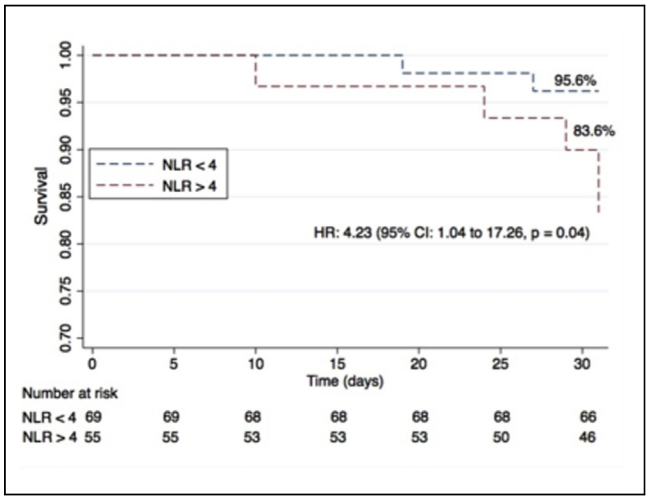

CONCLUSIONS In high risk patients with severe aortic stenosis undergoing transcatheter aortic valve replacement, elevated neutrophil to lymphocyte ratio was associated with increased mortality at 30 days. This effect was independent of previously established risk predictors in these patients. More large scale randomized studies are needed to further evaluate these results.

CATEGORIES STRUCTURAL: Valvular Disease: Aortic

KEYWORDS Aortic valve stenosis, Neutrophil-Lymphocyte ratio, Transcatheter aortic valve replacement

TCT-677

Stentless vs. Stented Aortic Valve-in-Valve Implantation: Insights from the Valve-in-Valve International Data Registry (VIVID)

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BACKGROUND Transcatheter aortic valve-in-valve (ViV) implantation inside failed bioprostheses is an alternative approach to repeat open heart surgery for those with failed bioprosthetic valves. However, stentless surgical valves lack fluoroscopic markers and provide distinctive challenges. Our objective was to compare clinical outcomes following aortic ViV procedures in stentless vs. stented bioprostheses, using a large global registry.

METHODS A total of 1,104 aortic ViV procedures from the ViV International Data (VIVID) registry were investigated (903 stented bioprostheses, 201 stentless).

RESULTS Patients with stentless bioprostheses were younger and had similar STS risk of mortality scores when compared to their stented counterparts (74.7 ± 12.4 vs. 78.68 ± 8.3, p < 0.001; 9.8 ± 8.4 vs. 10.5 ± 9.3, p = 0.41, respectively). Stentless bioprostheses had a longer median time to failure and failed predominantly with regurgitation (12 vs. 9 years, p < 0.001; 57.6% vs. 25.6% regurgitation, p < 0.001, respectively). The effective orifice area was larger in stentless valves than in stented ones (valve area 1.2 ± 1.5 vs. 0.94 ± 0.6 cm2, p = 0.02, respectively), with smaller mean gradients as well (27.1 vs. 37.63 mmHg, p < 0.001, respectively). Stentless bioprostheses were more commonly treated with self-expandable devices (66.8% vs. 54.5% of stented, p < 0.001) and transesophageal echocardiography was more commonly utilized in these procedures (73.1% vs. 56.4%, p < 0.001). Device malposition was more common in stentless and Mosaic surgical valves than in stented non-Mosaic ones (12.3% vs. 12.4% vs. 5.1%, p < 0.001, respectively). There was a greater need for second transcatheter heart valve device in stentless valves as well (8.5% vs. 3.6%, p = 0.002). Coronary obstruction was more common in stentless valves (5.8% vs. 1%, p < 0.001). Final aortic valve area was greater in stentless prostheses (1.75 ± 0.4 vs. 1.41 ± 0.6 cm2, p < 0.001) and post-procedure mean gradients were also lower in this group (11.7 ± 7 vs. 17.2 ± 9.6 mmHg, p < 0.001). There was a trend towards higher 30-day mortality in stentless valves (8.4% vs. 5%, p = 0.07). However, 1-year mortality was similar between the groups (14% stentless vs. 16.6% stented, p = 0.59).

CONCLUSIONS Aortic ViV procedures inside stentless bioprostheses are challenging and associated with more device malposition, coronary obstruction and a trend towards increased short-term mortality. However, stentless ViV procedures offers improved hemodynamics with similar survival rates at one year.

