Is Mitral Regurgitation Reversible in Patients Undergoing TAVI?

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Background: Significant Mitral Regurgitation (MR) is often present in pts with severe aortic stenosis (AS) undergoing Transcatheter Aortic Valve Implantation (TAVI). Detection of MR in such pts is crucial as it can independently affect functional status and prognosis.
Aim: To define the short term effect of TAVI on MR severity.
Methods: Comprehensive echocardiographic studies were performed in all TAVI pts before procedure and before hospital discharge. MR was classified according to vena contracta (VC) and visual assessment as absent, mild, moderate or severe.
Results: In our department, 75 pts underwent TAVI since 2008. A balloon expandable valve was implanted (Edwards-Sapien- 69 pts, Medtronic-6pts); 59 by retrograde transfemoral, 15 by anterograde transapical and 1 by subcalvian approach. Aortic peak/mean gradient in pre and post TAVI were 87.1±26/49.8±18mmHg and 22.4±11 /12.4±7mmHg respectively ($p<0.0001$ for both). Mild aortic incompetence (AI) post TAVI was observed in 24(31%) pts, moderate in 16(20%) pts. No patient had severe AI. Severity of MR: visual assessment (see Table).

	Absent	Mild	Moderate	Severe
Pre TAVI	11 (15%)	16 (21%)	27 (36%)	21 (28%)
Post TAVI	19 (25%)	22 (29%)	21 (28%)	13 (17%)

Mean VC was 0.42±0.17cm before TAVI and 0.37±0.16cm after procedure ($p=0.005$).31(41%) of pts had coronary artery disease (CAD), 60(80%) had mitral annulus calcification (MAC) and 34(45%) had organic mitral valve disease (OMVD). No relation was found between presence of CAD, MAC or OMVD and improvement of MR degree or VC ($p>0.1$ for all). In 19 (25%) pts MR improved by 1 grade, 7 (9%) by 2 grades, no change in 38 (51%) and worsening in 9 (21%) pts.
Conclusions: Degree of MR improves post TAVI, regardless of etiology of MR and pathology of the mitral valve. Long term assessment of MR should be performed in order to confirm persistence of MR improvement.