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TAVI in patients with bicuspid aortic stenosis – preliminary results from multicenter registry

Janusz Kochman[1], Zenon Huczek[1], Piotr Ścisło[1], Maciej Dabrowski[2], Zbigniew Chmielak[2], Piotr Szymański[2], Adam Witkowski[2], Radosław Parma[3], Andrzej Ochala[3], Piotr Chodór[4], Krzysztof Wilczek[4], Krzysztof W. Reczuch[5], Piotr Kubler[5], Bartosz Rymuza[1], Lukasz Koltowski[1], Anna Ścibisz[1], Radosław Wilimski[1], Grzegorz Opolski[1]
[1]Medical University of Warsaw, Warsaw, Poland, [2]Department of Interventional Cardiology and Angiology, Institute of Cardiology, Warsaw, Poland, [3]Medical University of Silesia, Katowice, Poland, [4]Medical University of Silesia, Silesian Center for Heart Diseases, Zabrze, Poland, [5]Military Hospital, Wroclaw, Poland

Background: Transcatheter aortic valve implantation (TAVI) has emerged as a new therapeutic option in high-risk patients with severe symptomatic tricuspid aortic valve stenosis (TriAV). However, due to its specific anatomical characteristics, stenosis of bicuspid aortic valve (BAV) is still considered a relative contraindication for TAVI. We sought to determine whether the results of TAVI in patients with BiAV are comparable to those with TriAV.
Methods: 385 TAVI was performed in 5 academic centers in Poland in the period between 01.01.2009 and 31.07.2012. Among them 26 patients with BAV (6,7%) were identified, and compared with controlled group of 78 patients with TriAV (ratio 3:1) matched according to the perioperative risk, delivery route and type of implanted bioprostehsis. One-year echocardiographic and clinical follow-up was performed. Device success and end-points were defined according to Valvular Academic Research Consortium guidelines (VARC).
Results: Baseline characteristics was similar in both groups (tab.1). Valves were successfully implanted in all patients and acute results after TAVI achieved in BAV were similar to that accomplished in TriAV (AVA: 1.58 cm2 vs 1.61 cm2 , p= 0.81; mean gradient: 12.3 mm vs 10.4 mm Hg, p= 0,12 and moderate-to-severe regurgitation: 34,6% vs 23%, p=0.46). All parameters remained stable during the mean 11.5 months of follow-up (AVA:1,67 cm2 vs. 1,62 cm2; mean gradient: 8,9 mm Hg vs. 12,1 mm Hg, p=0,23 and moderate-to-severe regurgitation: 27,3% vs 25,0 % p=0.91). The survival rate during the long-term follow-up was 82,1% in BAV vs. 83.3% in TriAV, p=0,94).

	Bicuspid n=26	Tricuspid n=78	P
Age	78,1 ± 5,04	79,3 ± 6,88	0,42
Gender	50% female	57% female	0,89
Euroscore	19,59 ± 9,2	19,08 ± 8,9	0,79
Valve type	84,6% CoreValve	80,7% CoreValve	0,91
Access type	TF=84,6%,	TF=73,1%,	0,63
DM	38,4%	35,9%	0,95
Hypertension	57,7%	65,3%	0,87
PAD	19,1%	30,8%	0,31
NYHA III+IV	76,9%	73,1%	0,81
EF	49,5%	50%	0,89
AVA	0,667	0,584	0,75
Mean gradient	57,45	52,46	0,68

Conclusions: The periprocedural and mid-term clinical and echocardiographic outcomes of TAVI in patients with BAV seem to be acceptable and fully comparable to those achieved in TriAV patients. Paravalvular regurgitation remains a major concern in both anatomies.

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Baseline Mitral Regurgitation Does Not Affect 30 Day to Two Year Mortality after Transcatheter Aortic-Valve Implantation (TAVI). A Report on 576 Patients from the Swedish TAVI Registry.

Andreas Rück[1], Magnus Settergren[2], Keita Yamasaki[3]
[1]Karolinska University Hospital, Stockholm, Sweden, [2]Karolinska University Hospital, Stocholm, Sweden, [3]Karolinska University Hospital, solna, stockholm

