Clinical impact of mitral regurgitation before or following transcatheter aortic valve replacement in patients with aortic stenosis: a nationwide multivariable analysis

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Patients undergoing transcatheter aortic valve replacement (TAVR) may have concomitant mitral regurgitation (MR). The impact of MR at baseline or after TAVR on subsequent prognosis remains to be more precisely determined. We analysed the impact of MR before or after TAVR on prognosis in the systematic analysis of patients treated with TAVR at a nationwide level.

Methods. Based on the French administrative hospital-discharge database, the study collected information for all consecutive patients with aortic stenosis treated with transfemoral TAVR in France between 2008 and 2018. Cox regression was used for the analysis of predictors of events during follow-up.

Results. A total of 47,872 patients with transfemoral TAVR were included in the analysis (mean age 83±7 years). Moderate/severe MR was present at baseline (MRb) in 9.5% of the patients. Few patients (1.6%) revealed moderate/severe MR post-TAVR (MRpt). Mean follow-up was 1.31±1.61 years. MRb was associated with an increased cardiovascular mortality (Hazard ratio 1.29, 95%CI 1.20-1.39) and total mortality (Hazard ratio 1.15, 95%CI 1.10-1.21). However, MRb was not an independent predictor in multivariable analysis, neither for cardiovascular mortality (adjusted HR 1.06, 95%CI 0.98-1.14) nor for total mortality (adjusted HR 1.01, 95%CI 0.96-1.07). MRpt was not a predictor of cardiovascular or total mortality. Older age, male sex, history of pulmonary edema/cardiogenic shock, atrial fibrillation, myocardial infarction, diabetes, renal failure, liver disease, pulmonary disease, previous cancer and anemia at baseline independently predicted mortality during follow-up. All of them (but history of cancer) were also independent predictor of cardiovascular death.

Conclusion. Baseline MR was associated with increased cardiovascular and totality mortality following TAVR but was not an independent predictor of any of them. By contrast, several other predictors of cardiovascular and total mortality were identified. This suggests that MR should not be directly considered to establish the strategy for TAVR decision or for avoiding TAVR-related futility.