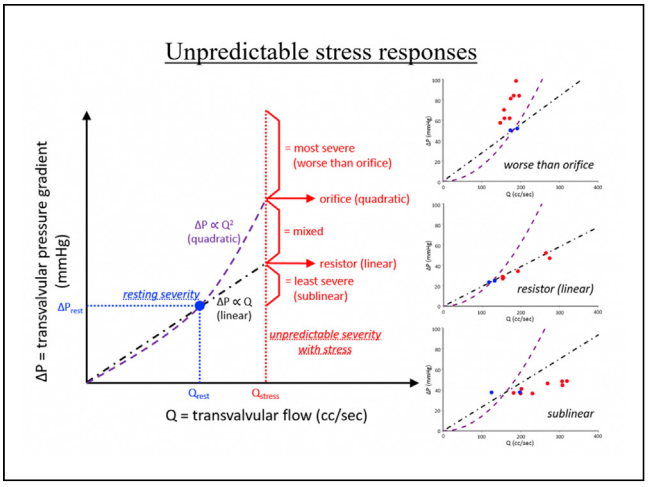
quadratic (median R2<0.01) models predicted stress observations, implying that a stenotic valve does not behave like a resistor or orifice. Dobutamine Ao/LV correlated best with the relative reduction in flow caused by the AS. After TAVI, a highly linear relationship (median R2 0.96) indicated a valid valve resistance, median 0.65 (IQR 0.41 to 1.15) Woods units.



CONCLUSION Resting AS assessment cannot predict stress hemodynamics, implying that the Gorlin orifice model does not provide a proper physiologic description. Our novel focus on pressure loss versus flow relationships offers a more complete description. Because our results suggest that some valve-related exertional symptoms may be missed without routine provocative maneuvers, further study of moderate AS responses to stress appears justified.

CATEGORIES STRUCTURAL: Valvular Disease: Aortic

TCT-280

Abstract Withdrawn

TCT-281

Prognostic Relevance of Left Ventricular Myocardial Performance Following Transcatheter Aortic Valve Replacement

Masahiko Asami,[1] Thomas Pilgrim,[2] Jonas Lanz,[3] Dik Heg,[4] Raffaele Piccolo,[1] Bettina Langhammer,[5] Fabien Praz,[6] Marco Valgimigli,[7] Eva Roost,[5] Stephan Windecker,[8] Stefan Stortecky[8]
[1]Swiss Cardiovascular Center, Inselspital, Bern University Hospital, Bern, Switzerland; [2]Bern University Hospital, Berne, Switzerland; [3]Inselspital Bern, Bern, Switzerland; [4]Clinical Trials Unit, Department of Clinical Research, Institute of Social and, Bern, Switzerland; [5]Department of Cardiac Surgery, Swiss Cardiovascular Center, Bern University Hospital, Bern, Switzerland; [6]Columbia University Medical Center, New York City, New York, United States; [7]Swiss Cardiovascular Center, Inselpsital, Bern, Switzerland; [8]University Hospital Bern, Bern, Switzerland

BACKGROUND The left-ventricular myocardial performance index TEI is an echocardiographic parameter that incorporates the information of systolic and diastolic time intervals. Although the prognostic value of selected systolic and diastolic parameters is well established after transcatheter aortic valve replacement (TAVR), the role of TEI has not been evaluated in this setting, yet. Therefore, the aim of this study was to assess the impact of left-ventricular TEI index on short- and longer-term outcomes after TAVR.

METHODS Between August 2007 and December 2015, consecutive patients with symptomatic, severe aortic stenosis and transthoracic echocardiography pre and post TAVR were considered eligible for this analysis. Prospective follow-up was scheduled at 30days and 12months. Major adverse events were adjudicated according to the VARC-2 standardized endpoint definitions by an independent clinical event committee.