Background: Mitral Regurgitation (MR) is common in patients undergoing TAVI. There is conflicting data on the influence of preoperative MR on the outcome after TAVI.
Methods: We analysed all patients who underwent TAVI in between January 2008 and February 2012. Data was extracted from the Swedish TAVI registry. Survival data was available in all patients. 576 patients had reached one year follow-up and 373 patients had reached two years follow-up. Another 22 patients had incomplete data on MR and were not analysed andanother16 patients had incomplete follow-up data and were also excluded. The Medtronic CoreValve had been used in 306 cases and the Edwards Sapien in 270 cases. The most common access sites were transfemoral (n=390) and transapical (n=165). Patients were divided into two groups according to the degree of preoperative MR: mild group (463 patients, of which 142 patients MR grade 0/III, 321 patients MR I/III) and moderate group (113 patients, of which 103 patients MR grade II/III, 10 patients MR III/III).
Results: There was no significant difference between the mild and moderate MR group in mean age (81.3 vs 82.2 years, ns), baseline serum creatinine (108 vs. 113 micromol/L, ns). However patients in the moderate MR group more often had Left ventricular dysfunction (LVEF<35% in 21% vs. 38%, p<0.01) and more often had severe symptoms(NYHA IV in 15%vs 26% p=0.01).
Conclusions: In 576 TAVI patients, preoperative MR did not significantly influence mortality up to 2 years post-procedure. Thus it seems safe to perform TAVI in aortic stenosis patients with concomitant mitral valve regurgitation. It remains to be studied if preoperative MR predicts less improvement in symptoms in these elderly patients.

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Prosthetic Valve Infective Endocarditis following Transcatheter Aortic Valve Implantation: the Results of a Retrospective Multicenter Italian Registry

Charbel Naim[1], Azeem Latib[1], Michele De Bonis[2], Francesco Maisano[2], Alessandro Parolari[3], Marco Barbanti[4], Corrado Tamburino[5], Roberto Lorusso[6], Claudia Fiorina[7], Guglielmo Mario Actis Dato[8], Antonio Miceli[9], Alfredo Giuseppe Cerillo[10], Francesco Rosato[11], Omar Di Gregorio[11], Ugolino Livi[12], Carlo Di Vincentiis[13], Francesco Alamanni[14], Francesco Casilli[13], Manuela Muratori[14], Sandro Sponga[12], Antonio Colombo[15]
[1]San Raffaele Scientific Institute, Milan, Italy, [2]San Raffaele Hospital, Milan, Italy, [3]Centro Cardiologico Monzino IRCCS, Milano, Italy, [4]St. Paul's Hospital - University of British Columbia, Vancouver, British Columbia, [5]University of Catania, Catania, Italy, [6]Ospedale Civile di Brescia, Brescia, Italy, [7]Cardiac Catheterization Laboratory, Brescia, Italy, [8]Ospedale Mauriziano di Torino, Torino, Italy, [9]Ospedale del Cuore di Massa, Massa, Italy, [10]Fondazione Toscana, Massa, Italy, [11]Ospedale di Cuneo, Cuneo, Italy, [12]Cardio-thoracic Departement, Udine University Hospital, Udine, Italy, [13]Policlinico San Donato, Milan, Italy, [14]Centro Cardiologico Monzino IRCCS, Milan, Italy, [15]EMO GVM Centro Cuore Columbus/San Raffaele Hospital, Milan, Italy

Background: Prosthetic valve infective endocarditis (PIE) is a rare though serious complication with high morbidity and mortality. We aimed to examine the epidemiology, management strategies and outcomes of Transcatheter Aortic Valve Implantation(TAVI)associated PIE.
Methods: Between JAN 2008 and FEB 2013, 1785 consecutive patients underwent TAVI (1036 Edwards THV, 731 CoreValve, 18 DirectFlow) in 12 centers across Italy and were studied retrospectively. The diagnosis of PVE was defined according to the VARC-2 criteria by applying the modified Duke definitions.
Results: Post TAVI–PIE was diagnosed in 24 patients with an overall incidence of 1.34%, 8 early (<60 days) and 16 late. Based on the Duke criteria, 58% patients had definite and 42% probable endocarditis. The index procedure was performed transfemorally in 75% and transapically in 25%. In majority of cases (83%) the Edwards THV was implanted. Mean age was 80.4±5.7 years and median Log EuroSCORE =28.6 (14.3-34). Important comorbidities included diabetes (46%), CRF (42%), dialysis (4%), liver disease (21%), neoplasia(12%), and previous endocarditis (4%).On echocardiography 6 patients had aortic prosthetic valve vegetations, 1 with an associated MV vegetation, 3 had isolated MV vegetations, 2 had persistently high aortic valve gradients, 1 had severe central AR, 1 severe paravalvular leak and 2 paravalvular abscess. Available blood culture results are shown in table. Complications of TAVI-PIE included cerebrovascular accidents (21%), multi-organ failure and shock (29%). Management was surgical in 2 patients of whom 1 expired and the rest (22) were managed medically of whom 14 died (9 in-hospital and 5 after discharge), resulting in a total mortality 15/24 (63%).

Table 1. Blood Cultures

Blood Cultures	Days to TAVI-PIE
Staphylococcus aureus, MRSA	13
Staphylococcus epidermidis	35
Enterococcus faecalis	38
Haemophilus parainfluenzae	90
Granulicatella adiacens	106
Staphylococcus epidermidis	158
Escherichia coli, ESBL	180
Enterococcus faecalis	180
Streptococcus spp.	209
Streptococcus oralis	270
Enterococcus spp.	286
Staphylococcus aureus	324
Staphylococcus hominis	< 1 year
Streptococcus faecalis	390

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