

SUPPLEMENTARY DATA
Supplementary Table S1.

Continuous Quantitative Data											
ICU stay (days)						IMC stay (days)					
Variables	Unstandardized.Coefficients		Standardized.Coefficients		Sig.	Variables	Unstandardized.Coefficients		Standardized.Coefficients		Sig.
	B	Std. Error	Beta	t			B	Std. Error	Beta	t	
Obesity	-0.22	0.22	-0.04	-0.96	0.33	Obesity	0.14	0.22	0.02	0.67	0.50
NIDDM	-0.12	0.31	-0.01	-0.40	0.68	NIDDM	-0.01	0.29	-0.002	-0.04	0.96
Arterial HTN	-0.10	0.28	-0.01	-0.36	0.71	Arterial HTN	0.15	0.28	0.02	0.55	0.58
HLP	-0.13	0.24	-0.02	-0.56	0.57	HLP	-0.14	0.23	-0.02	-0.63	0.52
CCB	0.04	0.24	0.007	0.18	0.85	CCB	0.72	0.23	0.11	3.03	0.003
Pure AS	-0.61	0.34	-0.09	-1.78	0.07	Pure AS	0.32	0.33	0.05	0.96	0.33
Pure AR	-0.65	0.60	-0.05	-1.08	0.27	Pure AR	-0.35	0.58	-0.02	-0.61	0.53
Bicuspid valve	-0.39	0.60	-0.02	-0.64	0.51	Bicuspid valve	0.92	0.58	0.06	1.58	0.11
Moderate AR	-0.16	0.49	-0.02	-0.32	0.74	Moderate AR	0.61	0.48	0.08	1.26	0.20
Severe AR	-0.37	0.78	-0.02	-0.48	0.63	Severe AR	0.01	0.76	0.001	0.01	0.98
Moderate AS	-0.29	0.34	-0.04	-0.86	0.39	Moderate AS	0.07	0.32	0.01	0.21	0.83
Severe AS	-0.47	0.46	-0.04	-1.02	0.30	Severe AS	0.34	0.44	0.03	0.77	0.44
Hospital stay (days)						Discrete Quantitative Data					
Variables	Unstandardized.Coefficients		Standardized.Coefficients		Sig.	Arhythmic					
	B	Std. Error	Beta	t		Variables	B	S.E.	Wald	df	Sig.
Obesity	-0.32	0.60	-0.02	-0.54	0.58	Obesity	0.03	0.15	0.05	1	0.81
NIDDM	-1.01	0.82	-0.05	-1.24	0.21	NIDDM	0.09	0.23	0.16	1	0.68

<i>Arterial HTN</i>	0.68	0.76	0.03	0.89	0.37	<i>Arterial HTN</i>	-0.22	0.21	1.04	1	0.30
<i>HLP</i>	0.70	0.64	0.04	1.09	0.27	<i>HLP</i>	-0.01	0.18	0.004	1	0.94
<i>CCB</i>	0.05	0.65	0.003	0.07	0.93	<i>CCB</i>	0.01	0.18	0.009	1	0.92
<i>Pure AS</i>	0.47	0.91	0.02	0.52	0.59	<i>Pure AS</i>	-0.36	0.27	1.74	1	0.18
<i>Pure AR</i>	-3.83	1.59	-0.11	-2.41	0.01	<i>Pure AR</i>	-0.43	0.43	0.99	1	0.31
<i>Bicuspid valve</i>	1.17	1.60	0.02	0.73	0.46	<i>Bicuspid valve</i>	-0.38	0.43	0.78	1	0.37
<i>Moderate AR</i>	1.70	1.31	0.08	1.29	0.19	<i>Moderate AR</i>	-0.04	0.38	0.01	1	0.91
<i>Severe AR</i>	0.10	2.06	0.002	0.05	0.96	<i>Severe AR</i>	0.40	0.55	0.53	1	0.46
<i>Moderate AS</i>	-2.12	0.90	-0.12	-2.35	0.01	<i>Moderate AS</i>	0.09	0.23	0.14	1	0.70
<i>Severe AS</i>	-1.14	1.22	-0.04	-0.93	0.34	<i>Severe AS</i>	0.40	0.32	1.58	1	0.20

