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12-month outcome after cardiac surgery : prediction by troponin T in combination with the European system for cardiac operative risk evaluation

BACKGROUND: The prognostic value of troponin T for midterm outcome in cardiac surgery is insufficiently known. We aimed to assess the value of troponin T to predict 12-month outcome after cardiac surgery, as a single predictor and in combination with the European system for cardiac operative risk evaluation (EuroSCORE). METHODS: This cohort study included consecutive patients undergoing on-pump cardiac surgery between January 2005 and December 2006. We evaluated postoperative troponin T (TNT) on days 1 and 2 and the EuroSCORE as predictor variables. The primary composite endpoint was all-cause mortality or any major adverse cardiac event (MACE) at 12 months. Logistic regression was used to study the prognostic effect of TNT in a univariate analysis and after adjustment for EuroSCORE. The area under the receiver-operator curve (AUC) was calculated to report the discriminatory performance of the models. RESULTS: Seven hundred forty-one patients were available for analysis. Within 12 months after surgery, 92 (12.4%) patients had a MACE, 48 (6.5%) of whom died. A multivariate model of continuous TNT and the continuous logistic EuroSCORE showed a significant independent association between TNT and the composite endpoint (odds ratio [OR] 1.03, 95% confidence interval [CI] 1.02 to 1.04 per 0.1 microg/L increase in TNT). The AUC for the prediction of the composite endpoint of the model combining TNT and the EuroSCORE was 0.72; when based on EuroSCORE alone it was 0.64 (p <0.0001). CONCLUSIONS: Postoperative TNT increase (per 0.1 microg/L) is a strong independent predictor of 12-month outcome after on-pump cardiac surgery. Updating the preoperative EuroSCORE risk with postoperative TNT allows for better prediction of 12-month MACE and all-cause mortality.