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CLEARED SARS-COV-2 INFECTION IS ASSOCIATED WITH LOWER RISK PULMONARY EMBOLISM

Poster Contributions

For exact presentation time, refer to the online ACC.22 Program Planner at <https://www.abstractsonline.com/pp8/#!/10461>

Session Title: Vascular Medicine Flatboard Poster Selections: Venous and Thromboembolic Disease

Abstract Category: 53. Vascular Medicine: Venous and Thromboembolic Disease

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Background: SARS-CoV-2 has been associated with venous thromboembolism (VTE) during active infection. However, little is known about the relationship between patients who recover from COVID-19 and subsequent pulmonary embolism (PE). We hypothesized that this cohort is at increased risk of severe PE.

Methods: A retrospective analysis was performed on patients who presented to a quaternary care hospital from 1/1/2020-4/1/2021. Demographic data, baseline VTE risk factor information, and anti-SARS-CoV-2 antibody status were collected on all consults to the pulmonary embolism response team (PERT). Patients were categorized based upon anti-SARS-CoV-2 antibody (Ab+ or Ab-). Actively infected (PCR) or vaccinated patients were excluded from analysis. The primary outcome measure was PE severity. Secondary outcome measures included RV dysfunction (RVD), presence of hypotension or shock attributable to PE, and cardiac biomarkers.

Results: The PERT evaluated 323 patients, of whom 82 were excluded due to presence of active SARS-CoV-2 infection. Of the remaining 241 patients, 26 (10.8%) were Ab+ and 215 (89.2%) were Ab- at the time of admission. Of the 26 patients in the Ab+ group, 24 (92.3%) had index infections that were asymptomatic or mild. There were no significant differences between the Ab+ and Ab- groups in demographics or baseline VTE risk factors. While there was no significant difference between the groups in the presence of RVD or shock/hypotension, PE patients who were Ab+ had lower average peak NT-proBNP (1285.7 vs 4038.8) and troponin T (48.0 vs 161.3) (both $p < 0.005$) compared to patients who were Ab-. Being Ab+ was associated with a greater incidence of lower risk PE (low-risk: 46.2% vs 25.1%, $p = 0.023$; submassive PE: 42.3% vs 59.5%, $p = 0.093$), but no difference in massive PE (11.5% vs 14.9%, $p = 0.647$). On multivariate analysis, controlling for VTE risk factors, Ab+ was independently associated with low risk PE (OR 2.71 95% CI 1.12-6.67, $p = 0.03$).

Conclusion: In patients presenting with PE during the COVID-19 pandemic, about 10% were Ab+ and the majority had mild or asymptomatic index infections. Ab+ status was associated with less severe PE and was independently associated with low risk PE.