TCT-119
Long-Term Follow-up After Alcohol Septal Ablation for Hypertrophic Obstructive Cardiomyopathy in Young Adults
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Background: The objective of the study was to assess the long-term safety and efficacy of alcohol septal ablation (ASA) in young adults.

Methods: Data of 163 consecutive patients who underwent ASA at our institution from 2000 to 2010 were reviewed. Clinical follow-up was obtained at a mean of 3 years after ASA in patients aged between 18 and 40 years at the time of the procedure.

Results: During the study period, 21 patients (15 males) aged between 18 and 40 years old (mean age 33 ± 1.6 years, range 18-39 years) underwent ASA. Among them, 76% were treated with beta-blockers, 33% calcium-channel antagonists and 5% disopyramide. There were 6 patients (29%) with prior pacemaker, 1 patient (5%) with history of sudden death and implantable cardioverter-defibrillator (ICD) and 1 patient (5%) with prior myectomy. At baseline, mean New York Heart Association (NYHA) functional class was 2 ± 0.5. Mean left ventricular outflow tract (LVOT) peak gradient and septal thickness were 89 ± 37 mmHg and 24 ± 9.5 mm, respectively. All procedures were performed with myocardial contrast echocardiography guidance. During ASA, 2 ± 0.7 ml of absolute alcohol was injected in 1.4 ± 0.5 septal perforators. Final procedure success (defined as complete LVOT peak pressure gradient >50%) was achieved in 20 patients (95%). There were no major complications. One patient (5%) required a temporary pacemaker for second-degree atrioventricular block. Mean peak CK was 93 ± 468 U/L. At a mean follow-up of 3 ± 2.0 years (range 0.3-8.4), repeat ASA was performed in two patients (10%) and a new ICD was needed in 1 patient (5%), while sustained clinical benefit with a low rate of adverse events was maintained through twelve months.

Conclusion: ASA in young patients appears to be safe and effective. Immediate success is achieved in a large majority of patients and procedures are uncomplicated.

TAVR I Room 131 Tuesday, November 8, 2011, 10:15 am - 12:25 pm (Abstract nos 120 - 128)

TCT-120
Mid-Term Outcomes Following Transcatheter Aortic Valve Replacement with Both Edwards SAPIEN™ and Medtronic CoreValve ReValving System® Devices According to VASC Definitions: the Milan Experience
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Background: Our aim was to assess the outcomes of transcatheter aortic valve replacement (TAVR) according to the Valve Academic Research Consortium (VASC) definitions at 30 days and 1 year.

Methods: All consecutive patients from our single-center prospective registry with aortic stenosis treated with TAVR from November 2007 to April 2011, via the transfemoral (TF), transapical (TAp), transaxillary (TAX) or transaortic (TAo) routes, were enrolled.

Results: A total of 305 patients were included: mean age was 79 ± 4.7 years and Logistic EuroSCORE 24 ± 17.0%. Median clinical follow-up length was 279 (IQR 51-485) days. The most frequent access was TF (81.1%) followed by TAX (10.2%), TAp (7.2%) and TAo (1.0%). ESV was implanted in 60.7% of the patients. Thirty-day mortality was 4.7%, with a myocardial infarction rate of 1.3% and stroke of 1.0%. At multivariate analysis, body mass index and logistic EuroSCORE were significantly associated with an increased risk of 30-day mortality. Life-threatening bleeding occurred in 25.9% of the patients and 15.7% had major vascular complications. According to access site or type of valve, there was no difference in device success (92.5% overall), combined safety endpoint at 30 days (61.8%) or combined efficacy endpoint (72.0%) at one year follow-up. Conversely, there was a significant higher occurrence of conduction disturbances and/or atrial fibrillation (10.1% vs. 23.1%, p = 0.006) as well as need of pacemaker (6.3% vs. 28.6%; p < 0.001) with MCV as compared to ESV.

Conclusion: Routine TAVR using both ESV and MCV via a range of access appears feasible, with good overall device success and outcomes.

