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TCT-885

Transcatheter Aortic Valve Implantation with Medtronic CoreValve® Versus Medtronic CoreValve® with Accutrak Delivery System

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Background: The Medtronic CoreValve® with Accutrak delivery system (MCVAT) (Medtronic Inc., Minneapolis, MN) was introduced to aid deliverability. The aim was to compare short-term outcomes after transcatheter aortic valve implantation (TAVI) with both the original Medtronic CoreValve® delivery system (MCV) vs. the MCVAT.
Methods: All consecutive patients with native valve aortic stenosis undergoing transfemoral TAVI in our center from November 2007-May 2012 with either MCV or MCVAT were included. The 31 mm MCVAT became available in September 2011. Study objectives were the Valve Academic Research Consortium (VARC) outcomes.
Results: In total, 125 TAVI cases were included: 56% (n=70) MCV and 44% (n=55) MCVAT. There was a trend for patients treated with MCV to be older (79.7±6.7 vs. 77.5±6.9 years; p=0.072), but no other differences in baseline characteristics. Logistic EuroSCORE was respectively 24.6±16.5% in MCV vs. 24.0±15.6% in MCVAT (p=0.569) and STS score 9.3±9.6% vs. 8.7±8.2% (p=0.713). At 30 days, there were no differences between MCV and MCVAT respectively in all-cause (7.1% vs. 5.6%; p=0.721) or cardiovascular mortality (2.9% vs. 5.6%; p=0.449). In addition, myocardial infarction (2.9% vs. 0%; p=0.206) and stroke (0 vs. 1.8%; p=0.257) were similar. However, there were improvements in major vascular complications (17.1% vs. 3.6%; p=0.017), life-threatening bleeding (32.9% vs. 16.4%; p=0.036) and acute kidney injury (44.3% vs. 20.4%; p=0.005), leading to an improved combined safety endpoint (40.0% vs. 22.6%; p=0.042). Interestingly, there was an increase in arrhythmia (18.6% vs. 49.1%; p<0.001) and permanent pacemaker implantation (21.4% vs. 41.8%; p=0.014) in the MCVAT group. There were no differences in the event of embolization (7.1% vs. 12.7%; p=0.293) or moderate-severe aortic regurgitation (5.7% vs. 5.7%; p=0.990). Furthermore, there was no difference in device success (90.0% vs. 85.5%; 0.438).
Conclusions: The MCVAT has improved safety endpoints compared to MCV, probably due to the learning curve. However, there is a higher rate of arrhythmia and PPM in this group, possibly due to the introduction of the 31 mm valve. Longer term follow-up and larger patient numbers are required.

TCT-886

Predictors of Vascular complications in patients undergoing Balloon Aortic Valvuloplasty

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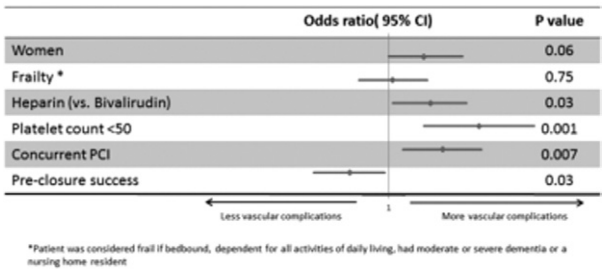
Background: Balloon aortic valvuloplasty (BAV) is a palliative treatment for severe aortic stenosis (AS) that is increasingly performed as a bridge to transcatheter aortic valve replacement. We investigated the independent predictors of vascular complications in AS patients who underwent BAV.
Methods: We performed a retrospective review of consecutive patients who undergoing non-emergent, retrograde BAV at two high-volume US centers. We analyzed baseline and procedural characteristics as well as in-hospital outcomes according to the presence or absence of vascular complications, as classified by the Vascular Academic Research Consortium (VARC). Net adverse clinical events (NACE) were defined as composite of mortality, myocardial infarction, stroke and major bleeding.
Results: Among 428 BAV patients, the average age was 83 ± 9 years and 30 (7.0%) had vascular complications. Patients with vs. without vascular complications had higher rates of myocardial infarction (13.3% vs. 2.5%; p=0.001), stroke (6.7% vs. .03%; p=<0.001), and NACE (33.3% vs. 9.8%; p=<0.001). Multivariable adjusted predictors of vascular complications are shown in the Figure.
Conclusions: In this large registry of BAV patients, pre-closure failure, thrombocytopenia and concurrent PCI were associated withincreased risk of vascular complications in patients undergoing BAV.

