

Transcatheter versus surgical valve repair in patients with severe mitral regurgitation

M. Koschutnik, V. Dannenberg, C. Dona, C. Nitsche, A.A. Kammerlander, B. Mora, A. Bartunek, D. Wiedemann, D. Zimpfer, M. Huelsmann, M. Schneider, P.E. Bartko, G. Goliasch, C. Hengstenberg, J. Mascherbauer

Medical University of Vienna AKH, Vienna, Austria

Funding Acknowledgement: Type of funding sources: None.

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: 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 defined as primary endpoint. Kaplan-Meier curves and Cox-regression analyses were used to investigate associations between baseline, imaging, and procedural parameters and outcome.

Results: 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: $p=0.221$) 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.

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 at high/prohibitive surgical risk.