more post balloon dilatation and 30-day major stroke in comparison with those treated by SAPIEN XT (16.1% vs. 7.7%, p=0.04 and 8% vs. 1.3%, p=0.02, respectively).
Conclusions: Optimal clinical performance of CoreValve and SAPIEN XT appears to be reached with different degrees of device oversizing. An individualized-device-approach during TAVR, utilizing a specific device for a specific annulus size, enabling favorable degree of oversizing, may improve clinical outcomes. This approach should be further validated in randomized trials.

TCT-701

A Multidisciplinary, Multimodality, but Minimalist (3M) approach to transfemoral transcatheter aortic valve replacement facilitates safe next day discharge home in high risk patients: 1 year follow up

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Background: TAVR is an alternative to surgery in high risk operable patients; however, complications and cost currently limit expansion into lower risk populations. Although mortality, morbidity and length of stay (LOS) are expected to improve, we sought to determine if a multidisciplinary, multimodality, but minimalist (3M) approach could improve outcomes with currently available valve technology.
Methods: Patients considered high risk for surgery, but relatively low risk for TAVR, were rigorously screened with functional and cognitive assessments as well as multi-modality imaging. From a potential pool of 335 accepted transfemoral TAVR patients, 73 (22%) were selected for the 3M approach and underwent SAPIEN XT (Edwards Lifesciences Inc., CA, USA) valve implantation. All procedures in the second half of the cohort (38/73) were performed awake with no sedation and only femoral monitoring. Thirty day and one year outcomes were reported according to VARC-2 guidelines.
Results: The mean patient age was 83±7 years with a mean STS score of 8.3±3.7%. All-cause mortality or major stroke at 30 days and 1 year was 1.4% (1/73) and 8% (4/50) respectively. Procedural events at 30 days included life-threatening bleeding (1.4%), major vascular complications (2.7%), and need for permanent pacemaker (2.7%). The median LOS was 1 day (IQR1-2) with a mean LOS of 1.7±1.5 days. The mean LOS for the initial intubated cohort (35/73) vs the awake cohort (38/73) was 2.1±2 vs 1.3±1 days respectively (p=0.03). Overall, 50/73 (68%) were discharged home one day post TAVR with 2 readmissions (2.7%) within 30 days. Aortic valve area increased from 0.7±0.14 cm2 to 1.69±0.29 cm2 (p< 0.001) at 30 days and 1.5±0.25cm2 (p< 0.001) at 1 year; mean trans-aortic gradient decreased from 43±18 mmHg to 9 ± 3 mmHg (p < 0.001) at 30 days and 11±5 mmHg (p < 0.001) at 1 year. At 30 days and 1 year, 98% (71/73) and 92% (46/50) were NYHA class I or II with mild or less paravalvular regurgitation.
Conclusions: Rigorous patient screening as well as improvements in procedural guidance, device selection, and adherence to the 3M clinical pathway permits safe next day discharge home in high risk patients with a 92% survival rate at 1 year.

TCT-702

Multicenter Assessment of TAVR in Failed Aortic Bioprostheses: Evaluation of Implantation Depth and Association with Elevated Post-Procedural Gradients in SAPIEN vs. CoreValve Valve-in-Valve Implantation

