



Valvular Heart Disease

UTILITY OF CONVENTIONAL SURGICAL RISK SCORES IN PREDICTING OUTCOME AFTER TRANSCATHETER AORTIC VALVE REPLACEMENT

Poster Contributions

Poster Sessions, Expo North

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Background: Models to predict outcome after TAVI have not been designed or validated. The performance of surgical risk scores for TAVI has not been assessed. We aimed to examine the utility of the Society of Thoracic Surgeons (STS) risk score, logistic European System for Cardiac Risk Evaluation score (log EuroSCORE) and updated European System for Cardiac Risk Evaluation II score (EuroSCORE II) in predicting perioperative mortality (30 days) after TAVI.

Methods: In this multicenter-study, we included 450 consecutive patients who underwent TAVI (transfemoral: 63.8%, subclavian: 1.6%, transapical: 34.6%). Predicted and observed mortality were compared. Hosmer-Lemeshow goodness-of-fit test was performed and receiver operating characteristic curves (ROC) established to evaluate the performance of above risk scores.

Results: The predicted mortality rates calculated by the Log EuroSCORE, EuroSCORE II and STS-Score (21%, 8.6% and 7.5%, respectively) were significantly lower than the observed mortality (procedure 2.7%, 30 days 8.2%) regardless of risk score used. The goodness-of-fit test showed that the logistic EuroSCORE ($p=0.768$), EuroSCORE II ($p=0.529$) and STS ($p=0.671$) are, at best, acceptably calibrated for periprocedural mortality. Likewise, all three scores displayed, at best, acceptable discrimination characteristics per areas under the ROC: STS score 0.70 (95% CI 0.55 to 0.85); EuroSCORE II 0.65 (95% CI: 0.50 to 0.81); and logistic EuroSCORE 0.60 (95% CI: 0.45 to 0.76; $p > 0.05$).

Conclusions: Conventional surgical risk scores for aortic valve replacement overestimate observed mortality after TAVI. Surgical risk scores perform suboptimally in predicting outcomes after TAVI. This has important implications when choosing the appropriate intervention in patients with severe AS.