newer ESV-3 valve in patients (pts) undergoing TAVR on dual antiplatelet therapy (DAPT).

METHODS All Pts were loaded with 600 mg Clp and 500 mg ASA the day before TAVI. Platelet aggregation (Agg) were evaluated in all pts by the Multiplate system (Dynabyte, Munich, Germany) before (T0), directly after intervention (T1) and on T2 (day1), on T3 (day2), and on T4 (day3). PA was simultaneously assessed at the above time points by measuring CD62 P expression by flow cytometry.60 pts (age 82.5±0.8 years, 21 (35 % male) with severe aortic stenosis and high surgical risk (log Euroscore 17.2±1.2 %) underwent successfully TAVI with the ESV-XT and 114 pts (age 81.5±0.6 years years, log Euroscore 21.4 +1.4 %, 43 (37.7% male) underwent TAVI with the ESV-3.

RESULTS Adenosindiphosphat (ADP)- , arachidonic acid (ASPI) - and collagen (coll) induced platelet Agg was inhibited to the same extent in both valve types directly after TAVI under dual antiplatelet therapy [ESV-XT (T1) versus ESV-3 3 (T1) : AggADP, (AUC): 16 (11-24) versus 19 (13-30); p=0.514; AggASPI (AUC): 13(5-19) versus 12 (6-17); p=0.436.Agg coll (AUC): 13(5-19) versus 12 (6-17); p=0.436]. There was no significant difference in platelet drop between both valve types between day 0 and day3. [ESV-XT (T0T3) versus ESV-3 (T0T3): 55.2 ± 4.2 versus 63.5± 8.1; p=0.364.] However there was an enhanced expression of CD62P directly after implantation in pts with ESV-XT compared to pts with the ESV-3. [ESV-XT versus ESV-3 :median (25th;75th percentile) mean immunofluorescence : CD62P : 7.4 (6.8-8.6) versus 6.6 (6-7.9), p=0.014;] CD 62 P expression was associated to the grade of paravalvular aortic regurgitation (AR) after valve implantation. TAVI patients with AR grade 1 exhibited a significantly higher CD62P expression than patients with AR grade 0 or Trace post implantation [CD62P expression in AR grade 1 versus CD62P expression in AR (grade 0 or Trace) : median (25th;75th percentile) mean immunofluorescence :7.9 (7.3-9.1) versus 7.1 (6.4 -8.0); p < 0.001)]

CONCLUSIONS Although platelet inhibition was similar in both valve types, platelet activation was significantly enhanced in pts with the ESV-XT compared to the ESV-3 valve and was associated to the amount of residual AR which was significantly reduced by ESV-3, which may have implications for thromboischemic events following TAVR procedure.

CATEGORIES STRUCTURAL: Valvular Disease: Aortic

KEYWORDS Paravalvular leak, Platelet function, TAVR

TCT-644

Comparison of the new balloon-expandable SAPIEN 3 versus the SAPIEN XT. 30-day clinical outcome and echocardiographic data after transfemoral aortic valve implantation

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BACKGROUND Post-TAVI paravalvular aortic regurgitation (PVL) is still one of the most important limitation of first generation transcatheter aortic valve prosthesis. The Edwards SAPIEN 3 (ESV-3) transcatheter heart valve incorporates a paravalvular sealing system with an active 3 dimensional coaxial positioning and should herewith address the problem of PVL. The aim of this study was to compare 30-day clinical outcome and especially the incidence and magnitude of post-TAVI paravalvular aortic regurgitation (PVL) after CT-guided implantation of the newer generation transfemoral 14/16F-ESV-3 to its precursor model 16/20F-ESV-XT using the Heart Navigator algoritm for all pts.

METHODS Between August 2012 and October 2014, 209 consecutive with high surgical risk underwent successfully transfemoral TAVI in local anesthesia using either the ESV-XT (23,26,29 mm) or the ESV-3 (23, 26,29mm). CT-imaging including the Heart Navigator algorithm was used for prosthesis size selection and valve implantation plane selection. Clinical events and post-TAVI PVL was evaluated after 30 days according to the VARC-II criteria.

