Background: Transcatheter aortic valve implantation is established as a standard therapy in the treatment of the severe aortic stenosis. Compared with surgical aortic valve replacement, transcatheter aortic valve implantation (TAVI) is associated with a higher risk of developing a new conduction disorder that necessitates permanent pacemaker implantation (PM). The most frequently observed conduction disorder is left bundle branch block (LBBB). The aim of this study was to establish the predicting factors of the mid-term all-cause mortality, highlighting the importance of a new-onset LBBB.

Methods: This study included a total of 634 patients who underwent TAVI with the Medtronic CoreValve (n=112) and the Edwards SAPIEN Valve (n=521) between May 2008 and April 2012. The effect of demographic parameters and treatment modes on overall survival were assessed using regression analysis models.

Results: Multivariate regression analyses revealed, that persistent new-onset LBBB was an independent predictor of all-cause mortality in the one-year follow up (hazard ratio [HR] 1.77, 95% confidence interval [CI]: 1.16-2.66; p = 0.008). Other independent predictors were: renal failure (HR: 2.96, 95% CI: 1.59-5.50; p = 0.001), a left ventricular ejection fraction of < 40% (HR: 1.96, 95% CI: 1.12-3.45; p = 0.019), and acute myocardial infarction within 90 days prior to TAVI (HR: 1.81, 95% CI: 1.05-3.11; p = 0.032).

Conclusions: This study demonstrated that persistent new-onset LBBB was an independent predictor of all-cause mortality at the end of the first year, along with renal failure, poor left ventricular ejection fraction and acute myocardial infarction within 90 days prior to TAVI.

<table>
<thead>
<tr>
<th>Gender</th>
<th>HR</th>
<th>Lower</th>
<th>Upper</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>1.06</td>
<td>0.68</td>
<td>1.67</td>
<td>0.789</td>
</tr>
<tr>
<td>Female</td>
<td>1.96</td>
<td>1.12</td>
<td>3.45</td>
<td>0.019</td>
</tr>
</tbody>
</table>

| COPD   | 1.24 | 0.68 | 2.35 | 0.479 |
|________|______|______|______|______|
| Acute MI (<90 days,%) | 1.87 | 1.05 | 3.10 | 0.032 |
| Critical perioperative State | 2.45 | 0.87 | 7.12 | 0.087 |
| Pulmonary Hypertension | 1.52 | 0.96 | 2.40 | 0.073 |
| Renal failure (Creatinine >2.2 mg/dl, %) | 2.98 | 1.59 | 5.50 | 0.001 |
| Coronary artery disease | 1.04 | 0.65 | 1.64 | 0.868 |
| Previous CABG (%) | 1.03 | 0.56 | 1.87 | 0.922 |
| Previous valve surgery | 2.29 | 0.98 | 5.36 | 0.055 |
| Diabetes | 1.26 | 0.84 | 1.91 | 0.254 |
| Valve type (CoreValve/Sapien) | 1.28 | 0.78 | 2.09 | 0.314 |
| New-onset LBBB | 1.76 | 1.16 | 2.68 | 0.008 |

Conclusions: TAVI leads to an improvement in CVR, which may pathophysiologically contribute to attenuation of ischemic symptoms, and a longer RP duration appears to be associated with myocardial injury.

TCT-718

Large Multicenter Assessment of SAPIEN 3 Transcatheter Aortic Valve Implantation: Optimization of Clinical Outcomes with Precise Device Positioning

Danny Dvir1, Thomas Walther2, David A. Wood3, Mathew S. Santos4, Riccardo Cocchieri, Jan Baan jr., Won-Keun Kim5, John Webb6

1St Paul’s Hospital, Vancouver, Canada, Vancouver, Canada, 2Kerckhoff Heart Center, Bad Nauheim, Germany, 3University of British Columbia, Vancouver, Canada, 4Escola Paulista de Medicina - UNIFESP, Sao Paulo, Sao Paulo, 5Academic Medical Center, University of Amsterdam, Amsterdam, Noord-Holland, 6AMC Medical Center, Amsterdam, Amsterdam, Netherlands

Background: The SAPIEN 3 transcatheter heart valve (THV) and its low profile delivery system (Edwards Lifesciences, CA) incorporate features intended to facilitate accurate positioning and improve paravalvular sealing.

