[13]IRCCS Ospedale Galeazzi San'Ambrogio, Milan, Italy; [14]Division of Cardiology, Department of Medicine, University of Verona, Verona, Italy, Verona, Italy; [15]Department of Cardiology, Kerckhoff Heart Center, Bad Nauheim, Germany, Bad Nauheim, Germany; [16]Cardio-Thoracic-Vascular Department, IRCCS Ospedale San Raffaele , Milan, Italy, Milan, Italy; [17]U.O.C. Cardiologia, Centro Alte Specialità e Trapianti, A.O.U. Policlinico "G. Rodolico - San Marco", Catania, Italy, Catania, Italy; [18]Department of Cardiology, Thoraxcenter, Erasmus Medical Center, Rotterdam, the Netherlands, Rotterdam, Netherlands

BACKGROUND Clinical relevance of echocardiographic transprosthetic gradients after transcatheter aortic valve replacement (TAVR) is debated, as is their relationship with prosthesis-patient mismatch (PPM). We aimed to assess association of different degrees of mean pre-discharge transprosthetic gradients with PPM and all-cause mortality.

METHODS TAVI-SMALL 2 international retrospective registry included 1,378 patients with severe aortic stenosis and small aortic annuli treated with TAVR between 2011 and 2020 at 16 centers. Mean pre-discharge echocardiographic transprosthetic gradients were considered low if <10 mmHg (low) in 741 patients, intermediate if 10-20 mmHg and elevated if ≥20 mmHg. Primary endpoints were incidence of severe PPM and all-cause mortality.

RESULTS Mean pre-discharge echocardiographic transprosthetic gradients were low in 741 patients (61.2%), intermediate in 422 patients (34.8%) and elevated in 48 patients (4.0%). Low-gradient patients had lower left ventricular ejection fraction (59% vs. 61% vs. 62%, p=0.002) and more commonly presented moderate or greater mitral regurgitation (10.2% vs. 5.4% vs. 4.3%, p=0.015). Proportion of patients with pre-discharge severe PPM was different between groups (2.4% vs. 9.8% vs. 16.7% for low-, intermediate- and elevated-gradient patients, respectively, p<0.001). All-cause mortality at a median follow-up of 377 (168-701) days did not differ between groups (9.5% vs. 8.9% vs. 4.3%, p=0.578).

CONCLUSION The proportion of patients with pre-discharge severe PPM increases according to pre-discharge mean transprosthetic gradients. All-cause mortality at medium-term follow-up did not significantly differ between groups.

CRT-700.38

Racial Disparities in Transcatheter Aortic Valve Replacement in Japanese Compared With Western Patients

Koki Shishido,[1] Noriaki Moriyama,[1] Futoshi Yamanaka,[1] Tomoki Ochiai,[1] Hiroaki Yokoyama,[1] Hirokazu Miyashita,[1] Yoichi Sugiyama,[2] Mika Laine,[2] Shigeru Saito[1]
[1]Shonan Kamakura General Hospital, Kamakura, Japan; [2]Helsinki University Central Hospital, Helsinki, Finland

BACKGROUND Few reports showed direct comparison of clinical outcomes between western and east Asia population undergoing transcatheter aortic valve replacement (TAVR). Therefore, we investigated the differences in patients' demographics, anatomical features, and clinical outcomes after TAVR between Japanese and Finnish.

METHODS This study included that a total 1835 patients were treated with TAVR from December 2008 and May 2020 at two centers: Shonan Kamakura General Hospital in Japan (527 patients) and Helsinki University Central Hospital in Finland (1308 patients). Baseline demographics, pre-procedural computed tomography (CT) and clinical outcomes were compared between Japanese and Finnish.

RESULTS Mean age was 84.2 +/- 4.9 years old in Japanese and 80.5 +/- 6.7 years old in Finnish (p<0.001). Japanese patients were lower body mass index compared with Finnish (21.7 +/- 3.4 vs. 26.8 +/- 5.1, p<0.001). Mean STS score was higher in Japanese compared with Finnish (6.4 +/- 4.1 % vs. 4.5 +/- 3.1 %). Pre-procedural CT showed that annules area (420.0 +/- 77.8 mm^2 vs. 480.2 +/- 90.3 mm^2) and perimeter (73.5 +/- 6.7 mm vs. 79.0 +/- 7.4 mm) were smaller in Japanese patients (p<0.001). The mean follow-up duration was 930 +/- 670 days in Japanese and 1067 +/- 734 days in Finnish (p<0.001). 30-day mortality was comparable between 2 groups (1.7 % vs. 2.4%, p=0.388). Kaplan-Meier analysis for long-term follow-up showed all-cause death was no significant difference between Japanese and Finnish (p=0.078).

