

Survival and Quality of Life in patients with patient-prosthesis mismatch after aortic valve replacement with biological prosthesis

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Disclosure

Conflict of interest: None declared.

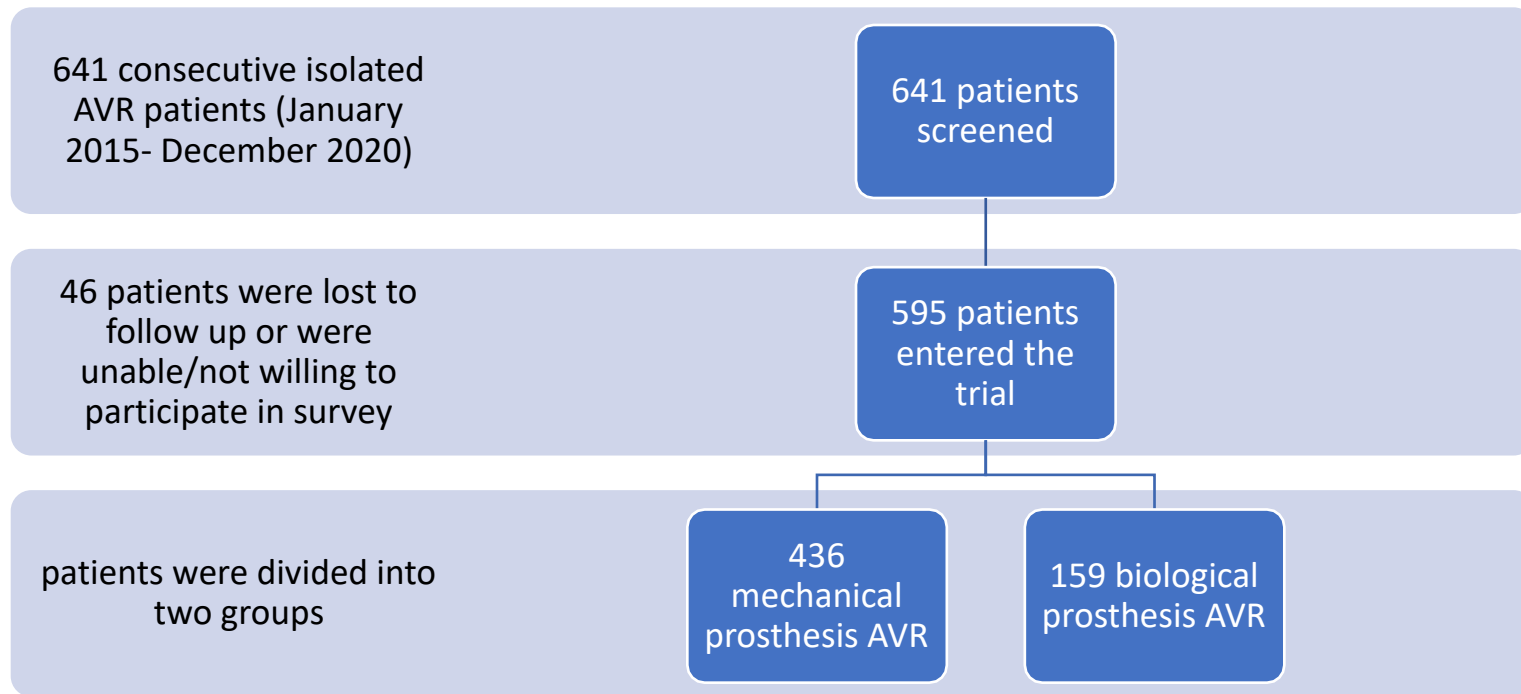


BACKGROUND

- The Impact of patient prosthesis mismatch (PPM) on
 1. (Long-term) Survival
 2. Quality of life
- Mechanical vs Biological prosthesis PPM
- The present study aimed to investigate the impact of mechanical vs biological prostheses with PPM after AVR on long-term survival and quality of life



PATIENTS



METHODS

- An observational study with prospective data collection
- PPM was defined as prosthesis indexed effective orifice area $\leq 0,85 \text{ cm}^2/\text{m}^2$
- Geometric orifice area provided by the manufacturer for each prosthesis was used for PPM calculation
- Quality of life was assessed by scoring the standardized questions from the 12 Item Short Form Survey (SF-12) quality of life questionnaire
- Survival analysis was conducted using the Kaplan-Meier's estimate



RESULTS

		Biological n=159	Mechanical n=436	P value
Age		69.9 ± 7.7	62.6 ± 12.1	0.001
Gender	male	78 (49.1)	262 (60.4)	0.014
	female	81 (50.9)	172 (39.6)	
Body surface area (m ² + SD)		1.9 + 0.3	2.3 + 7.4	0.451
Body mass index		27.7 + 11.7	27.9 + 12.8	0.806
Hypertension		131 (82.4)	364 (83.5)	0.752
Hyperlipoproteinemia		76 (47.8)	222 (50.9)	0.501
Chronic obstructive pulmonary disease		22 (13.8)	56 (12.8)	0.751
Chronic kidney disease		16 (10.1)	58 (13.3)	0.289
Diabetes mellitus		39 (24.5)	94 (21.6)	0.442
Previous stroke		5 (3.1)	18 (4.1)	0.582
Endocarditis		1 (0.6)	24 (5.5)	0.009



