

SUTURELESS VALVE OUTCOMES IN ISOLATED AORTIC VALVE REPLACEMENT BY SURGICAL APPROACH FROM A PROSPECTIVE INTERNATIONAL REGISTRY

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OBJECTIVE

Sutureless valves have been in clinical use for more than 15 years. Aim of this study is to report clinical and haemodynamic performance from a real-word registry in patients who underwent aortic valve replacement (AVR) with the Perceval sutureless bioprosthesis, comparing outcomes by surgical approaches.

METHODS

- Prospective international registry
- 1652 patients implanted with a sutureless aortic valve in 55 institutions from 2011 to 2021.
- Postoperative, follow-up, and echocardiographic outcomes
- **Isolated AVR** (1051 pts) analyzed by **minimally invasive (MICS)** and **full sternotomy (full) approaches**.
- Preoperative covariates were adjusted with propensity score matching 2:1
- Final cohort of **857 isolated AVR:**
 - **558 patients in MICS**
 - **299 in full groups**

RESULTS – matched cohort

Baseline data	MICS (N=558)	FULL (N=299)
Age (years), mean (SD)	75.66 (6.5)	75.47 (7.16)
Female, N (%)	339 (60.8)	174 (58.2)
Dyslipidemia, N (%)	327 (58.6)	183 (61.2)
Diabetes, N (%)	157 (28.1)	83 (27.8)
Chronic lung disease, N (%)	67 (12.0)	30 (10.0)
Renal insufficiency, N (%)	50 (9.0)	31 (10.4)
Peripheral vascular disease, N (%)	15 (4.4)	14 (5.4)
Previous cardiac procedures, N(%)	73 (13.1)	59 (19.7)
Previous myocardial infarction, N (%)	24 (4.3)	15 (5.0)
Previous CVA, N (%)	15 (62.5)	7 (58.3)
Left Ventricular Ejection Fraction (%), mean (SD)	58.31 (9.53)	58.02 (11.05)
NYHA class II-III, N (%)	500 (89.6)	248 (83)
Preop sinus rhythm, N (%)	462 (82.8)	244 (81.6)
Endocarditis, N (%)	4 (0.7)	9 (3.0)
Bicuspid valve, N (%)	45 (8.1)	18 (6.0)

RESULTS – propensity matched analysis

	Overall	FULL	MICS	p
Intensive care unit stay (days); median [IQR]	1.92 [1.00, 2.19]	2.00 [1.00, 3.00]	1.00 [1.00, 2.00]	<0.001
Length of stay (days)	8.00 [7.00, 12.00]	9.00 [7.00, 14.00]	8.00 [7.00, 11.00]	0.043
Early (≤30 days) death (%)	5 (0.6)	2 (0.7)	3 (0.5)	1.000
Late (>30 days) death (%)	62 (7.2)	16 (5.4)	46 (8.2)	0.130
Early (≤30 days) reintervention (%)	4 (0.5)	1 (0.3)	3 (0.5)	1.000
Late (>30 days) reintervention (%)	15 (1.8)	0 (0.0)	15 (2.7)	0.002
Early (≤30 days) stroke (%)	4 (0.5)	2 (0.7)	2 (0.4)	0.614
Late (>30 days) stroke (%)	6 (0.7)	1 (0.3)	5 (0.9)	0.671
Early (≤30 days) pacemaker implant (%)	42 (4.9)	20 (6.7)	22 (3.9)	0.096
Late (>30 days) pacemaker implant (%)	21 (2.5)	5 (1.7)	16 (2.9)	0.357
MPG at discharge (mmHg) median [IQR]	13.00 [10.00, 16.08]	13.00 [10.00, 16.00]	13.00 [10.00, 17.00]	0.255
MPG at 1 year (mmHg) median [IQR]	11.00 [8.00, 15.00]	12.00 [9.00, 15.75]	11.00 [8.00, 15.00]	0.363

CONCLUSIONS

This registry represents the largest prospective real-world cohort of patients treated with the Perceval sutureless valve. Our propensity matched analysis demonstrates the **non-inferiority of minimally invasive surgery with regards to hard endpoints**, like mortality and stroke, **and better outcomes for secondary endpoints as reduced length of intensive care and in-hospital stay**.