Figure: Independent predictors of vascular complications among patients undergoing balloon aortic valvuloplasty



*Patient was considered frail if bedbound, dependent for all activities of daily living, had moderate or severe dementia or a nursing home resident

TCT-887

TAVR– 3 year results of transapical versus transfemoral approach in a real world population of 1000 patients with severe aortic stenosis

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Background: Transcatheter aortic valve replacement (TAVR) is the method of choice in inoperable patients with severe aortic stenosis and is gaining increasing importance in high risk patients and intermediate risk patients with additional critical comorbidities or frailty. Two methods of access were used, transfemoral (TF) or transapical (TA), and baseline characteristics, clinical outcomes and mortality to three years were evaluated in both groups. Patient selection for TA or TF was made after consensus between interdisciplinary heart team members. All procedures were performed in a hybrid OR by a dedicated TAVR team.
Methods: Group I: TA in 413 patients (SAPIEN THV: 402, Symetis Acurate: 11), Group II: TF in 587 patients (SAPIEN THV: 399, CoreValve: 188); from 5/08 to 04/12 in a single center heart team.
Results: The mean age in TA group was 81.0 years and in TF 81.6 years, p=0.3. The TA group had more patients with peripheral artery disease (22.0% vs 10.9%), coronary artery disease (64.4% vs 58.3%), carotid stenosis (23.2% vs 15. 7%), redo-operation (25.7% vs 14.8%) and neurological dysfunction (14.8% vs 10.4%) than in TF (all p<0.05). In TF more patients were seen with pulmonary hypertension (22.0% vs 15.5%, p<0.05). The mean EuroSCORE I in TA was 24.2% and in TF 22.3% (p=0.007). Mortality at three years in TA was 33.7% and 27.3% in TF.
Conclusions: With a dedicated, experienced heart team in a hybrid OR, patients with severe aortic stenosis can be treated with similar rates of mortality regardless of approach and despite the fact that one group has significantly more comorbidities.

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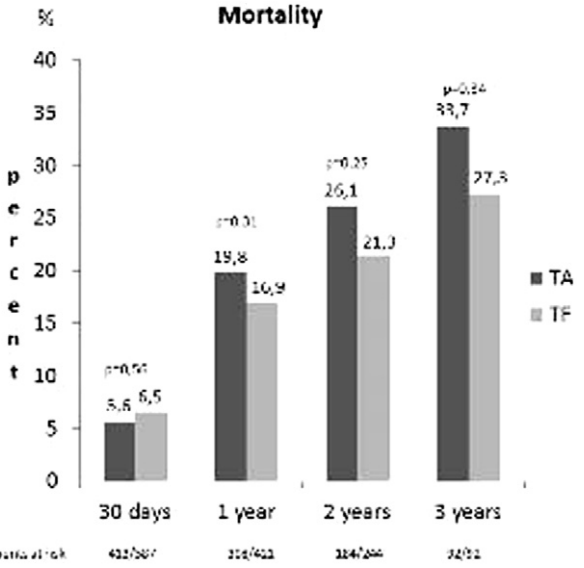

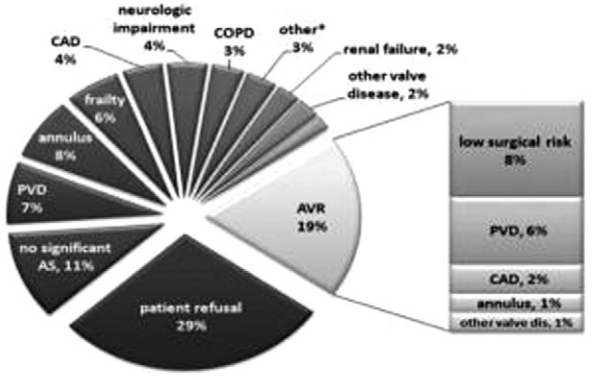

Fig. 1 Reasons to decline TAVI in favour of AVR and MT

*Four patients had another reason: severe left ventricular dysfunction (LVEF<20%); bleeding diathesis; abusive alcohol use; unknown. Abbreviations: AS = aortic stenosis; CAD = coronary artery disease; COPD = chronic obstructive pulmonary disease; PVD = PVD.