RESULTS Of 895 patients with echocardiographic images to calculate TEI, 687 had normal (<0.45) and 208 had high TEI (≥0.45) at baseline prior to TAVR (pre-TEI), whereas 644 and 139 presented normal and high TEI after TAVR (post-TEI), respectively. After adjustment for confounding factors, high pre-TEI was associated with an increased risk of all-cause mortality at 30 days (adjusted hazard ratio, HRadj 3.92, 95%CI 2.09-7.33) and 12 months (HRadj 2.91, 95%CI 2.07-4.10). At multivariable analysis pre-TEI emerged as an independent predictor of early (per 0.1-HRadj 1.33, 95%CI 1.21-1.46) and late mortality (per 0.1-HRadj 1.59, 95%CI 1.43-1.77). Similarly, post-TEI was associated with an increased risk of mortality between 30 days and 12 months (HRadj 6.27, 95%CI 4.05-9.70) and was identified as independent predictor of mortality (per 0.1-HRadj 1.41, 95%CI 1.33-1.50).

CONCLUSION The left-ventricular myocardial performance index TEI is a reference parameter for global systolic and diastolic LV function and was associated with clinical outcomes during short and longer-term follow-up after TAVR.

CATEGORIES STRUCTURAL: Valvular Disease: Aortic

TCT-282

Long Term Outcomes of TAVR on Paradoxical Low Flow Low Gradient Severe Aortic Stenosis

Mohamad Kabach,[1] Abdulah Alrifai,[1] Jesus Pino Moreno,[2] Pradeep Dayanand,[2] Edwin Grajeda,[2] Lawrence Lovitz,[2] Mark Rothenberg,[3] Roberto J. Cubeddu,[4] Cristiano Faber,[2] Marcos Nores,[5] Zaher Fanari[6]
[1]University of Miami/JFK Medical Cener, West Palm Beach, Florida, United States; [2]University of Miami School of Medicine/JFK Medical Center, West Palm Beach, Florida, United States; [3]University of Miami School of Medicine/JFK Medical Center, Atlantis, Florida, United States; [4]Cleveland Clinic Florida, Weston, Florida, United States; [5]JFK Medical Center, Wellington, Florida, United States; [6]University of Kansas School of Medicine, Wichita, Kansas, United States

BACKGROUND The long term impact of transcatheter aortic valve replacement (TAVR) in patients with paradoxical LG/LF aortic stenosis and preserved ejection fraction constitutes subjects of an evolving debate.

METHODS We identified consecutive patients presenting for TAVR between 01/2011 to 6/ 2016 with an aortic valve area (AVA) < 1.0cm^2 and EF≥ 50%. We followed the 4 flow-gradient subgroups for occurrence of death. 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 to age, race, gender, or baseline characteristics including hypertension, hyperlipidemia, diabetes or coronary artery disease. Comparing all 4 AS subgroups, there was no significant difference in mortality between the groups. (LF/LG 15.7% vs. LF/HG 15.4% vs. NF/HG 7.7% vs. NF/LG 18.8% ; Log Rank Test, P=0.565).

CONCLUSION Patients with paradoxical LF/LG and preserved ejection fraction represent an under-recognized high-risk group with similar prognosis to those with HG. TAVR may offer a reasonable option in this group.

CATEGORIES STRUCTURAL: Valvular Disease: Aortic

TCT-786

Antithrombotic Management for Atrial Fibrillation Patient Undergoing Transcatheter Aortic Valve Replacement

M Chadi Alraies,[1] Homam Moussa Pacha,[2] Kyle Buchanan,[3] Toby Rogers,[1] Edward Koifman,[1] Arie Steinvil,[4] Mohamad Soud,[1] Petros Okubagzi,[1] Linzhi Xu,[1] Rebecca Torguson,[3] Itshac Itsik Ben-Dor,[3] Lowell Satler,[3] Augusto Pichard,[3] Ron Waksman[5]
[1]MedStar Washington Hospital Center, Washington, District of Columbia, United States; [2]Medstar Washingtion Hospital Center, Silver Spring, Maryland, United States; [3]Washington Hospital Center, Washington, District of Columbia, United States; [4]Medstar Washington Hospital center, Washington DC, USA, Washington, District of Columbia, United States; [5]Medstar Washington Hospital Center, Washington, District of Columbia, United States

BACKGROUND Oral anticoagulation (OAC) management for atrial fibrillation (AF) patients vary following transcatheter aortic valve replacement (TAVR). Warfarin is standard of care for AF patients post

TAVR. We evaluated antithrombotic use post TAVR and associated outcome.