CONCLUSIONS This is the largest study for direct comparison of patients' characteristics and clinical outcomes between Japanese and Western patients after TAVR. Compared with Finnish, Japanese patients have small body size and small aortic anatomy. Clinical outcomes for long-term follow-up are comparable between Japanese and Finnish.

CRT-700.39

Transcatheter Aortic Valve Implantation With a Self-Expanding Intra-Annular Valve: Institutional Experience With Over 100 Patients

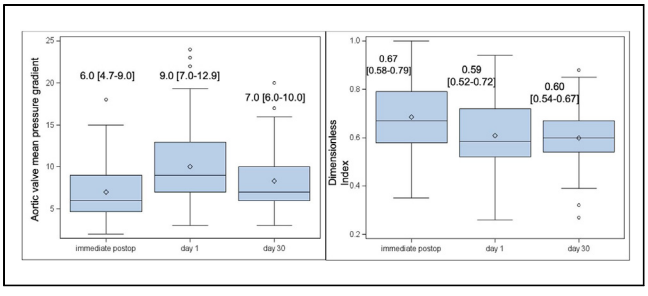
James Brown, Sarah Yousef, Dustin Kliner, Catalin Toma, Derek Serna-Gallegos, Amber Makani, David West, Floyd Thoma, Yisi Wang, Ibrahim Sultan
UPMC, Pittsburgh, PA

OBJECTIVE The Portico™ (Abbott, Santa Clara, CA) transcatheter heart valve (THV) with FlexNav™ delivery system is a self-expanding intra-annular valve, which was approved in 09/2021 for patients with severe aortic stenosis who are at high or extreme risk for open-heart surgery. This study sought to describe outcomes of self-expanding intra-annular THV.

METHODS This was an observational study of consecutive transcatheter aortic valve implantations (TAVI) from 01/2021 through 10/2022 performed at a single institution. All patients receiving a self-expanding intra-annular THV were included for analysis. 30-day clinical and echocardiographic outcomes after TAVI were analyzed.

RESULTS A total of 106 patients underwent a native TAVI for aortic stenosis with a self-expanding intra-annular THV. 54% were women and the median age was 81.0 years [76.0-86.0]. 9% of the cohort received size 23 valve, 14% received size 25, 42% received size 27, and 36% received size 29. 1 patient (0.9%) died in the hospital and 1 patient (0.9%) had a vascular access complication, while no patients had a stroke or post-TAVI paravalvular leak (>moderate). Transvalvular pressure gradients (TVPG) and dimensionless index (DI) after TAVI are displayed in Figure 1. The mean TVPG immediately after TAVI was 6.0 [4.7-9.0] mmHg, which increased modestly to 9.0 [7.0-12.9] mmHg on postoperative day 1 and 7.0 [6.0-10.0] mmHg on postoperative day 30. The DI immediately after TAVI was 0.67 [0.58-0.79], which modestly decreased to 0.59 [0.52-0.72] on postoperative day 1 and 0.60 [0.54-0.67] on postoperative day 30.

CONCLUSIONS Outcomes of self-expanding intra-annular THVs are promising. The incidence of in-hospital mortality, stroke, and vascular access complications were acceptably low, and post-TAVI hemodynamics may compare favorably with other commercially available THV.



