What have we learned from risk scores when selecting patients for transcatheter aortic valve implantation?

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Introduction: Since performing our first transcatheter aortic valve implantation (TAVI) in 2011, we have made substantial progress in integrating this procedure into routine clinical practice. Nevertheless, identifying the most appropriate candidates for TAVI remains a complex clinical challenge. The use of validated risk scores, as recommended by the European Society of Cardiology (ESC), may aid in refining the selection process.[1] This study aimed to explore the relationship between pre-procedural risk scores and the incidence of mortality and major adverse cardiac events (MACE) following TAVI, with the goal of informing future patient selection strategies.

Patients ans Methods: We conducted a retrospective analysis of patients who underwent TAVI at our institution between September 2011 and July 2025. The following risk scores were evaluated: Charlson Comorbidity Index (CCI), EuroSCORE II, FRANCE-2, Katz Index, and Society of Thoracic Surgeons (STS) score. The Mann-Whitney U test was used to compare demographic variables and risk scores between survivors and non-survivors. Correlations between risk scores and outcomes (in-hospital and follow-up mortality, MACE) were assessed using MedCalc Statistical Software version 14.8.1.

Results: A total of 732 patients were included (median age: 80 years [IQR: 76−83]). Eighteen patients (2.47%) died during hospitalization, while 177 (24.2%) died during follow-up, most commonly due to heart failure (n = 39, 22.0%). After excluding cases with incomplete data, we found that follow-up mortality was significantly associated with CCI ($p < 0.0001$), EuroSCORE II ($p < 0.0001$), FRANCE-2 ($p < 0.0001$), Katz Index ($p < 0.0001$), and STS score ($p = 0.01$). The occurrence of MACE during follow-up was significantly associated with the STS score ($p = 0.01$).

Conclusion: Over more than a decade of performing TAVI procedures and following patients longitudinally, our center has gained valuable insights into patient selection and risk stratification. This study highlights the prognostic value of commonly used risk scores and underscores their potential to support clinical decision-making. As we continue to refine our approach, integrating objective risk assessments remains essential for improving long-term outcomes in patients undergoing TAVI.

LITERATURE ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

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