



## Prospective validation of the Pulmonary Embolism Severity Index. A clinical prognostic model for pulmonary embolism

Submitted by Emmanuel Lemoine on Tue, 12/16/2014 - 10:53

Titre	Prospective validation of the Pulmonary Embolism Severity Index. A clinical prognostic model for pulmonary embolism
Type de publication	Article de revue
Auteur	Donzé, Jacques [1], Le Gal, Grégoire [2], Fine, Michael J [3], Roy, Pierre-Marie [4], Sanchez, Olivier [5], Verschuren, Franck [6], Cornuz, Jacques [7], Meyer, Guy [8], Perrier, Arnaud [9], Righini, Marc [10], Aujesky, Drahomir [11]
Editeur	Schattauer
Type	Article scientifique dans une revue à comité de lecture
Année	2008
Langue	Anglais
Date	2008/11
Numéro	5
Pagination	943 - 948
Volume	100
Titre de la revue	Thrombosis and Haemostasis
ISSN	0340-6245
Résumé en anglais	<p>Practice guidelines recommend outpatient care for selected patients with non-massive pulmonary embolism (PE), but fail to specify how these low-risk patients should be identified. Using data from U.S. patients, we previously derived the Pulmonary Embolism Severity Index (PESI), a prediction rule that risk stratifies patients with PE. We sought to validate the PESI in a European patient cohort. We prospectively validated the PESI in patients with PE diagnosed at six emergency departments in three European countries. We used baseline data for the rule's 11 prognostic variables to stratify patients into five risk classes (I-V) of increasing probability of mortality. The outcome was overall mortality at 90 days after presentation. To assess the accuracy of the PESI to predict mortality, we estimated the sensitivity, specificity, and predictive values for low- (risk classes I/II) versus higher-risk patients (risk classes III-V), and the discriminatory power using the area under the receiver operating characteristic (ROC) curve. Among 357 patients with PE, overall mortality was 5.9%, ranging from 0% in class I to 17.9% in class V. The 186 (52%) low-risk patients had an overall mortality of 1.1% (95% confidence interval [CI]: 0.1-3.8%) compared to 11.1% (95% CI: 6.8-16.8%) in the 171 (48%) higher-risk patients. The PESI had a high sensitivity (91%, 95% CI: 71-97%) and a negative predictive value (99%, 95% CI: 96-100%) for predicting mortality. The area under the ROC curve was 0.78 (95% CI: 0.70-0.86). The PESI reliably identifies patients with PE who are at low risk of death and who are potential candidates for outpatient care. The PESI may help physicians make more rational decisions about hospitalization for patients with PE.</p>
URL de la notice	<a href="http://okina.univ-angers.fr/publications/ua6445">http://okina.univ-angers.fr/publications/ua6445</a> [12]

DOI 10.1160/TH08-05-0285 [13]  
Lien vers le document <http://dx.doi.org/10.1160/TH08-05-0285> [13]

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- [13] <http://dx.doi.org/10.1160/TH08-05-0285>

Publié sur *Okina* (<http://okina.univ-angers.fr>)