

Category : **Outcome scores/prognostication**

A23 - The added value of high sensitive troponin T and creatine kinase- myocardial band on the predictive performance of EuroSCORE II for in-hospital mortality after elective coronary artery surgery.

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Introduction:

Myocardial injury after cardiac surgery is a risk factor for 30-day mortality. Cardiac biomarkers are routinely measured to quantify the severity of postoperative myocardial injury. Cardiac troponin (cTn) and creatine kinase-myocardial band (CK-MB) are established cardiac biomarkers. However, the prognostic value of both biomarkers for mortality after cardiac surgery is unclear.

Methods:

We conducted a retrospective single-center cohort study between 2018 and 2022 in patients undergoing elective coronary artery bypass graft surgery (CABG). Logistic regression models were used to analyze the European System for Cardiac Operative Risk Evaluation II (EuroSCORE II) with peak concentrations of cTnT and CK-MB. Predictive performance of these models for in-hospital mortality was evaluated with c-statistics and calibration plots. To demonstrate clinical application, the Net Reclassification Index (NRI) was calculated.

Results:

In 2,032 CABG patients the in-hospital mortality rate was 1.2% (N = 24). Postoperative cardiac biomarkers were higher in patients who died compared to survivors (1.04 ug/l [0.54-2.45] vs 0.51 ug/l [0.34-0.80] P < 0.001 for cTnT and 84.00 U/l [37.50-126.25] vs 33.00 U/l [26.00-43.00] P < 0.001 for CK-MB). Prediction models with cardiac biomarkers enhanced calibration in high-risk patients, compared to EuroSCORE II alone, and correctly reclassified 38% (cTnT) to 46% (CK-MB) of patients with in-hospital mortality as high risk. CK-MB showed better calibration and better discrimination for in-hospital mortality compared to cTnT (c-statistic 0.88 vs 0.86).

Conclusion:

Postoperative cardiac biomarkers add value to EuroSCORE II for the prediction of in- hospital mortality after elective CABG. Risk stratification of high-risk patients slightly favors a model with CK-MB over cTnT.