Log-likelihood ratio 12.73, p=0.0004, 95% CI 0.5667-0.7038, AUC 0.6353). FRS and ASCVD were not statistically significant (Table 2).

Conclusion: This retrospective analysis highlighted the potential role of CVSc in predicting the need of MV as well as FRS and ASCVD in predicting the inpatient mortality. Larger prospective studies will be needed to corroborate this important finding.