METHODS Consecutive AF patients on OAC who underwent TAVR from 2007 to 2016 were included. Patients were divided into three groups: warfarin ± any antiplatelet, NOAC ± any antiplatelet, and dual antiplatelet.

RESULTS Total of 331 AF patients were analyzed. Overall, 18% (n=58) were discharged on NOAC, 34% (112) on warfarin, 32% (106) on DAPT alone and 17% (n=55) were not eligible for OAC or antiplatelet therapy. Warfarin group was younger compared to others (p=0.008). Most patient's characteristics were similar in all 3 groups; gender (p=0.069), HTN (p=0.18), DM (p=0.16), stroke (p=0.37), CHF (p=0.054), CAD (p=0.21), and PAD (p=0.98). There was no difference in rates of stroke (p=0.366), major (p=0.167) or minor bleeding (p= 0.233) between the 3 groups. Unadjusted 1 year mortality was not significantly different between warfarin, NOAC and DAPT groups (p=0.15), with trend toward lower mortality in NOAC when compared to warfarin alone (p=0.06) (figure). One-year adjusted risk of mortality was similar in NOAC and DAPT groups compared with warfarin (HR, 95% CI; 0.44, 0.18-1.01; 0.72, 0.39-1.31; respectively).

CONCLUSION Compared with warfarin alone, NOAC is associated with similar rate of bleeding and stroke with trends toward lower 1-year mortality. Further studies are required for identifying the optimal antithrombotic strategy in TAVR patients with AF.

CATEGORIES STRUCTURAL: Valvular Disease: Aortic

Table 1: In-Hospital Outcomes, Length of Stay and Cost, Per Treatment Group

Variable Name	SMVR (N=2123)	TMVR (N=74)	P value	Adjusted OR (95% CI)	Adjusted P value*
Length of Stay (Days)	22.8±18.4	12.6±24.7	<0.0001	N/A	0.0003
Cost (Median)	$98165	$52646	0.0407	N/A	<0.0001
In-Hospital Mortality	13.8%	1.3%	0.0020	0.04 (0.01-0.34)	0.0030
Acute Renal Failure	37.2%	25.7%	0.0431	0.29 (0.15-0.58)	0.0005
HD/PD	59.8%	48.6%	0.0544	1.54 (0.83-2.84)	0.1706
Stroke	8.5%	0%	0.0089	0.04 (0.01-0.18)	<0.0001
Blood Loss Requiring Transfusion	45.4%	23%	0.0001	0.42 (0.22-0.80)	0.0083
Cardiogenic Shock	15.1%	8.1%	0.0958	0.53 (0.21-1.37)	0.1912
Cardiac Arrest	6.9%	6.8%	0.9679	1.60 (0.58-4.42)	0.3633
PPM placement	12.1%	4%	0.0358	0.28 (0.08-0.93)	0.0383

SMVR- Surgical Mitral Valve Repair, TMVR- Transcatheter Mitral Valve Repair, OR- Odds Ratio, CI- Confidence Interval, PPM- Permanent Placement, HD- hemodialysis, PD- peritoneal dialysis, N/A- Not Available
*- Adjusted P values were derived after performing multivariate logistic regression analysis. Age, gender, race and all comorbidities were included in the model. Other variables were not added because of missing data.

CARDIAC SURGERY

Abstract nos: 283 - 287

TCT-283

Comparison of Transcatheter Mitral Valve Repair vs. Surgical Mitral Valve Repair in Patients with Advanced Kidney Disease: Insights from The National (Nationwide) Inpatient Sample (NIS)

Rajkumar Doshi,[1] Pratik Agrawal,[2] Jay Shah,[3] Tapan Miyani,[4] Dhaval Patel,[5] Perwaiz Meraj[6]
[1]North Shore University Hospital- Northwell Health, Manhasset, New York, United States; [2]Rutgers New Jersey Medical School, Newark, New Jersey, United States; [3]Northshore University Hospital, Manhasset, New York, United States; [4]New York Methodist Hospital, Brooklyn, New York, United States; [5]Detroit Medical center/Wayne State University Hospital, Detroit, New Jersey, United States; [6]Hofstra Northwell School of Medicine, New York, Manhasset, New York, United States

BACKGROUND Transcatheter mitral valve repair (TMVR) is an emerging new treatment option in patients with mitral regurgitation considered a high risk for surgery. However, there is a lack of data on outcomes comparing TMVR and surgical mitral valve repair (SMVR) in advance kidney disease patients. Hence, the aim of our study was to compare the in-hospital morbidity and mortality in advance kidney disease patients undergoing TMVR or SMVR.

