

COMPARISON OF CLINICAL AND ECHOCARDIOGRAPHIC RESULTS OF IMPLANTATION SMALL SIZE BIOLOGICAL A NEW SUTURELESS, STENTLESS AND MECHANICAL VALVE PROSTHESES IN PATIENTS WITH SEVERE STENOSIS AND NARROW AORTIC ANNULUS.

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Objective. Replacement of aortic prostheses in small native annulus is a clinical problem, because of different parameters determining their optimal implantation to eliminate the patient prosthesis mismatch.

We compared the clinical and hemodynamic 12 months performance of two types, small size ($\leq 23\text{mm}$) bioprostheses and one type of mechanical valve intend for implantation into small aortic root.

Material: 40 patients with mean age $68,2 \pm 21$ years NYHA class III and mean LVEF $57,1 \pm 6\%$, without coronary and other concomitant diseases who undergo valve replacement for severe isolated aortic stenosis with 21 and 23mm biological Solo stentless (15), 10 newest sutureless Perceval S self-expandable super elastic alloy valves and 15 mechanical OnX valves. EOA and transvalvular gradients were analyzed with reference to valve type and diameter, body surface area (BSA), exercise capacity in NYHA class and LV mass reduction.

Results: In follow up 35 patients (87,5%) have changed the NYHA class from III to I and 5 patients (12,5%) from class III to II. Results of 12 months observation represent the table below.

Valve	EF (%)	BSA (m ²)	MG (mmHg)	EOA (cm ²)	EOAI (cm ² /m ²)	NYHA I (% pts.)
SOLO (n=15)	55,6	1,67	11,2	1,58	0,94	80,0
Perceval S (n=10)	57,8	1,73	12,07	1,71	0,99	80,0
On X (n=15)	55,05	1,78	12,8	1,53	0,84	66,6

Conclusions: Perceval S valves as well as Solo bioprostheses revealed the best performance in aortic position with significant improvement of NYHA class and EOA in 12 months observation.

Sutureless self-expandable Perceval S valves seems to be the promising future option for older patients with small aortic annulus also because possibility of implantation larger valve than measured annulus and important shortening of implantation time

In patients with AS and good LV function implantation of mechanical small prostheses intended for implantation in narrow roots (OnX) gave in our observation borderline mismatch of these valves.