Predictive Power and Implication of EuroSCORE, EuroSCORE II and STS Score for Isolated Repeated Aortic Valve replacement

Holinski S, Jessen S, Neumann K, Konertz W

Objective
We evaluated the predictive power of the EuroSCORE, EuroSCORE II and Society of Thoracic Surgeons (STS) score for isolated redo aortic valve replacement.

Materials and Methods
78 consecutive patients underwent the aforementioned procedure mainly with a stentless valve prosthesis at our institution. Observed mortality was compared to the predicted mortality, Receiver Operating Characteristics (ROC) curves were calculated and the area under the curve (AUC) analyzed.

Result
Observed mortality was 11.5%. EuroSCORE and EuroScore II predicted a mortality of 28.2 ± 21.6% (p <0.001) and 10.2 ± 11.8% (p = 0.75), respectively. AUC of the EuroSCORE was 0.74 (95% CI: 0.62-0.83), p = 0.009 and of the EuroSCORE II 0.86 (95% CI: 0.76-0.93), p <0.0001. Optimal Youden index of the EuroSCORE II was 0.59 referring to a predicted mortality of 9.9% (sensitivity: 77.8% and specificity: 81.2%). Predicted mortality of STS score was 17.8 ± 10.6% (p = 0.08) and AUC was 0.64 (95% CI: 0.53-0.75), p = 0.06.

Conclusion
EuroSCORE II calculation was not only superior to EuroSCORE and STS score but led to a very realistic mortality prediction for this special procedure at our institution. A EuroSCORE II greater 10 should encourage to consider an alternative treatment.