Methods: A multicenter evaluation of patients implanted with SAPIEN 3 valve was utilized for this specific analysis. Optimal pre implantation device position was defined as position of the lower border of the central marker at the lower border of the aortic cusps with ± 1.5mm (i.e. ± half central marker length). Implantation images were evaluated by a dedicated core lab blinded to clinical results.

Results: A total of 143 patients implanted with SAPIEN 3 were included in the study: 56.4% male, age 82.1±7.7 years, STS score 12.1±4.9%, baseline aortic valve area 1.5mm (i.e. half central marker length). Implantation images were evaluated by a dedicated core lab blinded to clinical results.

Conclusions: This multicenter evaluation suggests that SAPIEN 3 implantation is associated with excellent results. Clinical outcomes are further improved with optimal device positioning, according to study definition.

TCT-719

Mid-term Survival and Predicting Factors of All-cause Mortality in Patients After Transcatheter Aortic Valve Replacement: The Role of New-onset Left Bundle Branch Block

Panagiotis Tzamalis1, Holger Schroefel2, Peter Bramlage1, Armin Loik3, Herbert Postval1, Rainer Wondeesach1, Gerhard Schymik1

1Municipal Hospital Karlsruhe, Karlsruhe, Germany, 2Cardiac Surgery Karlsruhe, Karlsruhe, Germany, 3Institut for Pharmacology and preventive Medicine, Mahlow, Mahlow, Brandenburg

Conclusions: TAVI leads to an improvement in CVR, which may pathophysiologically contribute to attenuation of ischemic symptoms, and a longer RP duration appears to be associated with myocardial injury.
The Cost of TAVR: Association Between Length of Stay and the Cost of
without balloon predilation is feasible and safe in the majority of patients, limitations
Transfemoral implantation of the Edwards SAPIEN 3 aortic valve
Conclusions: Baseline severe impairment of LVEF is not a predictor of increased short-term and mid-term mortality after TAVI. Among patients with severe impairment of left ventricular function, those with low transvalvular gradient deserve a careful evaluation because of numerically higher mortality rates. Selected patients with severe impairment of left ventricular function should not be denied TAVI.

TCT-722
Transfemoral Implantation of the balloon-expandable Edwards SAPIEN 3 Aortic Valve without Predilation
Klaudija Bijuklic1, Lorenz Hansen1, Korff Kruse1, Julian Witt2, Wulf Neckel1, Friedrich-Christian Rieß3, Joachim Schofer4
1Medical Care Center, Hamburg, Germany, 2Albertinen Heart Center, Hamburg, Germany, 3Medical Care Center Prof Mathey, Prof Schofer, Hamburg University Cardiovascular Center, Hamburg, Germany

Background: Aortic valve implantation without balloon predilation may facilitate the procedure, reduce rapid pacing duration and may impact the stroke rate. For the self-expandable CoreValve this strategy has been shown to be feasible and safe in small studies. Whether direct aortic valve implantation is applicable to the balloon-expandable Edwards SAPIEN 3 valve is unknown, is applicable to the balloon-expandable Edwards SAPIEN 3 valve is unknown. The aim of the present study was to evaluate the feasibility and safety of transfemoral implantation of the Edwards SAPIEN 3 aortic valve without balloon predilation.

Methods: Forty one consecutive patients with severe symptomatic aortic stenosis and high surgical risk were prospectively enrolled to receive the Edwards SAPIEN 3 aortic valve without predilation.

