Impact of gender on long-term prognosis after transcatheter edge-to-edge repair for mitral regurgitation

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Background: A symptomatic and prognostic benefit by Transcatheter edge-to-edge repair (TEER) for mitral regurgitation (MR) has been proven. A variety of individual factors including female sex has been suggested to be associated with adverse outcome in cardio-surgical procedures.

Purpose: While gender is factored in common risk factor models for adverse outcome, evidence on sex-specific differences in long-term outcome after TEER for MR is limited. We aimed to investigate the impact of gender on prognosis in a large monocentric cohort with long-term follow-up.

Methods: We analyzed survival stratified for gender after successful isolated edge-to-edge repair of MR in the period between 06/2010 and 03/2018 (exclusion of combined forms of TMVR) in a monocentric retrospective cohort by performing survival analyses and cox regression analyses.

Results: Consecutively, 627 patients (47.0% females, 57.4% functional MR; survival status was available in 96.7%) entered the study and were followed for a median follow-up period of 462 days [IQR 142–945 days]. Survival rates were 97.6% at discharge, 75.7% after 1, 54.5% after 3, 37.6% after 5 and 21.7% after 7 years. Risk score as calculated by the Logistic Euroscore I did not differ significantly between females and males (at baseline: 25.0 [IQR 18.0/34.8] vs. 27.0 [18.4/40.1]%, p=0.093) and no relevant differences were found for in-hospital (2.0 vs. 2.7%, p=0.613), 30 days (4.8 vs. 6.5%, p=0.473) and 1-year mortality (27.0 vs. 25.3%, p=0.675). At the time of procedure, women were older (79.9 [IQR 75.6/84.4] vs. 78.3 [72.9/83.4] years, p<0.001), were less often affected by coronary artery disease (53.1% vs. 75.0% p<0.001), diabetes mellitus (23.7% vs. 31.3%, p=0.040) and impaired left ventricular function (44.5±12.9% vs. 38.9±13.4%, p<0.001). Regarding long-term survival, women had a better prognosis after MR-therapy, especially in functional etiology: e.g., 4-year survival in FMR 65.7 vs. 35.7%, p=0.006 (Figure 1). Remarkably, female sex was associated with a lower risk for long-term mortality in the Cox-regression models, especially in the FMR subgroup (total cohort: univariate HR 0.81 [0.62–1.04], p=0.101; FMR: univariate HR 0.68 [0.49–0.96], p=0.028).

Conclusion: In our cohort of patients undergoing TEER for MR, we found no evidence for an impaired short- and mid-term prognosis for female patients. In contrary and not as indicated by Logistic Euroscore, female sex was associated with better long-term survival in comparison to men despite higher median age, which might be partly explained by a slightly more favorable cardiovascular risk profile.

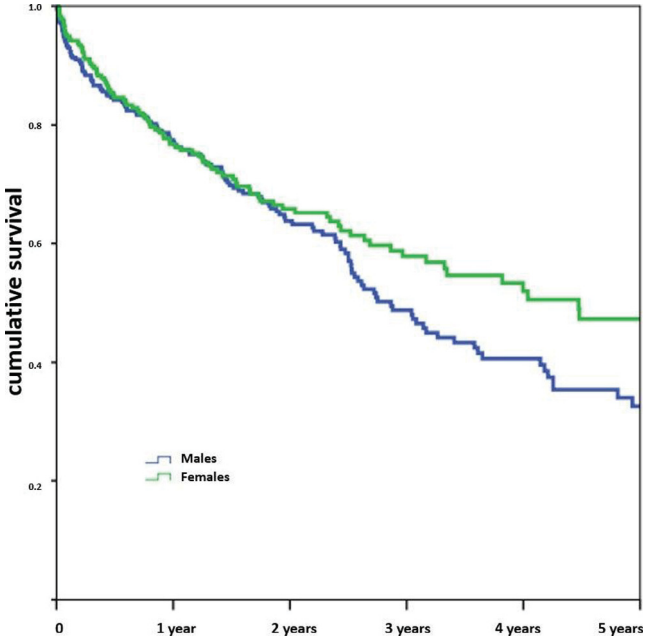

Figure 1