

Transcatheter Versus Surgical Valve Repair in Patients With Severe Mitral Regurgitation

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Background

Transcatheter edge-to-edge mitral valve repair (TMVR) is increasingly performed. However, its efficacy in comparison with surgical MV treatment (SMV) is unknown.

Methods & Results

Consecutive patients with severe mitral regurgitation (MR) undergoing TMVR (68% functional, 32% degenerative) or SMV (9% functional, 91% degenerative; 23% MV replacement) were enrolled.

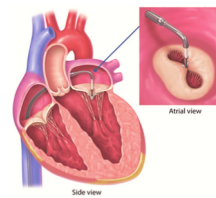
To account for differences in baseline characteristics, propensity score-matching, including age, EuroSCORE-II, left ventricular ejection fraction, and NT-proBNP, was performed.

A composite of heart failure (HF) hospitalization/death was the primary endpoint. Kaplan-Meier curves and Cox-regression analyses were used to investigate associations between baseline, imaging, and procedural parameters and outcome.

Between July 2017 and April 2020, 245 patients were enrolled, of which 102 patients could be adequately matched (73y/o, 61% females, EuroSCORE-II: 5.7%, $p>0.05$ for all). Despite matching, TMVR patients were sicker at baseline (higher rates of prior myocardial infarction, coronary revascularization, pacemakers/defibrillators, and diabetes mellitus, $p<0.009$ for all).

Patients were followed for 28.3 ± 27.2 months, during which 27 events (17 deaths, 10 HF hospitalizations) occurred. Postprocedural MR reduction (MR grade <2 : TMVR vs. SMV: 88% vs. 94%, $p=0.487$) and freedom from HF hospitalization/death (log-rank: $p=0.221$, **Figure 1**) were similar at two years.

By multivariable Cox analyses, EuroSCORE-II (adj.HR 1.07 [95%CI: 1.00-1.13], $p=0.027$) and postprocedural MR severity (adj.HR 1.85 [95%CI: 1.17-2.92], $p=0.009$) emerged as independent predictors of outcome.



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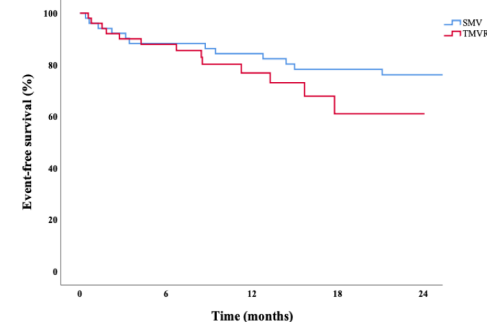
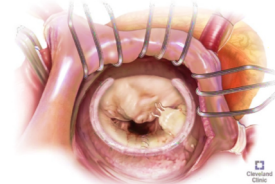


Figure 1. Kaplan-Meier estimators demonstrating differences in time to the primary composite endpoint (HF hospitalization/death) between surgical treatment (SMV) and transcatheter mitral valve repair (TMVR) in the matched study population (log-rank: $p=0.221$)



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Conclusions

In this propensity-matched all-comers cohort, 2-year outcomes after TMVR versus SMV were similar. Given the reported favorable long-term durability of TMVR, the interventional approach emerges as valuable alternative for a substantial number of patients with functional and degenerative MR.