

CRT-700.07

Predictors of 1-Year Mortality After TAVR



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BACKGROUND Transcatheter aortic valve replacement (TAVR) is approved as an alternative to surgical aortic valve replacement (SAVR) in patients with prohibitive, high and intermediate risk. STS score and frailty score are widely used to risk stratify patients before TAVR. The goal of this study is to assess predictors of 1-year mortality after 1 TAVR.

METHODS We identified all severe aortic stenosis (AS) patients who underwent TAVR between 01/2012 to 6/2016. The baseline characteristics, clinical, procedural and follow-up data of all patients that underwent TAVR were obtained and followed for up at least one year post-procedure. Hierarchical logistic regression was used to assess predictors of 1-year mortality after 1 TAVR.

RESULTS A total of 400 TAVR Patients were included in the analysis. The overall mortality rate was 2.5% at 30 days and 10.5% at 1 year. Predictors of mortality at 1 year were STS > 6 (RR= 2.24; CI = 1.03 to 4.89, P= 0.04), Severe COPD (RR= 1.98; CI = 1.01 to 3.89, P= 0.04); home oxygen use (RR= 2.72; CI = 1.17 to 6.38, P= 0.02); prior peripheral vascular disease PAD (RR=2.07; CI 1.02 to 4.18; P=0.04) and EF < 35% (RR=2.19; CI 1.05 to 4.54; P=0.03). Other factors in regards of gender, sex, presence of coronary artery disease, hyperlipidemia, hypertension, diabetes, transaortic valve gradient, flow or velocity were not predictive of 1-year outcomes.

CONCLUSION In addition to STS score, the presence of COPD, PAD, Home oxygen use and low EF are predictive of mortality at 1 year.

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The Impact of Beta Blockers on Transcatheter Aortic Valve Replacement Outcomes



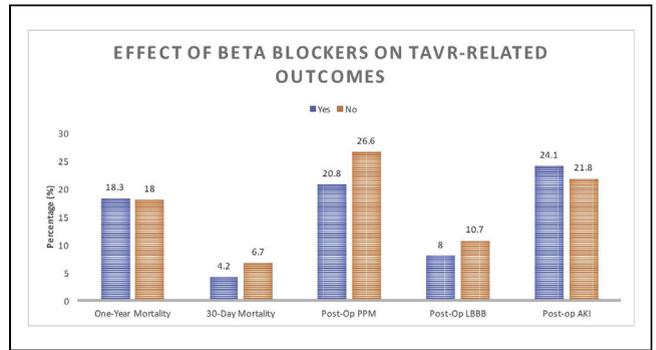
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BACKGROUND Trans-catheter Aortic Valve Replacement (TAVR) is a novel procedure that has revolutionized the treatment for severe aortic stenosis (AS). There is limited data on the pre-operative beta-blocker (BB) impact on TAVR outcomes.

METHODS A Retrospective analysis of 373 patients with severe AS who underwent TAVR between March 2013 and March 2016. The primary outcomes were 30-day and 1-year mortality. 2-sample independent t-tests and logistic regression were used.

RESULTS There were 284 (76.2%) patients in the BB group and 89 (23.8%) patients in the control group. After propensity matching analysis, both groups were found to have similar outcomes. There was no significant difference in 30 day (4.2% vs 6.7%, p=0.495) or 1-year mortality (18.3% vs 18%, p=1), post-op atrial fibrillation (8.2% vs 6.4%, p= 0.789), complete heart block (15.6% vs 16.7%, p= 0.955) or pacemaker implantation (20.8% vs 26.6%, p=0.358).

CONCLUSIONS The use of pre-operative BB did not improve the overall outcomes of TAVR including 30-day and 1-year mortality or post-op complications.



