replacement in high operative risk patients. The currently most widely used valves are Edwards SAPIEN XT and Medtronic CoreValve.

Methods: We analyzed data of 424 consecutive patients undergoing transfemoral TAVI at the Tel Aviv Medical Center, and performed a comparison between the two bioprostheses regarding pre-procedural patient’s characteristics, procedural data and 1 year post-procedural clinical outcome.

Results: CoreValve and the Edwards SAPIEN prostheses were implanted in 320 and 104 patients, respectively. CoreValve patients were older (83.5± 8.1 vs. 71±7 years, p=0.026), with lower estimated glomerular filtration rate (60±18 vs. 66.1±20 mL/min/1.73m2, p=0.009), higher EuroSCORE (25.4± 14 vs. 20± 13 %, p=0.015) and a smaller pre-procedural aortic valve area (0.69± 0.18 vs. 0.74± 0.19 cm2, p=0.035).

No other differences regarding patient’s characteristics were observed. Compared to TAVI with Edwards prosthesis, CoreValve procedures had shorter fluoroscopy time (16.4± 5.6 vs. 17.5±5 minutes, p=0.02), higher patient’s cumulative radiation dose (1477±755 vs. 1197±591 Gy, p<0.001), and less contrast media (143±40 vs. 157±40 mL, p=0.001). Device success was similar among the two valves (95 vs. 96%, p=0.57). Mortality (in hospital and after 1 year) was similar among the valves implanted (2.5 vs. 2.9%, p=0.83, and 15.7 vs. 19%, p=0.54). CoreValve patients had higher rates of permanent pacemaker implantation (24.4 vs. 11.5%, p=0.005), and post-procedural blood transfusion (40 vs. 25%, p=0.014). No difference was observed regarding vascular complication (18 vs. 21%, p=0.49, stroke (1.3 vs. 1.9%, p=0.61), moderate or severe paravalvular leak (2 vs. 2.6%, p=0.766), or acute kidney injury of any stage (13.8 vs. 19.6%, p=0.15).

Conclusions: Despite differences in patient’s and procedural characteristics between CoreValve and Edwards Sapiens TAVI, device success and mortality rates were similar.

TCT-763
Clinical Profiles and Outcomes of Nonagenarians Undergoing Transcatheter Aortic Valve Replacement

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Abstract Withdrawn

Impact of TAVI On Primary Hemostasis, Von Willebrand Factor And Heyde’s Syndrome: A Prospective Monocenter Study

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Aortic valve stenosis (AVS) can be complicated by bleeding associated with acquired type 2A von Willebrand syndrome. The association of AVS and gastrointestinal bleeding from angiodyplasia is defined as Heyde’s syndrome. We sought to evaluate the impact of TAVI on primary hemostasis disorders and to assess its effectiveness to treat Heyde’s syndrome.

Methods: We prospectively enrolled 49 consecutive patients with severe AVS addressed for TAVI in our institution. Biological primary hemostasis parameters were assessed at baseline and one week after the procedure.

Results: We identified 1 (2%) patient with Heyde’s syndrome, and 11 patients (22.4%) with a ratio vWF:CBI/vWF:Ag under 0.7, compatible with type 2A vWF syndrome. At baseline, a significant link between vWF abnormalities and the severity of AVS was evidenced: mean aortic transcvalvar gradient was negatively correlated with the levels of vWF antigen (vWF:Ag) (r=0.09, p<0.02), vWF ristocetin cofactor activity (vWF:RCO) (r=-0.40, p=0.006) and vWF collagen-binding activity (vWF:CBI) (r=-0.41, p=0.005). One week after the procedure, a significant increase of vWF:Ag, vWF:RCO, and vWF:CBI was evidenced in the whole cohort (respectively 3.32± 2.29 IU/mL, p=0.001; 2.98 vs 1.86 IU/mL, p<0.001; 3.16 vs 2.16 IU/mL, p<0.001). Patients with pre-TAVI vWF abnormalities consistent with a type 2A vWF syndrome preferentially improved their vWF function with respect to patients with a normal ratio (relative increase of vWF:CBI of 63.8% vs 3.5%).

Conclusions: Primary hemostasis parameters involving vWF are improved after TAVI, especially in patients with preexisting abnormalities consistent with acquired type 2A von Willebrand syndrome. Moreover, our observations, although limited to a small single-center study, suggest that Heyde’s syndrome can be cured by TAVI.

TCT-766
Prevalence and prognostic significance of early left ventricular reverse remodeling in high-risk patients with severe aortic stenosis undergoing transcatheter aortic valve implantation

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Background: We sought to identify the prevalence and prognostic impact of left ventricular reverse remodeling (LVRR) in a non-selected high-risk patient population with severe aortic stenosis undergoing transcatheter aortic valve implantation (TAVI).

Methods: Two hundred thirty-nine consecutive patients undergoing TAVI were enrolled in our retrospective analysis between November 2008 and December 2013. LVRR was defined as a left ventricular ejection fraction increase of > 10 % or a left ventricular ejection fraction of ≥ 50%, a decrease in indexed left ventricular end-diastolic diameter of ≥ 10% or indexed left ventricular end-diastolic diameter of > 55 mm/m2, and an interventricular septum thickness ≤ 11 mm at 72±58 days.

Results: LVRR was found in 44 patients (18%). When added to a prognostic baseline model including age, diabetes, baseline left ventricular ejection fraction and aortic valve area, emerged as independent predictor of long-term (1.7±1.4 years) mortality (HR 2.08, 95%CI 1.3-3.2, p=0.002), along with diabetes (HR 4.6, 95%CI 1.5-13.7, p=0.006).

Conclusions: Early LVRR is a predictor of long-term clinical outcome.