TCT-121
Late Structural Integrity of Balloon Expandable Stents used for Transcatheter Aortic Valve Replacement: Assessment by Multi-detector Computerized Tomography
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Background: Late bioprosthetic valve failure most commonly results from leaflet degeneration but may also be caused by gross deformity of the valve frame. Late structural integrity of the balloon expandable stents used in transcatheter aortic valve replacement (TAVR) is ill defined. We evaluated stent circularity, expansion and evidence of frame fracture late post implantation using multidetector computerized tomography (MDCT).

Methods: Subjects greater than 1 year post implantation of a balloon expandable aortic valve underwent MDCT. Geometry of the stent frame was assessed for circularity, minimum (Dmin) and maximum (Dmax) external diameter and expansion ratio at three levels: inflow, mid and outflow. Circularity was defined as an eccentricity index (EI) of less than 0.1 (EI < 0.1 = Dmin/Dmax) and expansion ratio as a percentage of the measured cross sectional stent area divided by the expected area for a fully expanded valve.

Results: 48 patients underwent MDCT at an average 2.5 years (1.0-4.0yrs) post implantation including 34 Edward SAPIEN valves, 7 SAPIEN XT valves and 7 Cribier Edwards(CE) valves. 143 of 144 (99%) analyzed segments of the 48 valves were circular. The was no difference in eccentricity between valve type (CE: EI 1.8 ± 1.1, SAPIEN: EI 2.1 ± 2.2, XT 2.2 ± 2.2, p = 0.71) or from the inflow to outflow aspect of the stent (p = 0.54). The mean external diameter of the 23 and 26 mm valves was 23 ± 4.9 mm and 25 ± 9.0 mm respectively. The average expansion ratio was 104 ± 7.4% with a significant increase from the inflow to outflow level (100.5 ± 6.7% vs 108.1 ± 6.9%, p < 0.001). The was no difference in EI between valve type (CE 101.6 ± 7.2%, SAPIEN 104.7 ± 7.2%, XT 103.3 ± 8.4%, p = 0.48 ). There were no cases of stent fracture. Balloon expandable aortic valves have excellent rates of circularity and maintain full expansion without stent fracture late following implantation, thus supporting long term valve durability.

TCT-122
Short- and Long-Term Safety and Effectiveness of Transcatheter Aortic Valve Implantation in a Failing Surgical Aortic Bioprosthesis
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Background: The viability of transcatheter aortic valve implantation (TAVI) in patients with a failing previously-implanted surgical aortic bioprosthesis has been reported, mostly from single centers. We present results from a multicenter feasibility study in patients followed in one year after TAVI implant. Methods: A total of 18 subjects implanted with the 18Fr CoreValve TAVI prosthesis (Medtronic, Irvine, Calif.) in a failing surgical aortic bioprosthesis at three centers in Germany. Subject inclusion requirements included > 75 years old and either surgical risk with logistic EuroSCORE > 15% or >1 high-risk co-morbidity. Results: Implanted subjects were 79 ± 4 years old, 67% male, 78% NYHA class III/IV, logistic EuroSCORE 34 ± 14, and had failed surgical bioprosthesis from six manufacturers. The procedure was considered successful by the implanting physicians in 89% (16/18) of cases. One subject was converted to surgery during the procedure and another was successfully implanted after a second attempt. Mortality at 30 days and one year was 11% (2/18) and 28% (5/18). Two cardiac deaths occurred, including one within 30 days. Two subjects had strokes, both within 30 days. After 30 days and 12 months, 86% and 73% of subjects improved at least one NYHA class and either surgical risk with logistic EuroSCORE > 15% or >1 high-risk co-morbidity. Conclusion: Most patients with a failing surgical bioprosthesis were successfully implanted with a TAVI prosthesis in this multicenter feasibility study. Outcomes at 30 days were within expectations for this very high-risk subgroup and improvements were sustained through twelve months.