CRT-700.09

Of Tight Valves and Bleeding Bowels—Gastrointestinal Bleeding in Patients After Transcatheter Aortic Valve Replacement (TAVR)



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BACKGROUND Extra-cardiac complications of transcatheter aortic valve replacement (TAVR) are important to recognize as TAVR becomes more accessible to moderate surgical risk patients with severe aortic stenosis. Patients undergoing TAVR frequently have clinical and demographic characteristics that place them at significant risk of post-procedural gastrointestinal bleeding (GIB). Our study aimed to evaluate incidence, predictors, endoscopic findings and outcomes of GIB in the post-procedural period following TAVR.

METHODS A retrospective analysis was performed on all adult patients undergoing TAVR from September 2013 to December 2016 (n=193) at a single urban tertiary care academic medical center.

RESULTS The overall incidence of GIB following TAVR was 7% (n=14/193) with median time to GIB of 28 days (range 4-850 days). Compared to the non-GIB group, the GIB group had higher prevalence of active smoking (21% vs. 3%; p=0.02) and history of atrial fibrillation/flutter (57% vs. 29%; p=0.037). At baseline, more non-GIB group patients were on gastric protection with proton pump inhibitors (PPI) compared to GIB group (71% vs. 29%; p=0.002). Post-procedurally, more GIB patients were on combination of antiplatelet and anticoagulant therapies compared to non-GIB patients (71% vs. 41%; p<0.01). Independent of GIB status, patients on the combination therapy had a higher all-cause mortality compared to patients receiving only antiplatelet, only anticoagulant therapy, or none (p<0.01).

CONCLUSIONS Patients on combination antiplatelet and anticoagulant therapy are not only at a higher risk of developing GIB but also at an increased risk of all-cause mortality. The use of GI prophylaxis (i.e., PPI) could potentially limit the occurrence of GIB.

Table 1. Peri-procedural characteristics of study population

Variables	GIB group N (%) 14 (7)	Non-GIB group N (%) 179 (93)	p-value
Baseline characteristics			
Male	7 (50)	91 (50)	1.00
Caucasian	14 (100)	176 (98)	1.00
Prior CVA	1 (7.2)	22 (12)	1.00
Hypertension	13 (92.8)	175 (98)	0.32
Hyperlipidemia	7 (50)	95 (53)	1.00
Diabetes Mellitus	5 (36)	53 (30)	0.76
Atrial fibrillation/ flutter	8 (57)	52 (29)	0.04
History of CAD	9 (64)	139 (78)	0.32
Smoking			
Active smoker	3 (21)	5 (3)	
Quit	6 (43)	107 (60)	
Non-smoker	5 (36)	67 (37)	0.02
PPI use	4 (29)	127 (71)	0.002
Pre-procedural echocardiographic characteristics			
Pre-TAVR AV Mean gradient (mmHg)			
<25	-	17(9)	
25-39	7 (50)	56 (31)	
>/=40	7 (50)	104 (58)	0.29
Pre-TAVR AV area (cm ²)			
<1	13 (93)	171 (96)	
1-1.5	1 (7)	6 (3)	0.42
Procedural characteristics			
Procedural approach			
Transfemoral	12 (86)	148 (83)	
Transapical	-	11 (6)	
Transaortic	2 (14)	6 (3)	
Subclavian	-	13 (7)	0.20
Peri-procedural TEE	14 (100)	174 (97)	1.00
Type of valve			
Sapien 3	5 (36)	79 (44)	
Sapien XT	4 (29)	37 (21)	
CoreValve	5 (36)	62 (35)	0.67
Post-procedural findings and antithrombotic regimen			
30 day AV mean gradient (mm Hg)			
<25	11(79)	142(80)	
25-40	-	2(1)	1.00
Type of antithrombotic therapy			
Antiplatelet only	2 (14)	97 (54)	
Anticoagulant only	1 (7)	3 (2)	
Antiplatelet and anticoagulant	10 (71)	74 (41)	
None	1 (7)	5 (3)	0.008
All-cause mortality	1 (7)	15 (8)	1.00
Stroke	1 (7)	3 (2)	0.26
		Median (Range)	Median (Range)
Length of stay of index hospitalization (days)	6.5 (3-77)	5 (2-49)	0.33
No. of units of blood transfusion post-TAVR	4 (0-67)	0 (0-2)	<0.0001