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Background: Aortic Valve-in-Valve (VinV) is limited by device underexpansion and elevated post procedural gradients. Supraanular position of the transcatheter heart valve (THV) device in relation to the failed surgical valve is suggested to be advantageous. No comprehensive analysis of implant depth in valve-in-valve and post procedural hemodynamics was reported.
Methods: Analyses of cases included in the global VinV registry was performed. Only cases with implantation of either SAPIEN XT or CoreValve were included in the analysis. Cases performed inside surgical valves without fluoroscopic markers on bioprosthesis basal ring (e.g. stentless, homografts, Mosaics), or those with suboptimal images, were excluded. Implant depth was defined in CoreValve cases in absolute length and in SAPIEN cases in percentage of the THV device below the surgical valve ring. Evaluation of implantation depth was performed by an analyst blinded to clinical outcomes. Elevated post procedural gradients were defined as mean ≥ 20mmHg.
Results: A total of 100 aortic vinv cases were analyzed (60% CoreValve, 40% SAPIEN). Median implanted depth of of the CoreValve device was 7.7mm (interquartile range, IQR, 5.4-10.1mm) and of the SAPIEN device median of 20.3% of device length below the ring (IQR 7.9-25.5%). Post implantation echocardiographic results in the total group included: aortic valve area 1.49 ± 0.47cm2, mean gradient 16 ± 6.9mmHg. Elevated post procedural gradients were recorded in 27% of patients (16.7% of CoreValve cases, 42.5% of SAPIEN cases). In CoreValve cases implant depth was strongly associated with elevated gradients (≥6mm, 22.7%, < 6mm, 0%, p=0.04) but not with the surgical valve size (label≤21mm 17.2%, >21mm 15.6%, p=0.34). In SAPIEN cases, association between elevated gradients and surgical valve size existed (label≤21mm 66.7%, >21mm 28%, p=0.02) but not with implant depth (≥20% below the bioprosthesis ring, 45%, < 20% below the bioprosthesis ring, 40%, p=0.87).
Conclusions: Elevated post-procedural gradients are common after aortic VinV. Significant contributors for elevated gradients are deep implantation of a CoreValve device and SAPIEN implantation inside a small surgical valve.

TCT-703

Impact of Periprocedural Stroke on Mid-term Mortality after Transcatheter Aortic Valve Implantation

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Background: Stroke occurrence in patients undergoing transcatheter aortic valve implantation (TAVI) has been reported among complications in several studies. The aim of this study was to assess the impact of periprocedural stroke on mortality at mid-term follow-up after TAVI.
Methods: Six-hundred-fifty-six patients with aortic stenosis underwent TAVI with the CoreValve system (92.8%) or the Edwards SAPIEN valve system (7.2%). Stroke and transient ischemic attack were defined according to the Valve Academic Research Consortium-2 consensus document. A cerebrovascular accident (CVA) was defined as any stroke or transient ischemic attack. Periprocedural events were defined as events occurring within 72 hours from the index procedure. Multivariable Cox regression analyses were performed to calculate hazard ratio (HR) with 95% confidence intervals (CI) of mortality.
Results: Procedural success occurred in 97.4% of patients. The incidence of any stroke and of CVA after the index procedure was 2.4% and 2.7%, respectively. Periprocedural strokes accounted for 56.2% of all strokes and occurred in 1.4% of patients included in the study. Periprocedural CVA accounted for 55.6% of all CVA and occurred in 1.5% of patients. After a median follow-up of 434 days, all-cause mortality and cardiac mortality were significantly higher in patients with periprocedural stroke as compared to those without (66.7% vs 22.9%, logrank p=0.001; 66.7% vs 16.8%, logrank p< 0.001, respectively); and among patients with periprocedural CVA as compared to those without (70.0% vs 22.8%, logrank p < 0.001; 70.0% vs 16.7%, logrank p < 0.001, respectively). Periprocedural stroke and CVA were significant independent predictors of all-cause mortality (HR 4.67, 95% CI 1.96-11.1, p< 0.001; HR 4.66, 95% CI 2.06-10.5, p< 0.001, respectively) and of cardiac mortality (HR 6.47, 95% CI 2.75-15.2, p< 0.001; HR 6.74, 95% CI 3.05-14.9, p< 0.001, respectively).
Conclusions: More than half of strokes and CVA following TAVI occur within the periprocedural period. Periprocedural stroke and CVA are independent predictors of all-cause mortality and cardiac mortality at mid-term follow-up. Strategies for periprocedural cerebrovascular events prevention are needed.