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Comparison Of Long Term Results Of Implantation Small Size Biological Stentless, Stented And Mechanical Prostheses In Aortic Position.

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Objectives:

Replacement of small size aortic prostheses is a clinical problem, because of different indications and parameters determining their optimal implantation in patients with narrow aortic root.

Method:

We studied 68 patients (pts) with mean age 63,4±21 years and mean LVEF 57,1±6% who undergo valve replacement (AVR) for aortic stenosis with 19-21mm biological and mechanical prostheses. LV mass, mass index, EOAI and transvalvular gradients were analyzed with reference to valve type and diameter, BSA and NYHA class.

Results:

After 3 years 43pts (63,2%) changed the NYHA from III to I and 17 pts (25%) from class III to II.

	BSA	LVmass (g)			LVmass index (g /m ²)			MG in3 years	EOAI
		before	3years	p	before	3years	%change		
Sorin	1,68	296,0	224,0	0,0507	176,12	133,33	24	17,2	0,867
SJ HP	1,72	268,11	212,0	0,0312	155,38	123,04	21	17,9	0,834
On-X [®]	1,81	321,0	241,0	0,0173	177,43	133,37	25	12,8	0,850
Medtronic	1,85	313,0	251,2	NS	169,0	135,97	20	20	0,761
Carbomedics	1,75	233,50	204,5	NS	133,17	116,85	13	19,1	0,802
Freestyle	1,84	353,7	273,3	0,0235	194,3	148,5	23,4	7,7	0,892
E-Magna	1,77	334,8	278,6	NS	211,1	164,8	21	12,1	0,720

Conclusions:

An optimal (EOAI≥85cm²/m²) implantation of small size mechanical prostheses gave in long term observation as good results as non stented bioprostheses or prostheses recommended for implantation in small aortic annulus. On-X valves and Medtronic freestyle bioprostheses revealed the best performance in aortic position with significant regression of LVmass and mass index independent on valve size and BSA.