METHODS National Inpatient Sample (NIS) (2012- 2014) using the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) procedure codes 35.97 for TMVR and 35.12 for SMVR was used to form a database. Patients with chronic kidney disease stage IV, Stage V and end stage renal disease (ESRD) based on ICD-9 diagnostic codes were included as advanced kidney disease patients. The primary outcome was in-hospital mortality.

RESULTS A total of 2,197 (Weighted 10,985) patients were studied. The mean age was higher with the TMVR group (72.4 vs 61.7, p=<0.0001). After performing multivariate regression analysis, the primary outcome of in-hospital mortality (13.8% vs 1.3%, adjusted p=0.0030) and all secondary outcomes, excluding dialysis requirement, cardiogenic shock and cardiac arrest were significantly lower with the TMVR approach. The average length of stay was lower with TMVR when compared to SMVR (22.8 vs 12.6 days, adjusted p=0.0003), with reduced in-hospital costs ($98,165 vs $52,646, adjusted p=<0.0001).

CONCLUSION These results demonstrate TMVR is associated with significantly lower inpatient morbidity and mortality in patients with advanced kidney disease compared to SMVR in this large national study.

CATEGORIES STRUCTURAL: Valvular Disease: Mitral

TCT-284

DuraGraft, a one-time intraoperative treatment against vein graft failure: A randomized multicenter trial using longitudinal MDCT angiography analysis in patients undergoing CABG

Maximilian Emmert,[1] Pierre Voisine,[2] Peter Skov Olson,[3] Nicolas Noiseux,[4] Hugues Jeanmart,[5] Dave Veerasingam,[6] Craig Brown,[7] Louis Perrault[8]
[1]UniversitätsSpital Zürich, Zurich, Switzerland; [2]Institut Universitaire de Cardiologie et de Pneumologie, Quebec, Quebec, Canada; [3]Rigshopitalet University of Copenhagen, Copenhagen, Denmark; [4]Montreal Heart Institute, Montreal, Quebec, Canada; [5]Hopital du Sacre-Coeur, Montreal, Quebec, Canada; [6]Galway University Hospital, Galway, Ireland, Galway, Galway, Ireland; [7]New Brunswick Heart Centre, Saint John, New Brunswick, Canada; [8]Montreal Heart Institute, Montréal, Montreal, Quebec, Canada

BACKGROUND Saphenous vein grafts (SVGs) are the most often used conduits in CABG, but are related to impaired long term patency rates due to the occurrence vein graft disease and failure (VGD/F) compromising clinical outcomes. This trial evaluates the potential impact, of DuraGraft, a one-time intraoperative treatment protecting the endothelial structure and function on the development and progression of VGD/F using longitudinal MDCT angiography in CABG patients.

METHODS In this prospective randomized, double-blinded multicenter trial (NCT02272582/02774824), 119 CABG patients requiring at least two SVGs were enrolled. Using an in-patient randomization, one graft was then treated with DuraGraft (treatment group), while the other graft was treated with standard of care (saline, controls). Patients were followed up clinically for the occurrence of cardiac adverse events and with MDCT angiography of paired grafts (cm intervals of both SVGs within each patient) at 4-6weeks (baseline), 3months and 12months. MDCT analysis included several graft parameters such as the magnitude of change in wall thickness, lumen diameter, degree of stenosis and other remodeling variables.

RESULTS Enrollment was completed at 7 sites with well-matched subject and graft perioperative and conduit characteristics (>20; i.e. harvest location, quality, target-territory, etc.) indicated sufficient inpatient randomization. MDCT protocol efficacy was confirmed with ≥95% assessable coronary segments (n=5793). DuraGraft treatment was safe and no adverse events such as MI, need for repeat revasc, death or MACE occurred. Short term, 3 month, analysis of wall thickness (early signal for intimal hyperplasia) revealed a positive trend towards no increase in SVGs following DuraGraft treatment.