New-onset atrial fibrillation

Pneumothorax

<i>Variables</i>	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>df</i>	<i>Sig.</i>	<i>Variables</i>	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>df</i>	<i>Sig.</i>
<i>Obesity</i>	0.01	0.17	0.005	1	0.94	<i>Obesity</i>	-0.18	0.24	0.59	1	0.44
<i>NIDDM</i>	0.006	0.29	0.000	1	0.98	<i>NIDDM</i>	0.35	0.35	0.96	1	0.32
<i>Arterial HTN</i>	-0.08	0.26	0.10	1	0.74	<i>Arterial HTN</i>	-0.25	0.34	0.53	1	0.46
<i>HLP</i>	-0.12	0.21	0.31	1	0.57	<i>HLP</i>	0.29	0.30	0.99	1	0.32
<i>CCB</i>	-0.09	0.22	0.18	1	0.66	<i>CCB</i>	-0.18	0.28	0.39	1	0.53
<i>Pure AS</i>	-0.53	0.37	2.05	1	0.15	<i>Pure AS</i>	-1.08	0.56	3.65	1	0.05
<i>Pure AR</i>	-0.07	0.46	0.02	1	0.87	<i>Pure AR</i>	-1.12	0.76	2.13	1	0.14
<i>Bicuspid valve</i>	-0.04	0.45	0.008	1	0.93	<i>Bicuspid valve</i>	-0.34	0.72	0.22	1	0.63
<i>Moderate AR</i>	0.27	0.47	0.33	1	0.56	<i>Moderate AR</i>	-1.23	0.73	2.85	1	0.09
<i>Severe AR</i>	0.52	0.62	0.71	1	0.39	<i>Severe AR</i>	-0.01	0.84	0.000	1	0.98
<i>Moderate AS</i>	0.39	0.27	2.07	1	0.149	<i>Moderate AS</i>	-0.42	0.32	1.77	1	0.18

<i>Severe AS</i>	0.57	0.37	2.34	1	0.12	<i>Severe AS</i>	-0.75	0.54	1.90	1	0.16
Impella						30-day mortality					
<i>Variables</i>	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>df</i>	<i>Sig.</i>	<i>Variables</i>	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>df</i>	<i>Sig.</i>
<i>Obesity</i>	14.06	904.38	0.0	1	0.98	<i>Obesity</i>	-0.36	0.60	0.36	1	0.54
<i>NIDDM</i>	-7.36	3790.30	0.0	1	0.99	<i>NIDDM</i>	1.04	0.57	3.34	1	0.06
<i>Arterial HTN</i>	6.28	4204.19	0.0	1	0.99	<i>Arterial HTN</i>	-0.73	0.60	1.46	1	0.22
<i>HLP</i>	-13.60	1256.24	0.0	1	0.99	<i>HLP</i>	1.35	0.63	4.48	1	0.34
<i>CCB</i>	-1.75	3192.86	0.0	1	1.0	<i>CCB</i>	-1.47	0.59	6.13	1	0.01
<i>Pure AS</i>	7.46	6306.47	0.0	1	0.99	<i>Pure AS</i>	-0.63	0.72	0.75	1	0.38
<i>Pure AR</i>	-7.28	7359.97	0.0	1	0.99	<i>Pure AR</i>	-17.23	4525.95	0.0	1	0.99
<i>Bicuspid valve</i>	-2.09	4663.67	0.0	1	1.0	<i>Bicuspid valve</i>	2.28	1.38	2.71	1	0.09
<i>Moderate AR</i>	10.28	11458.91	0.0	1	0.99	<i>Moderate AR</i>	-0.81	1.24	0.42	1	0.51
<i>Severe AR</i>	3.85	8590.96	0.0	1	1.0	<i>Severe AR</i>	-14.34	5382.39	0.0	1	0.99
<i>Moderate AS</i>	11.43	3859.11	0.0	1	0.99	<i>Moderate AS</i>	0.15	0.79	0.03	1	0.84
<i>Severe AS</i>	3.57	21242.65	0.0	1	1.0	<i>Severe AS</i>	-16.83	3886.49	0.0	1	0.99

Supplementary Table S2.

