TCT-720

Transapical versus Transfemoral Aortic Valve Implantation: a multi-center propensity matched study

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Background: There are no direct comparisons between Transapical- Aortic Valve Implantation (TA-AVI) and Transfemoral-Aortic Valve Implantation (TF-AVI). Therefore, the aim of this propensity–matched study was to compare the short- and mid-term outcomes of TA-AVI versus TF-AVI.
Methods: Data from 4 European centers were pooled and analyzed. To minimize differences a propensity-score analysis was performed matching patients undergoing TA-AVI and TF-AVI. Study endpoints were defined according to the Valve Academic Research Consortium-I at 30 days and 1 year. Primary endpoints of this study were 30-day all-cause mortality and mortality during follow-up.
Results: A total of 882 underwent TAVI of whom 793 patients TF-AVI (89.9%) and 89 patients (10.1%) TA-AVI. After propensity matching, 87 patients were identified in each cohort. The logistic EuroSCORE was 25.7 (15.5 – 35.8) in the TF-AVI cohort and 27.0 (20.1 – 34.0) in the TA-AVI cohort. TF-AVI was associated with a higher frequency of major (16.1 vs. 5.7%, p=0.029) and minor vascular complications (16.1 vs. 2.3%, p = 0.002). In-hospital stay was significantly longer in patients undergoing TA-AVI (10.0 [6.5 – 13.5] vs. 7.0 [5.5 – 8.5], p<0.001). At 30 days, there was a trend towards an increased risk of all-cause mortality in the TA-AVI group (16.1% vs. 6.9%, HR [95% C.I.]: 2.92 [0.82 – 10.46], p = 0.09). During a median (IQR) follow-up of 365 days (114 – 616 days), TA-AVI was associated with an increased mortality (HR [95% C.I.]: 3.25 [1.11 – 9.50], p = 0.03).
Conclusions: In institutions with a low volume of TA-AVI, TA-AVI is associated with an increased risk of all-cause mortality and longer hospital stay but less vascular complications in comparison to TF-AVI. The interaction between experience and type of treatment on outcome requires further investigation before advocating one treatment over the other.

TCT-721

Comprehensive Prospective Cognitive and Physical Function Assessment in Elderly Patients Undergoing Transcatheter Aortic Valve Implantation

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Background: TAVI is occasionally associated with stroke and silent cerebral ischemia, which may affect cognitive and functional performance. Conversely, it is suggested that improved systemic perfusion following the procedure may improve patient cognitive function.
Methods: We performed a comprehensive prospective functional, cognitive and quality of life (QOL) evaluation, in consecutive patients who underwent TAVI using the CoreValve device (Medtronic Inc). The evaluation was performed at baseline and one month after the procedure and included the short form 36 health survey (SF-36) for quality of life assessment, Mini-Mental status examination (MMSE), Quantitative clock drawing test (Rouleau), color trail test (CTT1 and CTT2), Cognistat evaluation, Barthel index (BI) scoring and Duke Activity Status Index (DASI). All tests were performed by an occupational therapist that specializes in cognitive function assessment.
Results: A total of 36 patients completed the full pre and post evaluation. Mean age was 82.2±4.2 years (52.8% men), 94.5% of patients had NYHA grade III/IV and 13.9% had prior stroke. After the procedure, all patients had improved their NYHA functional status and valve hemodynamics. At 1 month there was a significant improvement in the MMSE and Cognistat evaluation (25.9±3.3 to 27.6±2.4, p<0.001, 5±1 to 5.7±0.7 p=0.001, respectively).
Conclusions: Our preliminary results of a comprehensive assessment of patients undergoing TAVI indicate favorable results in both functional performances and cognitive function early after the procedure.

Health survey	Baseline (n=36)	1-month (n=36)	P value
SF-36			
Physical Component Scale	35.3 ±9.5	38.1±10.6	0.24
Mental Component Scale	46.8±9.0	44.0±10.2	0.22
Cognitive assessment			
MMSE	25.9±3.3	27.6±2.4	<0.001
Rouleau	8.3±1.3	8.2±2	0.27
CTT-1	76.2±20.8	75±18.4	0.89
CTT-2	79±17.8	81±19.2	0.32
Cognistat	5±1	5.7±0.7	0.001
Functional assessment			
DASI	17.3±9.7	17.3±9.8	0.97
Barthel Index	90.7±13.1	90.0±17.1	0.95

TCT-722

Diabetes Mellitus Does Not Impact The Short- and Long-Term Outcomes Of Patients Undergoing Transcatheter Aortic Valve Replacement

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Background: Percutaneous coronary intervention is associated with worse outcome in diabetic patients. The outcomes of diabetes mellitus (DM) patients undergoing surgical aortic valve replacement are poor compared to non-diabetic patients (ND). The present study aimed to evaluate whether the presence of diabetes has an impact on the outcome of patients undergoing transcatheter aortic valve replacement (TAVR).
Methods: All patients undergoing TAVR were included. A comparison among baseline, procedural, and post-procedural outcomes was performed between DM and ND patients.
Results: Out of 373 patients who underwent TAVR, 114 (30.5%) had DM while 259 (69.5%) did not. Most of the baseline and procedural characteristics were similar. Society of Cardiothoracic Surgeons (STS) score did not differ between groups (DM 10.72±4.83 vs. ND 10.37±4.50; p=0.511). No major differences were noted in mortality rates at 30 days (DM 7.0% vs. ND 8.9%; p=0.53) and at 1 year (DM 20% vs. ND 20.6%; p=0.891). However, the rates of major vascular complication and life threatening bleeding were higher in the ND group (14.0% vs. 5.2%;p=0.013; 10.5% vs. 4.3%; p=0.049, respectively), which translated into prolonged hospital stay (ND-10.23±7.97 vs. DM 8.4±6.28 days; p=0.018). Further, no outcome differences were noted between DM patients treated with insulin (n=38) versus those on oral/diet therapy (n=71). For comparison, our center's surgical data (2003-2012) for isolated aortic valve replacement (DM n=321 vs. ND n=941) demonstrated that DM patients used more blood products(786±961 vs. 599±859 ml; p=0.001), had more post-procedural renal failure (8.1% vs. 2.2%; p <0.005) and longer hospital stay (11±11 vs. 9±8 days; p <0.001), although the mean STS score in this group was lower than in the TAVR group (DM 5.3±6.3 vs. ND 3.1±4.3; p <0.001). These differences did not translate to differences in in-hospital mortality.
Conclusions: Unlike with surgical aortic valve replacement, when disparities in mortality exist between DM and ND even in intermediate-risk patients, the outcomes of patients undergoing TAVR are mostly similar regardless of the presence of diabetes. TAVR should be considered as an alternative for surgery in suitable DM patients.