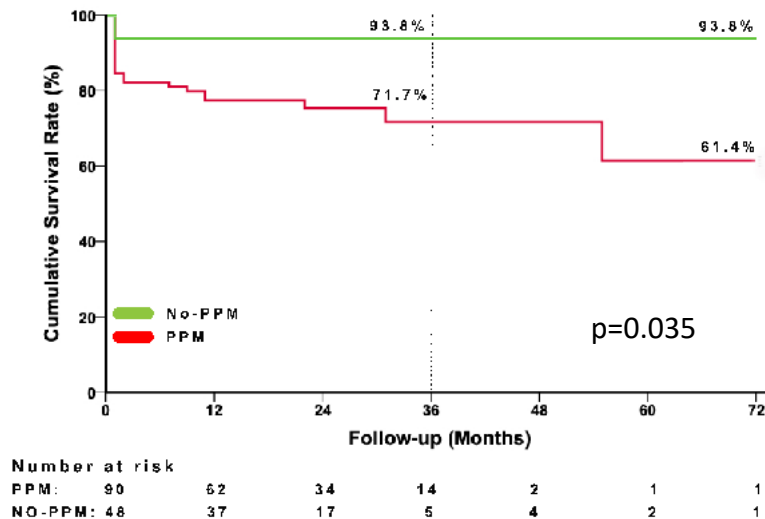
RESULTS

		Biological n=159	mechanical n=436	p
PPM (%+SD), moderate-to-severe		111 (69.8)	16 (3.7)	<0.001
Survival (%+SD)		133 (83.7)	381 (87.3)	0.239
Endocarditis (%+SD)		4 (2.5)	2 (0.5)	0.071
Redo surgery (%+SD)		3 (1.8)	5 (1.2)	0.527
Freedom from angina (%+SD)		114 (85.1)	340 (88.8)	0.280

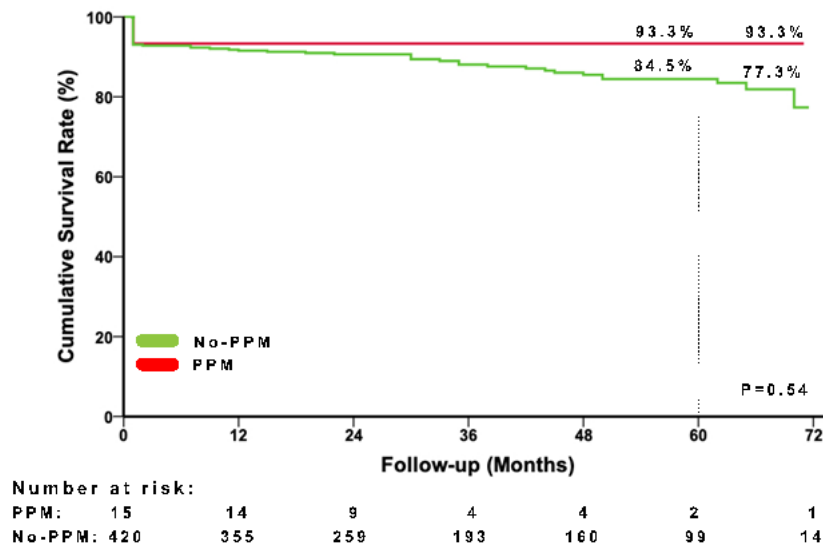


RESULTS - Survival

Survival in PPM and NO PPM group patients with biological prosthesis



Survival in PPM and NO PPM group patients with mechanical prosthesis



RESULTS-Quality Of Life

SF 12 questionnaire among patients with biological and mechanical prosthesis

		PPM	NO PPM	P
mechanical prostheses	Physical score	43.9 ± 9.4	46.9 ± 8.3	0.184
	Mental score	54.8 ± 4.4	53.5 ± 5.9	0.435
biological prostheses	Physical score	39.4 ± 8.4	45.7 ± 10.1	0.005
	Mental score	53.9 ± 6.1	53.1 ± 8.1	0.515



Conclusion

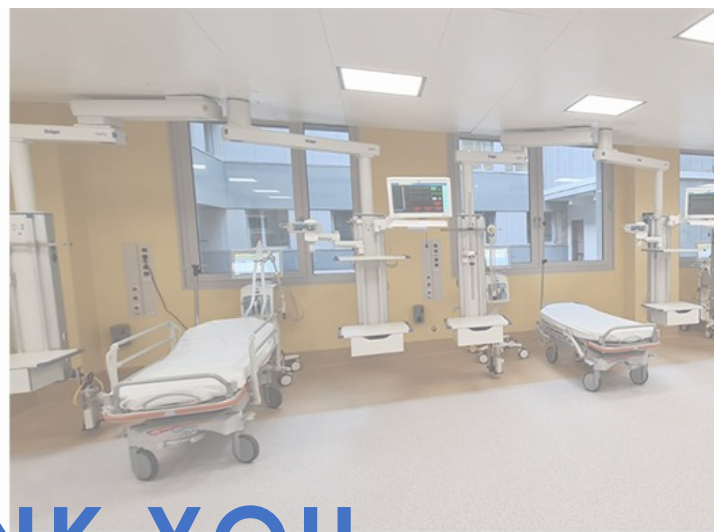
- AVR with mechanical prosthesis had less PPM than AVR with biological prosthesis in our study population
- Patients with biological prosthesis implanted that had PPM had worse long-term survival
- Patients with biological prosthesis and PPM had worse Quality of Life physical component score after long-term follow up



Take Home Message

- If the PPM after the implantation of a biological prosthesis is highly suspected surgeon should consider use of mechanical prosthesis, sutureless valve or root enlargement technique instead





THANK YOU



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