Author	Year	Intervention	No. of Patients	Mean BMI (kg/m ²)	Male (n)	Mean age (year)	HTN (n)	DM (n)	EuroSCORE II	EF (%)	Study type
Cammertoni et al.	2024	FS	91	32.6 ± 1.2	54	69.2±13.1	75	22	ND	60.1±5.5	Cohort
		MS	91	32.9±1.3	55	68.6±14.5	76	18	ND	61.3±6.2	
Xie et al.	2022	FS	60	35.9 ± 4.5	32	60.1 ± 10.9	46	6	7.0 ± 6.1	59 ± 9.9	Cohort
		MS	60	34.9 ± 5.1	28	60.6 ± 11.3	43	5	7.0 ± 6.1	60.3 ± 8.3	
Mikus et al.	2020	FS	176	32.2 ± 2.2	82	72.7 ± 8.2	134	55	7.01 ± 1.5	59.7 ± 6.7	Cohort
		MS	271	32.8 ± 2.5	145	74.3 ± 7.5	203	64	6.7 ± 2.2	60 ± 7.5	
Pisano et al.	2017	FS	42	29.5 ± 8.5	21	76.5 ± 61.1	37	3	6.4 ± 3.8	--	Cohort
		MS	42	30.4 ± 6.1	15	76 ± 33.1	30	9	5.0 ± 4.6	--	
Welp et al.	2018	FS	91	33.11 ± 3.04	51	70.02 ± 10.51	87	35	7.96 ± 7.48	58.33 ± 10.82	Cohort
		MS	126	32.56 ± 3.09	69	69.79 ± 10.38	106	36	8.58 ± 8.78	55.16 ± 14.90	

Supplementary Table S3.

Author	Intervention	Renal Failure	AF	Re-Expl.	Respiratory insufficiency	Endocarditis	Need for PPM	Stroke	Wound dehiscence	ICU Stay	Hospital Stay
Cammertoni et al.	FS	0 (0%)	23 (25.3%)	5 (5.5%)	5 (5.5%)	ND	2 (2.2%)	1 (1.1%)	5 (5.5%)	3.2±1.4	7.2±1.9
	MS	0 (0%)	18 (19.8%)	3 (3.3%)	1 (1.1%)	ND	4 (4.4%)	1 (1.1%)	2 (2.2%)	1.8±1.2	6.7±2.1
Xie et al.	FS	2 (3.3%)	ND	0 (0%)	9 (15%)	ND	ND	ND	0 (0%)	2.7±5	14±15.9
	MS	3 (5%)	ND	1 (1.7%)	8 (13.3)	ND	ND	ND	1 (1.7%)	1.3±2.1	11±9.8
Mikus et al.	FS	8 (4.5%)	69 (39.2%)	ND	10 (5.7%)	ND	6 (3.4%)	ND	4 (2.3%)	2.2±0.9	7.6±1.4
	MS	4 (1.4%)	117 (43.2%)	ND	10 (3.7%)	ND	7 (2.6%)	ND	2 (0.7%)	1.9±0.2	7.3±2.2
Pisano et al.	FS	1 (2.1%)	10 (23.8%)	0 (0%)	2 (4%)	ND	2 (4.8%)	0 (0%)	0 (0%)	Prolonged stay 12 (30%)	Prolonged stays 33 (80%)
	MS	0 (0%)	6 (18.2%)	0 (0%)	0 (0%)	ND	1 (2.1%)	0 (0%)	1 (2%)	Prolonged stay 3 (7%)	Prolonged hospital stays 15 (35%)
Welp et al.	FS	2 (2.4%)	2 (2.2%)	4 (2.2%)	7 (7.7%)	ND	2 (2.2%)	5 (5.5%)	6 (6.6%)	2.6±6.8	11±9.7
	MS	2 (1.6%)	4 (3.2%)	3 (3.2%)	0 (0%)	ND	2 (1.6%)	2 (1.6%)	11 (8.7%)	2±4.7	10±13.1

Supplementary Table S4.

Author	Intervention	CPB Time	ACC Time	Operation Time	Early Mortality	Midterm Mortality	Late Mortality
Cammertoni et al.	FS	98.6±16.2	72.1±15.6	221.4±33.4	0 (0%)	1 (1.1%)	1 (1.1%)
	MS	109.6±17.5	69.6±14.1	246.6±32.1	1 (1.1%)	2 (2.2%)	2 (2.2%)
Xie et al.	FS	85.5±15.3	56.3±12.6	173.3±41.6	0 (0%)	ND	ND
	MS	90.6±16.5	62.3±14.4	176.3±38.4	0 (0%)	ND	ND
Mikus et al.	FS	68±23.9	56±21.6	ND	8 (4.5%)	ND	ND
	MS	63±20.8	55±19.3	ND	3 (1.1%)	ND	ND
Pisano et al.	FS	92.2±11.8	71.7±15.5	ND	0 (0%)	ND	ND
	MS	102.7±5.9	74.1±5.4	ND	0 (0%)	ND	ND
Welp et al.	FS	108.5±32.7	70±18.9	198.4±47.2	1 (1.09%)	ND	ND
	MS	107.4±24	76.4±18.8	194.1±37.4	1 (0.79%)	ND	ND