TCT-888

Patients With Aortic Stenosis Referred For Transcatheter Aortic Valve Implantation: Treatment Decision, In-hospital Outcome And Determinants Of Survival

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Background: To assess treatment decision and outcome in patients referred for Transcatheter Aortic Valve Implantation (TAVI) in addition to predictive factors of mortality after TAVI.
Methods: Three-centre prospective observational study including 358 patients. End-points were defined according to the Valve Academic Research Consortium.
Results: Of the 358 patients referred for TAVI, TAVI was performed in 235 patients (65%), surgical aortic valve replacement (AVR) in 24 (7%) and Medical Therapy (MT) in 99 (28%). Reasons to decline TAVI in favour of AVR/MT were patient's preference (29%) and peripheral vascular disease (15%; Figure 1). The logistic EuroSCORE was significantly higher in patients who underwent TAVI and MT in comparison to those undergoing AVR (19 vs. 10%, p=0.007). At 30 days, all-cause mortality and the combined safety endpoint was, respectively, 9 and 24% after TAVI and 8 and 25% after AVR. All-cause mortality was significantly lower in the TAVI group compared to the MT group at 6 months, 1 year and 2 years (12% vs. 22%, 21% vs. 33% and 31% vs. 55%, respectively, p<0.001). Multivariable analysis revealed that blood transfusion (HR: 1.19; 95% CI: 1.05-1.33), pre-existing renal failure (HR: 1.18; 95% CI: 1.06-1.33) and STS score (HR: 1.06; 95% CI: 1.02-1.10) were independent predictors of mortality at a median of 10 (IQR: 3-23) months after TAVI.
Conclusions: Approximately two-thirds of the patients referred for TAVI receive this treatment with gratifying short- and long-term survival. Another 7% underwent AVR. Prognosis is poor in patients who do not receive valve replacement therapy.

TCT-889

Sex-related clinical characteristics and outcome before and after trancatheter aortic valve implantation

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Background: Aortic stenosis is the most common valvulopathy in industrialized countries which is treated with trancatheter aortic valve implantation (TAVI) when patients are inoperable or high risk. Nevertheless, female sex constitutes an unfavorable predictive factor for the outcome of transcatheter interventions for heart diseases. In this study we will evaluate baseline clinical characteristics, echocardiography parameters as well as electrocardiographic changes before and after TAVI.
Methods: Consecutive patients who underwent TAVI years were evaluated from an existed database. Baseline characteristics were collected before TAVI while echocardiograms and ECGs were recorded before TAVI and daily for 5 days after the procedure. We separated patients in two groups according to gender.
Results: Overall, data from 122 patients (pts) (80.42±5.6 years, AVA: 0.66±0.14 cm2) were analyzed. Out of them, 62 (pts) (52.5%) were female and 58 (pts) (47.5%) were male. When we compared both groups for baseline clinical characteristics, we found that women had smaller annulus (22.02±1.62 vs. 23.98±2.07, p<0.01) and aortic valve area (0.63±0.14 vs. 0.69±0.13, p=0.012) while AVAi did not differ among two sexes (0.37±0.07 vs. 0.36±0.08, p=0.61). Women had better baseline LVEF (52.16±9.37 vs. 47.69±13.01, p=0.03) but higher systolic pressure of pneumonic artery (47.35±13.96 vs. 37.92±10.95, p<0.01) and in higher percentage (45 pts (36.9%) vs. 25 pts (20.5%), p<0.01) comparing to men. Permanent pacemaker implantation was lower to women comparing to men (16 pts (13.6%) vs. 29 pts(24.6%), p<0.01). Furthermore, women stayed less at coronary care unit (8.07±4.46 vs. 8.77±3.75, p=0.026). There was no significant difference for major vascular complications (11 pts(9%) vs. 10 pts (8.2%), p=1) and transfused blood units (2.3±4.11 vs. 2.1±1.7, p=0.14). Similarly, in hospital (4 pts(3.3%) vs. 1 pts (0.8%), p=0.37) and 30-day mortality (5 pt (7.9%) vs. 2pt (3.6%), p=0.44) was not different.
Conclusions: In conclusion, women demonstrated better baseline clinical characteristics except for PASP and lower need for permanent pacemaker implantation. However, they did not differ from men as far as short term mortality is concerned.

TCT-890

Gender Differences in Patients with Severe Aortic Stenosis Undergoing Transcatheter Aortic Valve Implantation

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Background: Transcatheter Aortic Valve Implantation (TAVI) has emerged as novel treatment option in high-risk patients with symptomatic severe aortic stenosis. The purpose of the present study was to determine differences in gender in terms of baseline

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