CATEGORIES STRUCTURAL: Valvular Disease: Aortic

KEYWORDS TAVR, Transcatheter aortic valve replacement, Valve-in-valve

TCT-678

Abstract Withdrawn

TCT-679

The third generation Edwards Novaflex/SAPIEN 3 TAVR device: Impact of sizing guidelines for transfemoral access suitability and shortterm results

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BACKGROUND The latest generation of the balloon-expandable Edwards SAPIEN device, the SAPIEN 3, has shown very positive results in recently published studies. Most notably, it demonstrated a low rate in paravalvular regurgitation, a low rate in vascular access site complications, a low stroke rate and a very low mortality rate. These clinical outcomes are mainly due to significant design improvements: downsizing of the delivery system (Edwards Commander delivery system) with sizes of 14F (23 mm and 26 mm device) and 16F (29mm device) and a paravalvular sealing cuff to reduce the amount of residual paravalvular regurgitation. According to these changes, new sizing recommendations were developed for the SAPIEN 3 device, which even allows slight undersizing.

METHODS To analyze the percentage of patients who could have received a SAPIEN 3 device in a transfemoral TAVR patient cohort. We retrospectively reviewed CT-scans of 201 TAVR patients implanted between February 2014 (when the SAPIEN 3 was introduced at our hospital) and April 2015 and compared the suitability for the SAPIEN 3 and SAPIEN XT respectively, based on access vessel and/or the 3D annulus diameter.

RESULTS With respect to the new sizing guidelines for the SAPIEN 3, 196 patients (98%) of the 201 patients analyzed would have been suitable for an implantation with the new SAPIEN 3 device. In contrary, the SAPIEN XT device could have been implanted in significantly less patients (80%). The SAPIEN 3 device was finally implanted in 102 patients (52%). The short-term outcome of this cohort showed excellent results. Paravalvular regurgitation was virtually absent with the vast majority having none or trace postinterventional aortic regurgitation on echocardiography (90.7%). None of the patients had more than mild paravalvular regurgitation. Major vascular access site complications or major bleeding according to the VARC II criteria were not observed in our cohort. Minor vascular complications and minor bleeding occurred in 6.8 % and 3.9 % respectively. If vascular complication occurred, they were related to closure device failure with subsequent stent graft implantation. Thirty-day outcome showed a very low major stroke rate (1.9%) and a low mortality rate (2.9%). However, we observed a 20.6% permanent pacemaker rate in our SAPIEN 3 cohort.

CONCLUSIONS As a result of size reduction of the delivery system and changes in the 3D sizing guidelines, the new third generation SAPIEN 3 device can be implanted in the majority of TAVR patients. Thus, significant more TAVR patients can benefit from an aortic valve replacement with the new SAPIEN 3 device. Within our cohort, implantation of the new SAPIEN 3 device resulted in excellent procedural and short-term outcomes.

CATEGORIES **STRUCTURAL:** Valvular Disease: Aortic

TCT-680

Pre-Procedural Work-up process In Patients Undergoing Transcatheter Aortic Valve Implantation: Results From The Written (WoRldwIde TAVI ExpieNce) Survey

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BACKGROUND Transcatheter aortic valve implantation (TAVI) has been worldwide adopted, but there are still several areas where consensus and evidence are lacking. Pre-procedural work-up process is essential to determine eligibility and predict outcomes, but may vary across centers. The objectives were to determine the real life practice related to pre-procedural TAVI planning across different centers around the world.

METHODS From January to May 2015, an online survey was distributed worldwide in centers performing TAVI regardless the number of procedures and valve type. There was a responsible to distribute the survey for each country or region.

RESULTS A total of 167 centers (including 37843 TAVI procedures) responded the questionnaire from 27 different countries in Europe, North-America and South-America. Heart team meetings were regularly scheduled in most of the centers (>95%) with high participation of interventional cardiologist (95%) and cardiac surgeon (94%), but low involvement of other specialists (radiologists 16%; internists/geriatrics 14%). While one or two surgical risk scores were used in 99% and 65% of the centers, respectively; frailty (37%), quality of life (23%) or 6 minute walking (3%) assessments were rarely performed. Moderate or low risk patients represent 20% of the TAVI candidates. Cardiac-CT was the preferred imaging study for annulus measurements and valve sizing (87%). Finally, concomitant severe coronary artery disease (CAD) was treated before or during the TAVI procedure in 79% and 4% of centers, and 3% of centers did not treat systematically significant CAD in TAVI candidates.