CRT-700.47

Commissural/Coronary Alignment With the Novel Myval Octacor THV - The Octa Align Technique

Pruthvi Chenniganahosahalli Revaiah, Asishkumar Mandalay, Gunasekaran Sengottuvelu, Ahmed Elkoumy, Hesham Elzomor, Mahmoud Abdelshafy, Sanjeev Bhatt, Yoshinobu Onuma, Osama Soliman, Patrick W. Serruys
Galway university hospitals, University of Galway, Galway, Ireland

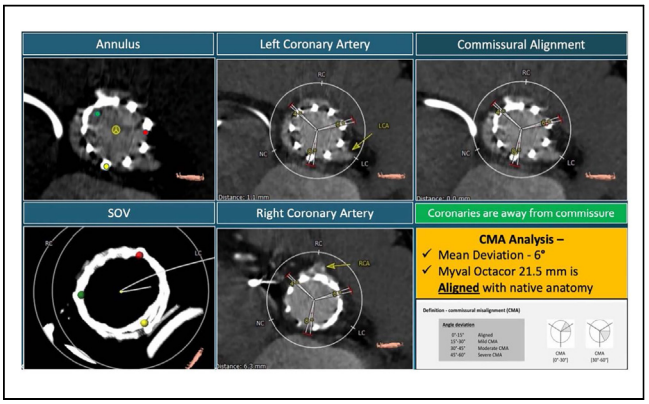
BACKGROUND Indications for TAVR in young and lower-risk populations is increasing. There is an undisputed requirement to maintain valve longevity and ensure complete accessibility to the coronary tree. Commissural and coronary alignment impacts valve hemodynamics, access to the coronary ostia and coronary flow following TAVR and redo-TAVR.

METHODS Method described aims to achieve accurate positioning of THV to ensure minimal misalignment between the commissural posts of the THV and commissures of native aortic valve. A bioprosthetic THV deployed under fluoroscopic guidance with just one commissure

aligned towards the mirror image of the mid-RCC as per the fluoroscopic (and MSCT) view, will deploy anatomically towards the RCC-LCC commissure with minimal misalignment and a THV deployed under fluoroscopic guidance with just one commissure aligned towards the mirror image of mid-LCC as per the fluoroscopic (and MSCT) view, will deploy anatomically towards the RCC-NCC commissure with minimal misalignment.

RESULTS Using this technique, it is possible to predictably ensure minimal misalignment between commissural posts of THV and commissures of native aortic valve. Preliminary experience using Myval Octacor, showed that the Octa Align technique worked efficiently in 25 (83%) out of first 30 cases. Commissural alignment in all 30 cases was assessed using the multi-slice CT scan. An example of assessment is provided in figure 1.

CONCLUSIONS Severe commissural misalignment may lead to early valve degeneration and can impair access to the coronary ostia and coronary flow following TAVR and redo-TAVR. The proposed OctaAlign technique is easy to practice, doesn't require additional hardware or imaging software, is predictive and replicable and ensure minimal commissural misalignment. Preliminary experience shows good results in first 30 cases.

