Conclusions: In patients with symptomatic severe AS, geometric patterns of LV remodeling at baseline are associated with differential risk of death, stroke, and myocardial infarction after TAVR.

TCT-687
One year outcomes of transfemoral transcatheater versus surgical aortic valve replacement in patients with intermediate surgical risk: the Italian OBSERVANT study
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Background: Transcatheter Aortic Valve Replacement (TAVR) has been increasingly offered in low and intermediate surgical risk patients with severe aortic stenosis (AS). The OBSERVANT study aims to describe 12-month clinical outcomes of a large series of propensity-matched patients at low or intermediate risk undergoing transfemoral TAVR and surgical aortic valve replacement (SAVR).

Methods: OBSERVANT is an observational prospective multicenter cohort study, enrolling AS patients undergoing SAVR or TAVR. Data on mortality, hospitalizations at follow-up and major complications were derived from administrative reports. Propensity score method was applied to select two groups with similar baseline characteristics.

Results: The unadjusted enrolled population (N=7,618) comprises 5,707 SAVR patients and 1,911 TAVR patients. Matched population comprised a total of 1,300 patients (650 patients for each group). A population at intermediate risk was selected (mean logistic EuroSCORE (102.1±19.2) vs. 95.7±17.1; SAVR vs. transfemoral TAVR; p=0.104). Thirty-day mortality was 3.8% and 3.2% for SAVR and TAVR (p=0.546). The incidence of stroke and acute myocardial infarction was similar in the two groups, whereas a higher requirement for blood transfusion was reported across the surgical cohort. The 3.6±3.6 vs. 2.3±1.2 red blood cells units; p=0.002). A higher incidence of major access site complications (0.5% vs. 0.7%; p<0.001) and permanent pacemaker implantation (3.6% vs. 15.5%; p<0.001) were reported in the TAVR group. 12-month mortality was 13.1% and 12.6% for SAVR and TAVR (p=0.283). Data regarding rehospitalizations and other major complications at 12 months will be available for the presentation of the abstract.

Conclusions: The results of this study show that transfemoral TAVR and SAVR have comparable mortality outcomes at 12-month in patients with severe AS and at intermediate surgical risk. At 30-day SAVR was associated with a higher risk for blood transfusion, whereas TAVR showed a significantly increased rate of vascular damage and permanent pacemaker requirement.

TCT-688
One Year Results of Transcatheter Aortic Valve Therapy for Failed Surgical Bioprostheses - PARTNER II Valve-in-Valve Registry
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Background: Recent reports have documented the early utility of transcatheter valve implantation within failed surgical bioprostheses at patients at high risk for surgical re-intervention. We sought to report outcomes of valve-in-valve (ViV) procedures at one year, and to understand whether residual gradients impact clinical outcomes and left ventricular mass regression (LVMR).

Methods: Patients with severe symptomatic stenosis, regurgitation, or mixed disease of the bioprosthetic aortic valve were referred for ViV at the participating centers. Transcatheter aortic valve replacement surgery (mortality/morbidity >50%) were prospectively enrolled in the multicenter PARTNER II ViV registry using the Sapient XT device.

Results: A total of 96 patients underwent ViV procedures. At baseline, the mean age was 80.9±9.3 years and 45.8% of patients were female. The Society of Thoracic Surgeons predicted risk of operative mortality was 9.9±5.1%. Labelled surgical valve sizes (mm) were 21 in 31.5%, 23 in 41.3%, and 23 in 27.2%. The 23-mm XT valve was implanted in 76.6% and the 26-mm valve in 23.4%. The predominant hemodynamic manifestation of surgical aortic valve failure was classified as prosthetic stenosis in 61%, regurgitation in 17% or combined steno-regurgitation in 22%. Thirty-day all-cause mortality was 7.7%. One year all-cause mortality, rehospitalization, stroke, adverse events and hemodynamic performance of the Sapient XT device utilized for ViV therapy including residual gradients and LVMR are currently being adjudicated and will be available at time of presentation.

Conclusions: Transcatheter aortic valve implantation within existing tissue valves is a viable therapeutic modality for the management of high-risk patients with senescent bioprosthetic devices. While short-term safety has been demonstrated, mid-term clinical outcomes and hemodynamic performance data are needed to fully understand the potential of ViV procedures to alter the therapeutic landscape. In particular, the effect of residual gradients and their impact on clinical outcomes and LVMR remain unknown.

TCT-689
Three- and Five-Year Outcomes After Transcatheter Aortic Valve Implantation in High-Risk Patients With Severe Aortic Stenosis: The U.K. TAVI (United Kingdom Transcatheter Aortic Valve Implantation) Registry
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Background: The United Kingdom Transcatheter Aortic Valve Implantation Registry (U.K. TAVI Registry) reported 30-day and 1-year survival of 92.9% and 78.6% respectively in patients undergoing TAVI. Few data are available on outcome beyond 3 years in any notable number of patients. The aim of this study was to report clinical outcome 3- and 5-years after TAVI, regardless of technology or access route, using data from UK TAVI registry.

Methods: The U.K. TAVI Registry captured all TAVI procedures performed within the UK from 01/01/2007 to 31/12/2009. Data were collected retrospectively for 578 patients. Mortality status was reported as of July 2013, and mortality tracking was achieved in 95.2% patients. Minimum follow-up was 3.5 years, maximum follow-up was 6.3 years.

Results: Survival at 3-years and 5-years was 61.6% and 48.4% respectively. At 3-years, survival was independently adversely affected by atrial fibrillation (p=0.018), chronic obstructive pulmonary disease (COPD) (p=0.034), renal dysfunction (Cr>200μmol/L) (p=0.008) and baseline Euroscore (≥18.45) (p=0.012). At 5-years, survival was independently adversely affected by age (p=0.001), diabetes (p=0.011), atrial fibrillation (0.009), chronic obstructive pulmonary disease (COPD) (p=0.022), renal dysfunction (Cr>200μmol/L) (p=0.002), and baseline Euroscore (≥18.45) (p=0.026). Valve type (Edwards vs. Medtronic), access route (transfemoral vs. non-transfemoral), or procedural complications (moderate/severe paravalvular aortic regurgitation, major vascular complications, and need for permanent pacing) did not predict mortality at either 3- or 5-years.

Conclusions: Almost half patients undergoing TAVI were alive after 5 years. Long-term survival after TAVI is determined by intrinsic patient factors (age, diabetes, AF, respiratory disease, renal impairment). Neither procedural nor device-related factors were independent predictors of long-term mortality.