

# Can transcatheter aortic valve implantation risk stratification scores predict postprocedural permanent pacemaker implantation?

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**Introduction:** Permanent pacemaker implantation (PPI) is a frequent complication of transcatheter aortic valve implantation (TAVI), however no specific combination of predictive parameters (radiologic or electrocardiographic) has been established yet.<sup>1,2</sup> Various prediction scores are used in stratifying patients according to periprocedural risk of TAVR, however there is no data whether patients these scores are associated with an increased incidence of PPI. The aim of this study was to investigate the association between TAVI risk scores and PPI after TAVR.

**Patients and Methods:** We conducted a registry-based study on patients who underwent TAVI at Dubrava University Hospital from 2011 to 2024. We analyzed risk scores routinely calculated for TAVI candidates - Charlson comorbidity index (CCI), H2PEF, HARMS-AF, ACEF, France score, Euroscore II, Society of thoracic surgeons score (STS), Katz score. Patients who had a prior pacemaker were excluded.

**Results:** A total of 397 patients (mean age 80 years, 51% female) were included, 45 (11%) requiring PPI. There was no significant difference regarding basic demographic and cardiovascular risk factors between non-PPI and PPI group. PPI group had a significantly higher Charlson comorbidity score (7 vs 6 points,  $p=0.011$ ), H2PEF score (6 vs 5 points,  $p=0.037$ ) and STS (5.9 vs. 4.7%,  $p=0.031$ ) compared to the non-PPI group. There was no significant difference for the other scores. Cut-off points were defined for the scores with best predictive properties (CCI>7 points; H2PEF >4 points; STS >5.1%; AUC 0.6 for all). After logistic regression and evaluating CCI, H2PEF and STS synchronously as predictors for PPI, none of the scores remained significant.

**Conclusion:** Our data suggests that CCI, H2PEF and STS might aid in finding a prognostic tool. Further research is necessary to establish a score, most probably combining clinical and diagnostic findings, for adequate identification of patients at higher risk of PPI.

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## LITERATURE

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