Prospective comparison of clinical prognostic scores in elderly patients with pulmonary embolism


Background: The Geneva Prognostic Score (GPS), the Pulmonary Embolism Severity Index (PESI), and its simplified version (sPESI) are well known clinical prognostic scores for pulmonary embolism (PE). Objectives: To compare the prognostic performance of these scores in elderly patients with PE. Patients/Methods: In a multicenter Swiss cohort of elderly patients with venous thromboembolism, we prospectively studied 449 patients aged ≥65 years with symptomatic PE. The outcome was 30-day overall mortality. We dichotomized patients as low- vs. higher-risk in all three scores using the following thresholds: GPS scores ≤2 vs. >2, PESI risk classes I-II vs. III-V, and sPESI scores 0 vs. ≥1. We compared 30-day mortality in low- vs. higher-risk patients and the areas under the receiver operating characteristic curve (ROC). Results: Overall, 3.8% of patients (17/449) died within 30 days. The GPS classified a greater proportion of patients as low risk (92% [413/449]) than the PESI (36.3% [163/449]) and the sPESI (39.6% [178/449]) (P<0.001 for each comparison). Low-risk patients based on the sPESI had a mortality of 0% (95% confidence interval [CI] 0-2.1%) compared to 0.6% (95% CI 0-3.4%) for low-risk patients based on the PESI and 3.4% (95% CI 1.9-5.6%) for low-risk patients based on the GPS. The areas under the ROC curves were 0.77 (95%CI 0.72-0.81), 0.76 (95% CI 0.72-0.80), and 0.71 (95% CI 0.66-0.75), respectively (P=0.47). Conclusions: In this cohort of elderly patients with PE, the GPS identified a higher proportion of patients as low-risk but the PESI and sPESI were more accurate in predicting mortality. © 2012 International Society on Thrombosis and Haemostasis.