Results: Mean age of the patients was 83.2 ± 5.9 years, 58 % were male. Successful implantation without predilation was achieved in 95.1 % of patients. In 2 patients (4.8 %) the prosthesis could not cross the native aortic valve due to severe asymmetric calcification and an aortic valve orifice area (AOA) of 0.4 and 0.5 cm2, respectively. After predilation was performed from the contralateral site, the valve could be successfully implanted in both patients. Post-dilation was performed in one patient due to moderate aortic regurgitation. The Cardiovascular 30 day MACCE rate was 2.4 %, total mortality was 9.7 %, reasons for death were pneumonia (1pt), urosepsis (1pt), and subarachnoidal bleeding (1pt).

Conclusions: Transfemoral implantation of the Edwards SAPIEN 3 aortic valve without balloon predilation is feasible and safe in the majority of patients, limitations are severe asymmetric valve calcification in combination with AOA of 0.5 cm2 or less.

TCT-723
The Cost of TAVR: Association Between Length of Stay and the Cost of Transfemoral Transcatheter Aortic Valve Replacement in Medicare Patients
Christopher U. Meduri1, Seth Clancy2, Brian J. Potter3
1Piedmont Heart Institute, Atlanta, GA, 2Elders Lifesciences, Irvine, CA, 3University of Montreal, Montreal, Quebec

Background: Reducing length of stay (LoS) in selected TAVR patients is both safe and feasible, but its role in mitigating healthcare costs has not been fully evaluated.

Methods: Using the Medicare Provider Analysis and Review File, we retrospectively analyzed 4,464 Medicare patients who underwent transfemoral-TAVR and were discharged alive in fiscal year 2012. Hospitalization cost and discharge disposition were assessed for 5 LoS cohorts (Table 1). Multivariate regression modeling, based on patient demographics, comorbidities, and complications, was used to derive an adjusted mean cost for each cohort. The 2013 MedPAR files, available shortly, will also be analyzed and incorporated prior to presentation.

Results: The unadjusted mean hospitalization cost of transfemoral-TAVR cases was $61,130 and the mean LoS was 7.7 days. Compared to patients with a LoS of 6-7 days, short-stay patients (discharged on day 1-3) had an unadjusted cost difference of -$8,216 (p < 0.001) and an adjusted difference of -$6,036 (p < 0.001). Importantly, patients discharged early less likely required assistance at discharge (65% vs 22%, p < 0.001). Temporal trends between 2012 and 2013 will also be analyzed.

Conclusions: Early discharge in selected patients can have meaningful cost savings at a program level. Additionally, patients discharged early require less post-acute care services than patients with longer stays, alleviating concerns that early discharge of Medicare patients may be associated with higher societal costs. Efforts aimed at optimized patient selection and peri-TAVR care with a view to reduce LoS are warranted.

TCT-724
Procedural But Not The Periprocedural High-sensitive Troponin T (hsTNT) Levels Predict Outcome In Patients Undergoing Transcatheter Aortic Valve Implantation (TAVI)
Wiebke M. Köhler1, Sandra Freitag-Wolf2, Doreen Brethem1, Rainer Pettina3, Georg Lutter1, Norbert Frey1, Dirk Frank1
1Dept. of Cardiology and Angiology, UKSH, Kiel, Germany, 2Institute of Medical Informatics and Statistics, UKSH, Kiel, Germany, 3Dept. of Cardiac and Vascular Surgery, UKSH, Kiel, Germany

Background: TAVI has gained significant relevance in the treatment of inoperable or high-risk patients with symptomatic aortic stenosis. Several risk scores have been proposed to estimate the perioperative and long-term risk of patients undergoing TAVI. However, assessment of individual risk remains difficult. We thus aimed to analyze whether biomarkers may improve risk stratification.

