In summary, 16.4% of patients (group 1+3) were formally not treatable using TAVI. **Conclusion:** The majority of patients with AVS scheduled for TAVI show suitable AAS for current devices. Among a substantial number of patients are not eligible due to oversized aortic annulus diameters. Consequently, the development of larger prostheses is crucial to embrace this not negligible minority of patients.

**TCT-761**

**Prognostic Impact of Permanent Pacemaker Implantation Among Patients With Severe Aortic Stenosis Undergoing Transcatheter Aortic Valve Implantation**

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**Background:** The occurrence of conduction abnormalities requiring the implantation of a permanent pacemaker (PPM) in patients undergoing transcatheter aortic valve implantation (TAVI) is not rare, with an incidence ranging between 5-30% in published series. To investigate the impact of PPM on prognosis, we compared clinical outcomes of patients with severe aortic valve stenosis undergoing TAVI in the following three groups: (1) patients with PPM prior to TAVI, (2) patients with TAVI-related PPM and (3) patients without PPM before and after TAVI.

**Methods:** A total of 351 consecutive patients (mean age 82.1 ± 6.7 years, mean log EuroScore 24.2 ± 15.4) with symptomatic aortic valve stenosis (mean gradient 44.6 ± 16.3 mmHg) undergoing TAVI with use of the 18F Medtronic CoreValve prosthesis (n=293, 83.5%; transfemoral: 288, subclavian: 5) or the Edwards Sapien prosthesis (n=58, 16.5%; transfemoral: 24, transapical: 34) were prospectively followed in this two-center observational study. A total of 47 patients (13.4%) had a PPM prior to TAVI (group 1), 98 patients (27.9%) received a PPM during the per-procedural period (group 2) and 200 patients required no PPM during follow-up (group 3).

The primary endpoint of the study was mortality at one year follow-up. Secondary endpoints included in-hospital mortality as well as rates of stroke and myocardial infarction in-hospital and at one year.

**Results:** Device success was 97.4% without differences between the three groups. In-hospital and one-year follow-up was available in 100% of alive patients. Overall in-hospital and one year mortality were 4.6% (16/351) and 22.8% (80/351), respectively, without significant differences among the different study groups (see table). Rates of in-hospital stroke, infection and access site complication were 2.6%, 0.9%, 13.7%. Detailed clinical follow-up will be presented.

**Conclusion:** In this observational study, patients with severe aortic stenosis undergoing TAVI had a similar survival independent of the need of PPM implantation, which underlines the benign nature of this complication.

**TCT-762**

**Predictive Factors and Prognostic Value of Periprocedural Myocardial Injury During Transcatheter Aortic Valve Implantation**

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**Background:** Periprocedural myocardial injury (PMI) is a common complication during cardiac surgery and percutaneous coronary intervention and is an important predictor for postprocedural cardiovascular morbidity and mortality. Very few data have been reported about the occurrence of myocardial damage associated with transcatheter aortic valve implantation (TAVI). Therefore, our purpose was to investigate the incidence, the predictive factors and clinical consequences of PMI during TAVI.

**Methods:** In a prospective observational single-centre study, we included 117 patients (age 81±8 years, 46 male), who had undergone a TAVI with the Medtronic-CoreValve® bioprosthesis. Serum CK-MB and cTnT levels were measured pre- and during TA-A VI.

A VCS prior to TA-A VI might serve as an additional tool to reconsider the TA-A VI indication and valve size to reduce the risk of paravalvular leaks.

**Results:** In-hospital mortality was 14.2%. Independent predictive factors identified for 30-day mortality were PMI (OR: 10.89; 95%CI: 2.49-47.53), increased of CK-MB and/or cTnT level above 5 times the upper reference limit, as well as a lower estimated left ventricular ejection fraction (gr/m2, OR: 1.02; 95%CI: 1.00-1.03).

**Conclusion:** Following transcatheter aortic valve implantation, serum levels of both CK-MB and cTnT increase, which reflects the occurrence of periprocedural myocardial injury. A longer procedural duration, the absence of beta-blocker use, peripheral arterial disease and a deeper prosthesis insertion are associated with PMI. Together with preprocedural hospitalization and left ventricular mass, PMI was predictive of postprocedural cardiovascular morbidity and mortality. Very few data have been reported about the occurrence of myocardial damage associated with transcatheter aortic valve implantation (TAVI).

**TCT-763**

**Aortic valve calcium scoring (AVCS) is a predictor of significant paravalvular aortic insufficiency in transapical aortic valve implantation**

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**Background:** Transapical aortic valve implantation (TA-AVI) has evolved as a routine tool for selected high-risk patients. However, paravalvular leaks >1+ remain an unsolved issue using current generation of transcatheter valve devices. The aim was to study the impact of aortic valve calcification on paravalvular leaks and outcome using the Edwards SAPIEN™ prosthesis.

**Methods:** 120 consecutive patients (out of 307 TA-AVIs) with preoperative computed tomography, age 82.6±6.2 years, 75.0% female, were included. Implanted prosthetic valve sizes were 23 mm (n=31), and 26 mm (n=89), respectively. Mean logistic EuroSCORE was 30.1±15.5 and mean STS-Score 12.8±7.9. ECG-gated cardiac CT allowed to quantify the amount of calcification of aortic valve leaflets using a scoring analogous to the Agatston calcium scoring of coronary arteries (AVCS). Paravalvular leaks were assessed intraoperatively by echocardiography and angiography.

**Results:** All valves were implanted successfully. Mean AVCS in patients without paravalvular leaks (n=66) was 2704±1510, with mild paravalvular leaks (n=31) 3804±2739 (p=0.05) and with moderate paravalvular leaks (n=4) 7387±1044 (p=0.002). There was a significant correlation between AVCS and paravalvular leaks (r=0.334; p=0.001) indicating, of note, only a limited degree of linear dependence. No correlation was found to 30-day mortality, postoperative pacemaker-implantation and stroke-rate (r=0.040, p=0.671; r=0.117, p=0.232 and r=-0.025, p=0.792). Overall 30-day mortality was 14.2%.

**Conclusion:** The AVCS identifies patients at risk for a relevant paravalvular leak. AVCS prior to TA-AVI might serve as an additional tool to reconsider the TA-AVI indication and valve size to reduce the risk of paravalvular leaks.