CONCLUSIONS In the real-world practice, up to one-fifth of patients undergoing TAVI are considered at moderate or low surgical risk. While the role of the Heart Team on the clinical-decision making process is well established, the involvement of other non-cardiovascular specialists remains anecdotic. Cardiac CT scan is the "gold standard" for annulus assessment and valve sizing, and significant CAD is treated before the TAVI procedure in the majority of centers.

CATEGORIES **STRUCTURAL:** Valvular Disease: Aortic

TCT-681

Aggressive oversizing of balloon-expandable transcatheter aortic valve replacement: predictor of para valvular leak with severe aortic valvar complex calcification

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BACKGROUND Higher calcification of the aortic valve complex increases the risk of post-dilatation and paravalvular leak (PVL) after transcatheter aortic valve replacement (TAVR). The role of aggressive oversizing as a predictor of PVL post TAVR is not well understood. The aim of this study was to evaluate the association between degree of aortic valve complex calcification and PVL after aggressive oversized balloon-expandable TAVR.

METHODS Between January 2013 and April 2015, a total of consecutive 347 patients with severe aortic stenosis underwent TAVR (Sapien=70 or XT=270) and had suitable contrast cardiac CT. Aggressive oversizing was defined as over 20% of area oversizing. A region of interest for calcium volume included the total leaflet region - the area from the annulus to leaflet tips and left ventricular outflow tract (LVOT) region- the area from the annulus to 5 mm inferior to it. Annular device landing zone (ALZ) consisted of the area from the annulus to 3 mm superior to it and 2 mm inferior to it. Aortic valve complex was also divided by each leaflet sector. Calcium (CA) scoring was set at 850 Hounsfield Unit threshold. Post procedural PVL was evaluated by transthoracic echocardiography at 30−days.

RESULTS Of 347 patients, aggressive oversizing was performed in133 patients (38.3%). From these patients, 31 patients (23.3%) had PVL ≤mild (25 patients) or moderate PVL ≤ (6 patients). One patient had aortic annulus injury. Mean total leaflet CA, ALZ CA, and LVOT CA were 160.9 mm3, 24.2mm3, and 0.4mm3, respectively. ALZ CA, left coronary cusp (LCC)-ALZ CA, and LCC-LVOT CA were higher in PVL (41.8 ± 49.7 mm3 vs. 18.9 ± 30.4 mm3; p=0.02, 22.1 ± 28.8 mm3vs. 8.5 ± 16.6 mm3; p=0.016, 17.3 ± 24.3 mm3 vs. 6.0 ± 21.7 mm3; p=0.025, respectively). In receiver operator characteristic curve analysis, LVOT CA and LCC-LVOT CA were predictor of PVL (area under the curve (AUC) =0.739; 95% confidence interval (CI) 0.638-0.840; p <0.001, AUC=0.704; 95% CI 0.592-0.816; p=0.001, respectively).

CONCLUSIONS Of aortic valvular complex calcification, LVOT volume was the strongest predictor for PVL after aggressive oversizing balloon-expandable TAVR.

CATEGORIES **STRUCTURAL:** Valvular Disease: Aortic

KEYWORDS Paravalvular leak, Predictors, TAVR

TCT-682

Impact of concomitant mitral regurgitation on mortality after transcatheter aortic valve replacement for severe aortic stenosis in high risk patients – results from a prospective single center registry

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BACKGROUND Transcatheter aortic valve replacement (TAVR) enables treatment of inoperable and high risk patients with severe aortic stenosis. Impact of concomitant mitral regurgitation (MR) on outcome in patients undergoing TAVR appears to be unclear. Therefore, it was aim of this study to evaluate the impact of MR on outcome after TAVR.

METHODS Patients with severe aortic stenosis, in which TAVR was performed between 2006 and 2014 were included into the analysis. MR was measured by echocardiography at baseline, 30 days and at one year, 30-day and 1-year mortality was calculated.

RESULTS Between January 2006 and May 2014 a total of 1530 consecutive patients (Age 80.3±5.9 years, Logistic EuroScore 20±13%, STS PROM 8.5±6.2%) with severe aortic stenosis were treated with TAVR at our institution. At baseline 178 (10.3%) of these patients presented with no MR, 1173 (68.2%) with mild MR (grade 1), 171 (9.9%) with moderate MR (grade 2) and 9 (0.5%) with severe MR (grade 3). Patients with moderate to severe MR showed significantly higher