Methods: We prospectively included 267 patients undergoing TAVI (using balloon-expandable Edwards Sapien XT prostheses) at our institution from Feb. 2011 until Dec. 2013. n = 79 patients. Baseline hsTNT levels were available for complete follow up. 56.2% were females, mean age was 81.9 years (± 6.8 years), 57.3% were treated via transfemoral, 28.1% transapical, 14.6% transaortic access. Biomarkers (hsTNT and NTproBNP) as well as other parameters were measured a day before TAVI, 3 and 7 days post-procedure. 11.2% had severely reduced EF, and mean log. Eносcose (ES) was 26.3% (± 17%). Median follow-up was 262 days (IQR 77-501d), the primary endpoint was survival time; a total of 74 deaths (27.7%) occurred. 30d mortality was 6.0%. All possible prognostic factors were analyzed by Cox regression analysis with backward selection based on the likelihood ratio criteria.

Results: Median precoaerual hsTNT values were 28.4 pg/ml (IQR 16.2-46.1 pg/ml). From all potential prognostic factors, precoaerual hsTNT (HR =2.67 for upper quartile vs. quartiles 1-3, CI 1.63-4.38, p < 0.001) and the log. ES (HR =1.98, CI 1.2-3.27 p=0.006) emerged as independent prognostic parameters for adverse outcome. In contrast, unimpaired renal function appeared to be protective (HR=0.48; CI 0.21-0.96, p=0.047). In addition, we also tested whether the VARC-2 cut-off for myocardial damage (hsTNT peak value exceeding 15 × the upper reference limit, ≥210 pg/ml) was of prognostic relevance. At 72 h post-TAVI, n=87 pts (37.5%) had >210 pg/ml hsTNT, however these pts did not reveal a significant difference in survival compared to pts with a hsTNT <210 pg/ml at this timepoint.

Conclusions: In selected precoaerual hsTNT is an independent risk predictor of all-cause death while precoaerual hsTNT elevation failed to exhibit prognostic relevance.

TCT-725
Impact of Mitral Regurgitation on Clinical Outcomes After Transcatheter Aortic Valve Implantation: Results from Asian TAVI Multicenter Registry
Sang-Hun Yoon1, Jung-Min Ahn2, Michael Kang-Yin Lee3, Edgar L. Tay4, Young-Hak Kim1, Choel Whan Lee2, Jung-Young Lee2, Dong Hyun Yang2, Joon-Won Kang1, Hyo In Cho3, Pil Hyung Lee2, Jae Hyung Roh2, Minok Chang2, Hyun Woo Park1, Soo-Jin Kang4, Duk-Woo Park2, Seung-Whan Lee2, Jung-Min Song1, Seong-Whook Park2, Seung-Jung Park4
1Asan Medical Center, Seoul, Korea, Republic of, 2Queen Elizabeth Hospital, Hongkong, China, 3National University Heart Center, Singapore, Singapore, 4Asan Medical Center, Seoul, Korea, Republic of

Background: The impact of preoperative mitral regurgitation on clinical outcomes of patients undergoing TAVI is controversial. This study is to assess the contribution of mitral regurgitation to clinical outcomes after TAVI.

Methods: Data from Asian TAVI multicenter registry were pooled and analyzed. In total, 185 patients with severe symptomatic aortic stenosis undergoing TAVI were included. Median patients (8.6%) had preoperative mitral regurgitation ≥ moderate and the study patients were divided into 2 groups according to preoperative mitral regurgitation: group I (mitral regurgitation ≤ mild) and group II (≥ moderate).

Results: Baseline LVEF and aortic valve area were smaller in Group II, but there were no difference in other demographics including age, sex, diabetes, hypertension, prevalence of previous CABG, peripheral artery disease, mean pressure gradient and Logistic EuroSCORE. There was no difference in device success rate (79.7% vs. 81.3%; p > 0.99), however 30-day mortality was higher in group II (30-day mortality: 1.5% vs. 18.8%; Relative Risk. 12.53; 95% confidence interval [CI], 2.31 – 98.84;