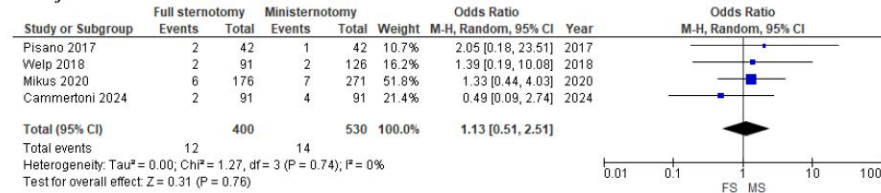
Supplementary Table S5.

Study	Selection				Comparability		Outcome		Score
	I	II	III	IV	V	VI	VII	VIII	
Cammertoni et al. 2024	*	*	*	*	**	*	*	--	8
Xie et al. 2022	*	*	*	*	**	*	--	--	7
Mikus et al. 2020	*	*	*	*	**	*	--	--	7
Pisano et al. 2017	*	*	*	*	**	*	--	--	7
Welp et al. 2018	*	*	*	*	**	*	--	--	7

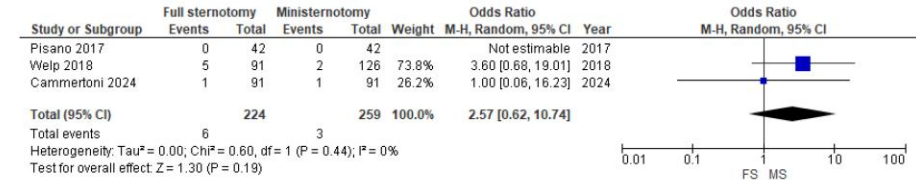
I, Representativeness of the exposed cohort; II, Selection of the non-exposed cohort; III, Ascertainment of exposure; IV, Demonstration that the outcome of interest was not present at start of study; V, Comparability of cohorts on the basis of the design or analysis; VI, Assessment of outcome; VII, Was follow-up long enough for outcomes to occur?; VIII, Adequacy of cohort follow-up.

Supplementary Figure 1.

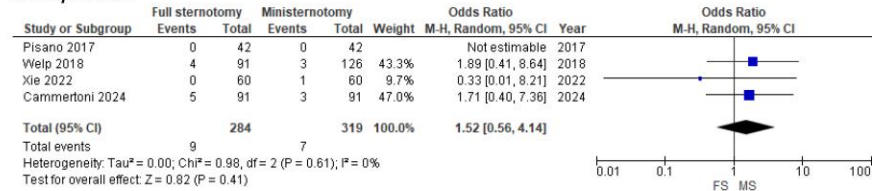
Need for PPM



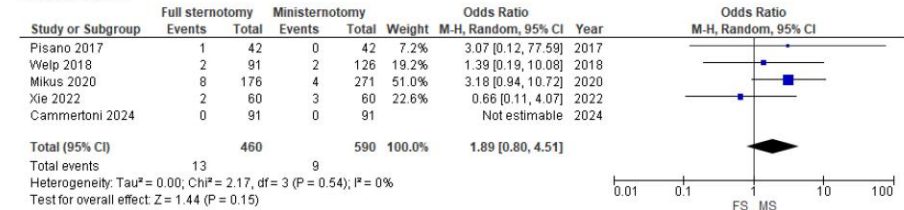
Stroke



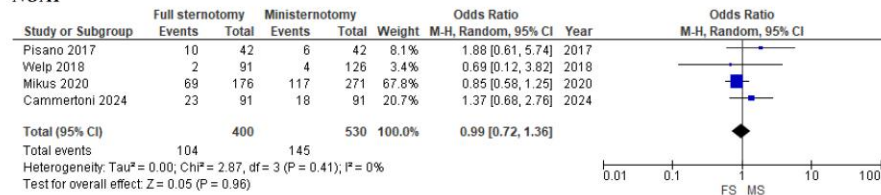
Re-Exploration



Renal Failure



NOAF



Wound dehiscence

