

ABSTRACT

Background: Severe and critical COVID-19 are associated with a prothrombotic state, increasing the risk of venous thromboembolism, including pulmonary embolism (PE), which may contribute to increased short-term mortality. The Simplified Pulmonary Embolism Severity Index (sPESI) is a validated clinical tool used to predict 30-day mortality in PE patients, however its application in COVID-19 patients remained unexplored.

Aim: This study aims to investigate the relationship between the sPESI score and mortality within 14 days of hospitalization in patients with severe and critical COVID-19.

Method: A retrospective cohort study was conducted using medical records of severe and critical COVID-19 patients admitted to RSUP dr. Sardjito from May to October 2021. Bivariate analysis was used to identify candidate predictors, followed by multivariate logistic regression to assess the independent effect of sPESI and sex on mortality.

Result: A total of 275 patients were included; 83.3% had a high sPESI score (≥ 1), and 81.9% died within 14 days. High sPESI scores were significantly associated with increased mortality ($p < 0.001$; RR = 3.609, 95% CI: 1.782–7.309). In the multivariate model, only sPESI remained an independent predictor of mortality (OR = 3.676, 95% CI: 1.799–7.511, $p < 0.001$), while sex was not statistically significant ($p = 0.737$).

Conclusion: sPESI is significantly associated with 14-day mortality in severe and critical COVID-19 patients and may serve as a practical prognostic tool for early risk stratification and clinical decision-making.

Keywords: COVID-19, pulmonary embolism, mortality, sPESI