Transaortic Transcatheter Aortic Valve Implantation of Lotus valve: First in man multicenter experience

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OBJECTIVES To evaluate feasibility and outcome of Transaortic (TAo) transcatheter Lotus valve implantation.

BACKGROUND The LOTUS (Boston Scientific, MA, USA) device is a mechanically expanded, re-sheathable, and repositionable transcatheter aortic valve replacement (TAVR) prosthesis that has shown favorable safety and efficacy outcomes through 1 year in the REPRISE II trial. A significant number of TAVR patients, however, are not suitable for transfemoral (TF) approach. In such patients, a TAo approach with a partial sternotomy could be utilized successfully with the LOTUS device. This abstract will present a multi-centre experience on this approach.

METHODS Between July 2014 to December 2014 19 patients with aortic annulus 20-27mm who were considered high-surgical-risk by a multidisciplinary heart team underwent TAo implantation of Lotus valve in 5 hospitals in Europe. None of the patients were deemed suitable for the TF approach.

RESULTS The mean age was 77.5 +/- 10.9 years with predominantly female patients (n=17). Mean Logistic Euroscore was 20.0 +/- 11.3% and STS score of 5.30 +/- 3.12%. Mean AVA was 0.58 +/- 0.24cm² with a mean gradient across aortic valve was 50.4 +/- 12.7mmHg. Valve sizes utilized were 23mm in 10, 25mm in 4 and 27mm in 5 patients. Implant success was 100%. The post TAVR mean aortic valve gradient was 7.0 +/- 3.9mmHg. There were no cases with more than mild paravalvular leak. There were no procedural mortality. 30 day all cause mortality was 0%. There was 1 major stroke (5.26%) and 1 minor stroke (5.26%). There were 2 minor bleeding complications (10.5%). There was one acute kidney injury (5.26%), one permanent pacemaker implantation (5.26%), no vascular complications or coronary obstruction requiring intervention.

CONCLUSION TAo implantation of Lotus valve is feasible with excellent outcome in patients unsuitable for TF approach using the same delivery system.