CRT-700.10

The Impact of Gradient And Flow on the Outcomes of TAVR in Severe Aortic Stenosis with Preserved Left Ventricular Ejection Fraction



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BACKGROUND While transaortic flow and gradient are important determinant of prognosis in patients with severe AS treated medically or with surgical aortic valve replacement, it is unclear whether these echocardiographic values are still predictive of outcomes in patients with severe aortic stenosis with preserved ejection fraction who are undergoing transcatheter aortic valve replacement (TAVR) is less defined.

METHODS We identified consecutive patients presenting for TAVR between 01/2011 to 6/ 2016 with an aortic valve area (AVA) < 1.0cm² and EF ≥ 50%. The primary outcome was 1-year mortality. Normal flow (NF) was defined as having stroke volume index (SVI) of ≥ 35 ml/m²; while low Flow (LF) was defined as SVI<35. High gradient (HG) was defined as mean gradient of ≥ 40 mmHg; while low gradient (LG) was defined as < 40 mmHg.

RESULTS A total of 264 patients were included in the analysis with a 1-year follow up. At baseline there was no significant difference in baseline characteristics in regards of age, race, gender, or baseline characteristics including hypertension, hyperlipidemia, diabetes or coronary artery disease. There was no difference in 1-year mortality outcomes after TAVR in relation to either gradient (12.5% LG vs. 17.3% HG; P=0.63) or transaortic flow (15.5% LF vs. 19.4% NF; P=0.63).

CONCLUSIONS TAVR seems to help improving the prognosis of severe aortic stenosis regardless of transaortic flow and gradient in patients with normal ejection fraction.

CRT-700.11

Impact of Female Gender on 30-Day Outcomes Following Transcatheter Aortic Valve Replacement with Contemporary Valves



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BACKGROUND The impact of gender on early outcomes following transcatheter aortic valve replacement (TAVR) in the setting of contemporary valves is not well known. We aimed to evaluate gender-specific differences on 30-day outcomes in adults undergoing TAVR with contemporary valves.

METHODS The study population included 179 consecutive patients who underwent TAVR with a contemporary valve [Sapien 3 valve (Edwards Life Sciences, Irvine, CA) or CoreValve Evolut R or Evolut Pro (Medtronic, Minneapolis, MN)] from December 2015-October 2017 at an academic tertiary medical center.

RESULTS Of the 179 patients, 100 (55.9%) were men and 79 (44.1%) were women. Women had a trend towards older age (82 vs 79 years, p=0.065). They had lower serum creatinine (1.0 vs 1.6mg/dl, p=0.001) and hemoglobin (11.2 vs 12.2 g/dl) and higher platelet count (245 vs 193 K/uL). Women had lower rates of prior myocardial infarction, prior coronary artery bypass graft surgery, atrial fibrillation, chronic obstructive pulmonary disease, abdominal aortic aneurysm, and less severe coronary artery disease. Women also had smaller aortic annular area (391 vs 502mm², p<0.001) and perimeter (72.2 vs 81.7mm, p<0.001) and underwent implantation of small TAVR valves. Women had higher rates of periprocedural intubation and lower rates of conscious sedation. Women were also more likely to be discharged on aspirin (98.7% vs 88.9%, p=0.013) and more likely to be sent to a skilled nursing facility (26.9% vs 14.1%, p=0.034). No significant differences in rates of 30-day outcomes were noted in men and women (Figure).

CONCLUSIONS In this observational study of adults undergoing TAVR with contemporary valves, gender is not associated with higher rates of 30-day clinical outcomes. Further studies examining gender disparities in TAVR peri-procedural care and outcomes are warranted.