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### **Improvement of Mitral Regurgitation After Trans-Catheter Aortic Valve Implantation**

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**Introduction:** Functional mitral regurgitation (MR) may be increased secondary to a high afterload. The regression of MR following the relief of aortic stenosis (AS) is uncertain. We examined the effect of trans-catheter aortic valve implantation (TAVI) in patients with significant functional MR.

**Methods:** Eighteen patients underwent TAVI in our department, in 8 there was significant (moderate or severe) MR. We compared their pre-procedure and post-procedure echocardiograms to identify any change in MR. The severity of mitral regurgitation was graded on a scale of 1-4.

**Results:** There were 4 males, and mean age was  $82 \pm 7$  years. The peak aortic gradient was  $80 \pm 19$  mmHg, and aortic valve area was  $0.5 \pm 0.07$  cm<sup>2</sup>. Mitral regurgitation improved by at least 1 degree in 6, and by 2 degrees in 4 patients. The pre and post-procedure values respectively were: mean MR grade  $3.2 \pm 0.5$  and  $2 \pm 1$  ( $p=0.01$ ); vena contracta  $0.6 \pm 0.3$  and  $0.3 \pm 0.2$  cm ( $p=0.03$ ); and jet area  $8.2 \pm 3.3$  and  $4.8 \pm 3.7$  cm<sup>2</sup> ( $p=0.07$ ). The tricuspid regurgitation gradient decreased from  $43 \pm 7$  to  $31 \pm 11$  mmHg ( $p=0.03$ ). We did not observe any reduction in LV dimensions or mitral annulus dimensions.

**Conclusions:** Significant early improvement in the severity of MR can be expected in patients with aortic stenosis and functional MR following TAVI. Long-term follow-up in a larger series of patients is needed to identify a clinical benefit.