those without LBBB (EF Difference (follow-up - baseline, %): LBBB: 0 [-5, 5] vs. no LBBB: 0 [0, 10], p=0.003).

CONCLUSIONS New LBBB is not uncommon after TAVR with higher incidence observed in patients receiving self-expanding Medtronic CoreValve system. Although a small proportion of patients progressed to CHB, the majority did not require PPM implantation. New LBBB was associated with worse left ventricular EF on 30-day follow-up.

CATEGORIES STRUCTURAL: Valvular Disease: Aortic

KEYWORDS LBBB, Pacemaker implantation, Transcatheter aortic valve replacement

TCT-659
Impact of Balloon-Expandable Transcatheter Aortic Valve Size on Stent and Leaflet Stresses
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BACKGROUND As transcatheter aortic valve replacement (TAVR) is being considered for surgical patients of lower risk and younger age, concerns remain regarding TAVR durability. From a valve design perspective, durability decreases with increased stresses on the stent and leaflets. Patient annulus sizes can fall within the grey zone between two TAVR sizes, but the impact of valve size on TAVR stresses is unknown. The goal of this study was to determine and compare stent and leaflet stresses of 2 TAVR sizes using exact fully expanded geometry.

METHODS Edwards Sapien XT 26mm and 29mm (Edwards Life-sciences, Inc) underwent micro-computed tomography scanning. Radiologic images were used to create precise models including stent, leaflets, dacron, and suture connections. Finite element meshes were generated and simulations were performed using ABAQUS software to load both TAVR sizes to 80mmHg then 120mmHg. Analyses of 26 and 29mm Sapien XT were compared to determine differences in stent and leaflet stresses at 120mmHg.

RESULTS For TAVR stents, peak first principal stresses on 26mm and 29mm Sapien XT were 68.1MPa and 62.0MPa, respectively (Figure 1); while peak second principal stresses were -67.7MPa and -61.2MPa, respectively. For TAVR leaflets, peak first principal stresses were -5.05MPa and -3.8MPa, respectively.

CONCLUSIONS Finite element analyses demonstrated that for both stents and leaflets, stresses were greater in the 26mm Edwards Sapien XT. Our results suggest the smaller TAVR size had increased stresses which may impact durability. Comparison with similarly sized surgical bioprostheses may lead to further insight into relative TAVR durability.

CATEGORIES STRUCTURAL: Valvular Disease: Aortic

KEYWORDS Computational Modeling, Computed tomography, Transcatheter aortic valve replacement

TCT-660
A Prospective Study of the Contemporary Role and Outcomes of Balloon Aortic Valvuloplasty: One Year Outcomes
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BACKGROUND Evaluation for transcatheter aortic valve replacement (TAVR) has brought a renewed interest in the role for balloon aortic valvuloplasty (BAV) in the management of patients with severe aortic stenosis (AS). The current study is the first prospective study of BAV analyzed by intent-to-treat.

METHODS This is a prospective, two center study of 100 high-risk patients undergoing BAV for management of severe AS. Before the procedure, physicians assigned intent of BAV as 1) bridge to decision (BTD); 2) therapeutic bridge to planned therapy (BTX); or 3) palliation (PAL). Patients in the BTD arm underwent clinical assessment at 30 days in the valve clinic to determine eligibility for definitive valve therapy. Baseline demographics were recorded as per the Society of Thoracic Surgeons (STS) definitions. All patients were followed to 1 year, with outcomes measured including procedural complications, 30-day and 1-year mortality, and definitive valve therapy.

RESULTS At baseline, the patients had a mean (±standard deviation) age of 80.6 (±9.6) years, STS predicted risk of mortality of 11.4% (±7.1%), and there were 91 (91.0%) patients with a Class III or IV New York Heart Association Congestive Heart Failure. Intent and treatment outcomes in the 100 patients enrolled are shown in the figure: 73 BTD; 23 BTX; and 4 PAL. 30-day mortality for all patients was 6/100 (6.0%). One of these patients was in the palliative cohort and 5 were in the BTD cohort and were not referred for definitive valve replacement. Other complications included cerebrovascular accident in 2/100 (2.0%) and acute renal injury in 4/100 (4.0%), 1-year mortality for patients who received definitive valve therapy was 6/54 (11.1%), with no valve was 32/42 (76.2%), and 3/4 (75.0%) for palliation. Of the patients in the BTD arm referred for definitive valve