VALIDATION OF N-TERMINAL PRO-BRAIN NATRIURETIC PEPTIDE CUT-OFF VALUES FOR RISK STRATIFICATION OF PULMONARY EMBOLISM.

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ABSTRACT

The optimal N-terminal pro-brain natriuretic peptide (NT-proBNP) cut-off value for risk stratification of pulmonary embolism remains controversial. In this study we validated and compared different proposed NT-proBNP cut-off values in 688 normotensive patients with pulmonary embolism.During the first 30 days, 28 (4.1%) patients reached the primary outcome (pulmonary embolism-related death or complications) and 29 (4.2%) patients died. Receiver operating characteristic analysis yielded an area under the curve of 0.70 (0.60-0.80) for NT-proBNP. A cut-off value of 600 pg·mL-1 was associated with the best prognostic performance (sensitivity 86% and specificity 50%) and the highest odds ratio (6.04 (95% CI 2.07-17.59), p = 0.001) compared to the cut-off values of 1000, 500 or 300 pg·mL-1. Using multivariable logistic regression analysis, NT-proBNP ≥600 pg·mL-1 had a prognostic impact on top of that of the simplified Pulmonary Embolism Severity Index and right ventricular dysfunction on echocardiography (OR 4.27 (95% CI 1.22-15.01); p = 0.024, c-index 0.741). The use of a stepwise approach based on the simplified Pulmonary Embolism Severity Index, NT-proBNP ≥600 pg·mL-1 and echocardiography helped optimise risk assessment.Our findings confirm the prognostic value of NT-proBNP and suggest that a cut-off value of 600 pg·mL-1 is most appropriate for risk stratification of normotensive patients with pulmonary embolism. NT-proBNP should be used in

combination with a clinical score and an imaging procedure for detecting right ventricular dysfunction.