PESI Score for Predicting Clinical Outcomes in Pulmonary Embolism Patients with Right Ventricular Involvement

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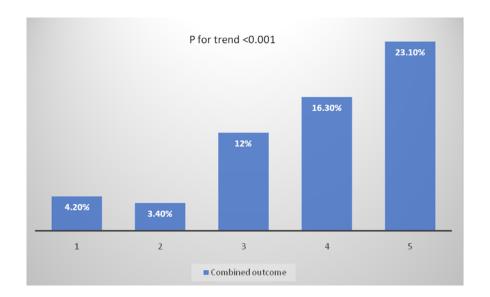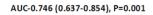
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Abstract

Background: Pulmonary embolism (PE) patients with right ventricular (RV) involvement are a heterogenous group who mandate further risk stratification. Our objective was to evaluate the efficacy of the PE severity index (PESI) for predicting adverse clinical outcomes among PE patients with RV involvement. Methods and Results: Consecutive normotensive PE patients with RV involvement were allocated according to admission PESI score (PESI <4 vs. PESI [?]4). The primary outcome included hemodynamic instability and in-hospital mortality. Secondary outcomes included each component of the primary outcome as well as mechanical ventilation, thrombolytic therapy, acute kidney injury, and major bleeding. Multivariable logistic regression model was performed to assess the independent association between the PESI score and primary outcome. C-Statistic was used to compare the PESI with the BOVA score. A total of 253 patients were evaluated: 95 (38%) with a PESI of [?]4. Of them, 82 (32%) patients were classified as intermediate-low risk and 171 (68%) as intermediate-high risk. Fifty (20%) patients had at least 1 adverse event. Multivariate analysis demonstrated the PESI to be an independent predictor for the primary outcome (HR 4.81, CI 95%, 1.15-20.09, P=0.031), which was increased with a concomitant increase of the PESI score (PESI 1:4.2%, PESI 2: 3.4%, PESI 3:12%, PESI 4: 16.3%, PESI 5:23.1%, P for trend <0.001). C-Statistic analysis for the PESI score yielded an AUC-0.746 (0.637-0.854), P=0.001, compared to the BOVA score: AUC-0.679 (0.584-0.775), P=0.011. Conclusion: PESI score was found to predict adverse outcomes among normotensive PE patients with RV involvement.

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P for trend <0.001

4.20%   3.40%   12%   16.30%   23.10%

1   2   3   4   5

■ Combined outcome

AUC-0.746 (0.637-0.854), P=0.001

ROC Curve

AUC-0.679 (0.584-0.775), P=0.011

ROC Curve