

CARDIAC BIOMARKERS FOR RISK STRATIFICATION IN NON MASSIVE PULMONARY EMBOLISM: A MULTICENTER PROSPECTIVE STUDY

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Introduction: Troponins (cTnI and cTnT), N-terminal pro-Brain Natriuretic Peptide (NT-proBNP), myoglobin, heart-type fatty acid-binding protein (H-FABP), and fibrin D-Dimer are emergent candidates for risk stratification in pulmonary embolism (PE). We compared the respective prognostic values of biomarker in patients with non-massive PE to predict an adverse outcome at 3 months.

Méthode: 146 consecutive patients with non-massive PE were included in this multicenter prospective study. The combined outcome consisted in need for intensive care monitoring on admission, death, or hospitalisation attributable either to PE-related complication (defined by PE/DVT relapse or major bleeding under anticoagulation) or to dyspnoea with or without chest pain during follow-up.

Résultats: The outcome was met in 12% of patients. In univariate analysis, NT-proBNP level above 300pg/ml was the strongest predictor of unfavourable outcome with an odds ratio of 15.8 (95%CI: 2.05-122). Odds ratios for the other variables were: 8.0 for D-dimer > 2000ng/ml (95%CI:1.1-64), 4.7 for H-FABP > 6ng/ml (95%CI:1.5-14.8), 3.5 for cTnI >0.09ng/ml (95%CI:1.2-9.7), 3.4 for myoglobin >70ng/ml (95%CI:0.9-12.2). ROC curve analysis indicated that NT-proBNP was the best predictor (AUC 0.84; 95%CI: 0.76-0.92; p<0.0001) with a negative predictive value of 100% (95%CI: 91-100) at 300 pg/ml. At that cut-off, the true negative rate for NT-proBNP was 40%. In multivariate analysis, NT-proBNP was the only significant independent predictor.

Conclusions: NT-proBNP appears to be a good risk stratification marker to identify low-risk patients with non-massive PE who could be treated in an outpatient setting.