



## Valvular Heart Disease

### COMPARISON OF THE HEMODYNAMIC PERFORMANCE AND MID-TERM OUTCOME OF PER-CUTANEOUS VERSUS SURGICAL STENTLESS BIOPROSTHESES FOR AORTIC STENOSIS WITH ANTICIPATED PATIENT PROSTHESIS MISMATCH

Poster Contributions

Poster Sessions, Expo North

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**Background:** To compare the hemodynamic performance and mid-term survival of trans-cutaneous aortic valve implantation (TAVI) to that of surgically implanted stentless aortic valve replacement (SAVR) for the treatment of severe aortic stenosis in patients anticipated to have significant patient prosthesis mismatch (PPM).

**Methods:** A single center retrospective analysis of 86 and 49 consecutive TAVI and SAVR patients implanted from January 2009 to December 2011. Inclusion criteria were severe aortic stenosis and calculated minimal effective orifice area ( $\text{minEOA} = \text{BSA} \times 0.85$ ) larger than the best projected EOA based on the reference values in any type of bioprosthesis available. Echo data were obtained before the intervention, at discharge, and at 3-month follow-up. Unadjusted and adjusted Cox hazard analyses were performed, and 2 propensity-matched subgroups ( $n=28$  in each) were compared to assess the impact of TAVI vs. SAVR on outcome.

**Results:** Peak and mean trans-prosthetic gradient at discharge were lower ( $p < 0.001$  and  $p = 0.0002$  respectively) in the TAVI group ( $16.3 \pm 6.7$  and  $9.1 \pm 3.61$  mmHg) compared with the SAVR ( $23.9 \pm 9.1$  and  $12.5 \pm 4.8$  mmHg). Aortic regurgitation  $\geq$  mild (AR) was more frequent in the TAVI compared with the SAVR group (61% vs. 7%;  $p < 0.0001$ ). At 3 months follow-up, the mean gradient in the TAVI was similar to that of the SAVR group but prevalence of AR still higher. The unadjusted 3-year survival rate was superior in the SAVR vs. TAVI group ( $91.6 \pm 4.0\%$  versus  $67.0 \pm 7.7\%$ ;  $p = 0.01$ ). Adjustments for both age and co-morbidity resulted in loss of the difference in mortality between the groups. Mid-term survival was similar in propensity-matched analyses.

**Conclusions:** In patients with anticipated PPM TAVI offers immediate improved trans-aortic gradient, and lower incidence of PPM than SAVR. The differences in gradients become non significant 3 months post surgery. Survival is comparable between the groups only when adjusted or matched for differences in both age and co-morbidity. TAVI may be considered as a substitute to SAVR in older and sicker patients anticipated to have significant PPM.