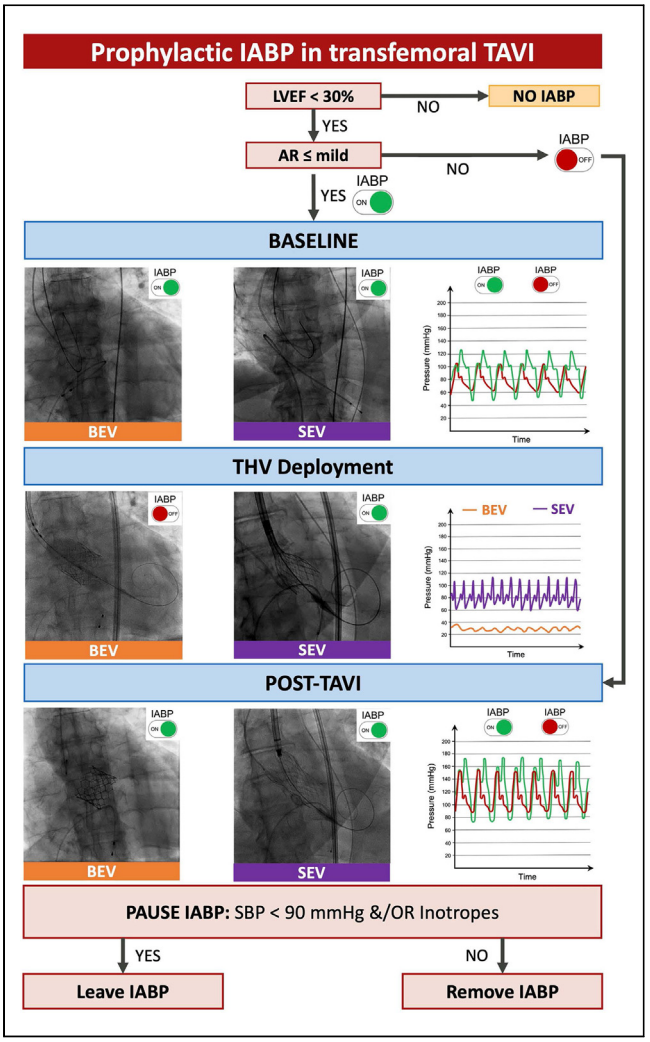


CRT-700.48

Prophylactic Intra-Aortic Balloon Pump in Transfemoral Transcatheter Aortic Valve Replacement

Andrea Scotti, Pier Pasquale Leone, Matteo Sturla, Jonathan Curio, Alexander M. Spring, Gaia Ressa, Sebastian Ludwig, Tadahisa Sugiura, Manaf Assafin, Juan F. Granada, Mei Chau, James Doolittle, Azeem Latib
Montefiore Medical Center, Bronx, NY

Patients with severely reduced left ventricular ejection fraction (LVEF), especially in the case of low-flow, low-gradient (LFLG) aortic stenosis (AS), represent a group with increased mortality after transcatheter aortic valve replacement (TAVR). Prophylactic temporary mechanical circulatory support (MCS) with intra-aortic balloon pump (IABP) may provide a viable option to unload the left ventricle before valve implantation and prevent post-implantation hemodynamic instability. This pilot experience aims to investigate technical feasibility of IABP support during transfemoral TAVR. Consecutive patients with severe AS and LVEF <30% undergoing transfemoral (TF) TAVR with prophylactic IABP support were included. IABP counterpulsation was initiated immediately prior to TAVR and was kept functioning throughout the procedure, except during rapid ventricular pacing during balloon-expandable valve deployment. Outcomes of interest included procedural success and in-hospital mortality. Between November 2021 and April 2022, a total of 9 patients (2 females [22%]), median LVEF 20% (interquartile range [IQR]: 18%-25%; LFLG, n=6) underwent elective TF TAVR. The median age was 82 (IQR: 71.8-85.3). Eight balloon-expandable and one self-expanding valve were implanted. There was no evidence of disruption to the prosthetic valve or improper functioning of the IABP during tracking in the descending aorta. Procedural success with no hemodynamic instability or peri-operative complications was met in all patients; IABP was removed on same day (n=6) or post-procedural day 1 (n=3). This pilot experience demonstrates the feasibility of temporary prophylactic MCS with IABP during transfemoral TAVR. Although these findings are promising, prospective studies are warranted to validate the safety and efficacy of TAVI with prophylactic IABP support.



CRT-700.57

The Need for Coronary Access 10 Years After Transcatheter Aortic Valve Implantation (TAVI)

Abdulaziz Algethami,[1] Shaya Fahad Aldosary,[2] Thamer Saad Alhowaish,[2] Kamal Ayoub,[1] Mohammed Balgaith,[1] Amjad Ahmed,[1] Abdulmajeed Mansour Alzeer,[1] Dana Abdullah Albarrak,[2] Adel Nayef Algublan,[1] Ohoud Saad Alsayari,[2] Foz S. Alanazi,[1] Abdulrahman Almogairi,[3] Hussein Alamri,[3] Mohammed Alotaiby,[3] Sondos Samargandy,[3] Bader Alzahrani,[3] Abdullah Alkhushail,[3] Ali Alghamedi[1]
[1]King Abdulaziz Cardiac Center (KACC), Riyadh, Saudi Arabia; [2]king Saud Bin Abdulaziz University (KSAU), Riyadh, Saudi Arabia; [3]Prince Sultan Cardiac Center, Riyadh, Saudi Arabia

BACKGROUND Diagnosis of coronary artery disease (CAD) impacts the treatment choice of severe aortic stenosis (AS), either trans-catheter aortic valve implantation (TAVI) or surgical approach. Recent valvular heart disease guidelines highlight that possible future intervention of severe AS in CAD patients might be considered coronary access. Furthermore, the choice of Device, balloon-expandable valve (BEV) vs. self-expandable valve (SEV), has some consideration for