

## **Title:** Clinical Correlations and Imaging Characteristics of COVID-19-Associated Pulmonary Embolism

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**Background:** SARS-CoV-2 (COVID-19) has been associated with increased rates of venous thromboembolism (VTE). We evaluated patients with COVID-19-associated pulmonary embolism (CAPE) and non-COVID-19-associated pulmonary embolism (NCAPE) at a single academic hospital, comparing clinical characteristics and imaging findings.

**Methods:** 647 patients with PE were retrospectively identified between March 2020 and September 2022, of which 288 have been adjudicated thus far. Demographics, history, treatment, and outcomes were reviewed from date of presentation and up to 12 months from discharge. COVID positivity was defined as positive PCR testing at time of admission or within 30 days of hospital presentation.

**Results:** 45 patients had CAPE and 243 had NCAPE. Age (mean  $\pm$  SD,  $64.7 \pm 12.1$  vs  $67.9 \pm 16.1$  years), gender (42% vs 51% male), weight ( $95.9 \pm 34.8$  vs  $91.7 \pm 27.3$  kg), initial PESI score ( $109 \pm 38$  vs  $106 \pm 39$ ), and baseline number of comorbid cardiopulmonary conditions ( $2.56 \pm 1.45$  vs  $2.31 \pm 1.57$ ) were similar between the two populations. Numerically, history of prior DVT was higher in CAPE (15.6%) than in NCAPE (9.9%), with 3 of 7 CAPE patients with history of DVT/PE on anticoagulation (AC) at time of presentation. Both populations had similar baseline levels of platelet inhibitor use (24.4% vs 21.4%) and AC use (6.67% vs 7.82%). Patients with CAPE tended to have PEs located in the mainstems or segmental branches (33% and 26%), whereas NCAPE patients tended to have more centrally located lesions (23%, 29%, and 29% for saddle, main, and lobar, respectively). The ventricles were more often normal in size in CAPE patients (52% vs 28% and 76% vs 55% for right and left, respectively). 84.4% of CAPE patients were still living at the time of data collection compared to 76.5% of NCAPE patients. For patients who had follow-up quality of life (QOL) data at 6 months, fewer CAPE patients had returned to baseline (25% vs 49%). Recurrent VTE rates were similar in CAPE and NCAPE patients at 11.1%.

**Conclusions:** CAPE patients appear to have higher rates of peripheral PE and normal ventricular size compared to NCAPE patients. Recurrent VTE rates were similar in both groups, suggesting that the presence of DVT/PE portends an increased risk of subsequent PE regardless of transient risk factors. CAPE patients appear to have a slower return to baseline QOL.