Cardiac Remodeling in Patients after TAVI: Left Ventricular Mass Regression and Survival

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Background: The influence of left ventricular mass regression on survival of patients with severe aortic stenosis after transcatheter aortic valve implantation (TAVI) is not known.
Methods: Echocardiography was performed at baseline, after one month, and at one-year follow-up in 58 consecutive patients with severe aortic stenosis who underwent TAVI. The LV mass was calculated using the Devereux formula and indexed to body surface area. Pairwise comparisons for repetitive measures with Bonferroni post-hoc adjustment of confidence intervals were used to test significance of LV mass regression on survival.
Results: Average age of patients was 80.6± 6.6 years. At the baseline, average peak aortic valve gradient was 75 ±20 mmHg, average mean 47 ± 12 mmHg. Overall mortality was 21%. The LV mass index decreased from 134 ± 6.1 g/m2 at baseline to 112 ± 6.3 g/m2after one month follow-up ($p < 0.001$) and 97±4.7 g/m2 after one year follow-up ($p < 0.0001$). Average LV mass reduction of 21 g/m2 after one month and 37 g/m2 after one year was significantly correlated with overall survival ($p=0.026$).
Conclusion: TAVI had positive effect on cardiac remodeling and LV regression was associated with better survival of patients with severe AS.