Transcatheter aortic valve implantation (TAVI) has emerged as a new therapeutic option in high-risk patients with severe symptomatic 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 BAV 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 bioprosthesis. 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: 1.38 cm² vs 1.61 cm²; p=0.81; median gradient: 12.3 mm Hg 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=0.03 and moderate-to-severe regurgitation: 27.3% vs 25.0 % p=0.91). The survival rate during the long-term follow-up was 82.8% in BAV vs. 83.3% in TriAV (p=0.94).

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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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 and another16 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/II) 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 15.5% 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.