RESULTS Patients: 102 pts (mean age 81.97 ± 0.5 years) with severe aortic stenosis (pmean 47.6 ±1.52mmHg, mean AVA 0.76 ± 0.11 cm2) and high surgical risk (mean log Euroscore-I 16.9 ± 0.86%) underwent successfully TAVI with the ESV-XT and 107 pts (mean age 81.4 ± 0. 6years, mean log Euroscore-I 20.2 ± 1.39 with the ESV-3 in local anesthesia. Procedural outcome: Device success was 101/102 (99.2%) in ESV-XT and 100% in ESV-3, respectively. Compared to TAVI with the ESV-XT, the ESV-3 procedures had shorter mean fluoroscopy time (10.0 ± 0.5 min in vs 11.8 ± 0.5 min, p= 0003, and less contrast media was needed (188.9 ± 5.6 ml versus 170.4 ± 4.7 ml, p=0.04. The procedure time (skin-to-skin) was not significantly different (108.3 ± 4.6 min vs 101.3 ± 3.6 min, p=0.496). In-Lab strokes and death did not occur in both groups. 30-day clinical outcome: 30 day all-cause mortality was similar among both valves implanted. (ESV-XT vs ESV-3: 2.9% vs 1.9%; p=0.494) as was major/minor stroke rate (ESV-XT vs ESV-3: 3.9% vs 1.9%; p=0.333) . There was no significant difference between the two valve types concerning major vascular complication. (ESV-XT vs ESV-3: 6.9% vs 9.3%; p=0.322) and in the rate of new pacemaker implantation (ESV-XT vs ESV-3: 16.7% vs 12.1%,n.s.). 30-day echocardiographic data: The rate of No/Trace AR was significantly higher in the ESV-3 compared to the ESV-XT (ESV-3 vs ESV-XT: 89.7% vs 37.3%; p< 0.001). Mild AR ist found in in 62.7% after ESV-XT and in only 10.3% after ESV-3-implantation (p<0.001). There was no severe AR in both groups, in the ESV-XT there were 2.9 % of patients with moderate AR compared to 0 in ESV3.

CONCLUSIONS Clinical outcome for both valves is excellent. Mild AR is significantly more frequent after ESV-XT-implantation. The persistence of the result over time needs to be determined in further studies.

CATEGORIES STRUCTURAL: Valvular Disease: Aortic

KEYWORDS Balloon-expandable, Paravalvular leak, TAVR

TCT-645

Poorer Left Ventricular Global Longitudinal Strain and Less Tricuspid Regurgitation Predicts Improvement in Left Ventricular Function Following Transcatheter Aortic Valve Replacement

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BACKGROUND With the advent of transcatheter aortic valve replacement (TAVR), surgically high-risk or inoperable patients can now undergo invasive aortic valve treatment. However, predicting the left ventricular (LV) functional recovery after TAVR is still challenging.

METHODS We prospectively enrolled patients undergoing TAVR at the Stanford Transcatheter Heart Valve Program who provided consent for the study. We measured conventional echocardiographic parameters and novel metrics of ventricular strain (LV global longitudinal strain, LV-GLS), in which a more negative value represents better LV function. Patients were divided into improvement and deterioration groups according to change in LV ejection fraction (EF) before and 1 month after TAVR.

RESULTS A total of 87 patients were included in this study. Overall, mean age and mean STS-predicted 30 day mortality were 83.5±8.9 years and 8.37±4.4 %, respectively. Mean LVEF and AV gradient were 56.6±14.7 % and 51.4±15.1 mmHg, respectively. We identified 53 patients who showed improvement in LVEF (delta LVEF=4.0±4.3 %) and 34 patients who showed deterioration in LVEF (delta LVEF= -5.6±6.3 %). The two groups had no significant difference in baseline clinical characteristics, including LVEF (p=0.43, Figure A) and mean AV gradient (p=0.54). However, the improvement group had lower baseline LV-GLS (p=0.02, Figure B) and less tricuspid regurgitation at baseline (1.1±0.5 vs. 1.5±0.8 °, p=0.04).