

Aortic Paravalvular Regurgitation after TAVI is Associated with Worse Prognosis

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Background: Aortic stenosis (AS) is increasing in incidence with the aging of the population. Transcatheter Aortic Valve Implantation (TAVI) provides a therapeutic option for patients with severe AS who are high risk surgical candidates. A large proportion of patients undergoing TAVI have at least mild aortic paravalvular regurgitation (APR) following the procedure.

Objective: The purpose of this study was to determine the clinical and prognostic significance of paravalvular regurgitation seen early after TAVI.

Methods: Forty five patients who underwent TAVI (Corevalve) at our center from 9.2008 to 11.2010 were reviewed retrospectively. Echocardiography before the procedure and following the procedure but prior to discharge were reviewed. Aortic regurgitation and mitral regurgitation were defined using semi quantitative methods.

Results: Among forty five patients who underwent TAVI thirteen patients (29%) had moderate or moderate-to-severe APR. Thirty two patients (71%) had nonsignificant APR (12 trace, 14-mild and 6-mild-to-moderate AR). One-year mortality rate was higher in the group with significant APR 23% (n=5) compared to 16% (n=3) in the other group. The frequency of development of heart block that required early pacemaker implantation was also higher in the greater APR group 61% (n=8) versus 34% (n=11). The worsening of MR was more prominent in the significant APR group-46% (n=6) compared to the 21% (n=7) in the nonsignificant APR group. It was the same trend for worsening of pulmonary hypertension - 46% (n=6) versus 3% (n=1) respectively.

Conclusions: Significant APR after TAVI is associated with higher rates of heart block and need for pacemaker implantation, worsening of mitral regurgitation, pulmonary hypertension and one-year mortality. Avoiding significant post procedural APR may be important beyond the often minimal hemodynamic effects for the prognosis of patients following TAVI. Further prospective studies are warranted in order to confirm our results.