A systematic review and meta-analysis of four studies found the D-dimer test to be useful in ruling out pulmonary embolism, with a pooled diagnostic odds ratio of 4.15 (95% CI: 2.05 to 8.43). The review included studies on patients with suspected pulmonary embolism and with VTE symptoms. The studies used quantitative D-dimer tests, and the authors did not believe that this test may have less utility in older populations.
A comprehensive literature search was conducted on literature published through 11 December 2018 on an effort to find relevant articles on the diagnostic performance of V/Q SPECT in the diagnosis of acute PE. Three or more reviewers assessed the eligibility of each study. The QUADAS-2 tool was used to evaluate the quality of the included studies. The meta-analysis was conducted using RevMan Software (version 5.4) and was used to analyze the data. The pooled meta-analysis was estimated by the area under the receiver operating characteristic (ROC) curve of each study. The diagnostic performance of V/Q SPECT in the diagnosis of acute PE was assessed.

The pooled meta-analysis showed a high diagnostic accuracy of V/Q SPECT in the diagnosis of acute PE patients, with sensitivity, specificity, positive likelihood ratio, and negative likelihood ratio of 0.95 (95% CI: 0.94-0.96), 0.99 (95% CI: 0.98-1.00), 22.64 (95% CI: 10.74-50.98), and 0.04 (95% CI: 0.02-0.06), respectively.

The results suggested that V/Q SPECT is a promising imaging tool for the early diagnosis of acute PE, especially for patients with high sensitivity and high specificity. The pooled meta-analysis exhibited a high diagnostic accuracy with a limited number of studies.

The pooled meta-analysis and the forest plot showed that V/Q SPECT has a high diagnostic accuracy in the early diagnosis of acute PE. However, the results need to be interpreted cautiously due to the limited number of studies.