TCT-767
Treatment of Bio-Prosthetic Valve Deterioration Using The Valve-in-Valve Technique

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Background: Trans-catheter heart valve implantation is a therapeutic option for the treatment of patients with bioprosthetic valve failure. We aim to describe our experience using this technique in the treatment of degenerated mitral, aortic and tricuspid bioprosthetic valves.

Adverse Events Following TAVR

<table>
<thead>
<tr>
<th>InHospital</th>
<th>InHospital</th>
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<tbody>
<tr>
<td>VASC-2 major vascular complication</td>
<td>10.6%</td>
</tr>
<tr>
<td>VARC-2 major bleed</td>
<td>2.7%</td>
</tr>
<tr>
<td>Ischemic stroke</td>
<td>2.7%</td>
</tr>
<tr>
<td>Pacemaker implantation</td>
<td>5.5%</td>
</tr>
<tr>
<td>Worsening heart failure</td>
<td>30.1%</td>
</tr>
<tr>
<td>Moderate or severe aortic insufficiency</td>
<td>1.6%</td>
</tr>
<tr>
<td>Death</td>
<td>6.8%</td>
</tr>
<tr>
<td>Death at 30 days</td>
<td>11.0%</td>
</tr>
<tr>
<td>Death at 1 year</td>
<td>20.0%</td>
</tr>
</tbody>
</table>

Conclusions: Despite high rates of 30-day mortality, survival at 1-year is similar to patients a decade younger, likely the result of a favorable pre-procedural health history in this cohort. Thus, TAVR should not be withheld from nonagenarians.

TCT-764
Abstract Withdrawn
Methods: 33 patients underwent a valve-in-valve procedure, with the implantation of 34 percutaneous implantable valves; one patient underwent the implantation of both a mitral and an aortic valve device during the same procedure. Both, the Edwards-Sapien and the CoreValve devices were used. Outcomes were evaluated using the VARC 2 criteria.

Results: Valve-in-Valve in the aortic position (N=23): mean age of patients was 81.4 ± 5.9 years. The CoreValve and the Edwards-Sapien valve devices were used in 91.3% and 8.7% of patients, respectively. The CoreValve device was implanted via the trans-axillar route in 3 cases and via trans-femoral route in 18 cases. The trans-apical route was used in both Edwards-Sapien implantations. Procedural success was achieved in 100% of cases. One month and one year survival rates were 100% and 90%; respectively. At one month follow up, 95.7% of patients were in NYHA II. Valve-in-Valve in the mitral position (N=10): mean age of patients was 73.6 ± 15 years. All the procedures were performed with the Edwards-Sapien device via the trans-apical route. Procedural success was achieved in 100% of cases. One month and one year survival rates were 90% and 80%; respectively. At one month follow up, 100% of patients were in NYHA II. Valve-in-Valve in the tricuspid position (N=1): A 78 year-old patient NYHA IV, was treated with the successful trans-femoral venous implantation of an Edwards-Sapien 29mm valve within a severely stenotic bioprosthetic Handcock 31mm valve. The procedure went uneventful. At one month follow the patient was in NYHA II. Pre- and post- peak and mean trans-valvular gradients were 26/16 and 6/3 mmHg, respectively.

Conclusions: In our experience, the Valve-in-Valve procedure for the treatment of symptomatic stenosis has shown excellent early and mid-term outcomes. The Edwards-Sapien valve was effective in the treatment of patients with severe aortic stenosis and represents an important alternative to surgical aortic valve replacement (TAVR).

Background: Transcatheter aortic valve replacement (TAVR) requires optimal sizing of the transcatheter heart valve (THV). Undersizing may result in paravalvular regurgitation (PVR), while excessive oversizing may result in annular injury. Some patients have a borderline annular size that fits between two available THV sizes. One strategy is intentional underexpansion of an oversized THV.

Methods: Thirty-one patients underwent TAVR with an intentionally undersized Sapien XT or Sapien T3 THV (Edwards Lifesciences Inc., CA, USA). THVs were intentionally undersized when there was >20% computed tomography (CT) annular area oversizing or >10% area oversizing with adverse root features. The deployment balloon was filled with 5-10% less volume than the manufacturer’s recommended volume. Transcatheter echocardiography (TTE) and cardiac CT were performed in all patients immediately post-implant. At 1 year, 31/31 patients (100%) underwent repeat TTE and 22/31 (71%) underwent repeat CT.

Results: There was no significant change in THV hemodynamics or stent size at 1 year. Mean trans-aortic gradient was 12.1±4 mmHg immediately post-implant and 12.1±6 mmHg at 1 year (p=0.3). Mean aortic valve area was 1.7±0.3 cm² immediately post-implant and 1.6±0.5 cm² at 1 year (p=0.4). PVR was mild or less in 31/31 patients (100%) immediately post-implant and in 30/31 patients (97%) at 1 year. One patient had moderate PVR at 1 year. CT derived stent frame area immediately post-implant and at 1 year was 4.9±0.9 cm² and 5.1±0.9 cm² respectively at stent inflow (p=0.05), 5.1±1.0 cm² and 5.2±1.0 cm² respectively at mid stent (p=0.5), 5.3±0.9 cm² and 5.2±0.9 respectively at stent outflow (p=0.3). There was no significant difference in stent frame short and long axis immediately post-implant versus 1 year, either at the stent inflow, mid stent or stent outflow (all p-values >0.05).

Conclusions: There was no significant change in THV hemodynamic function and stent size expansion 1 year following TAVR. Undersizing may result in paravalvular balloon-expandable THV. In selected patients in whom excessive oversizing is of concern, a strategy of intentional underexpansion may reduce the risk of annular injury without compromising valve performance.