

SUPPLEMENTAL MATERIAL

Table S1. Procedural characteristics for TAVR in the unmatched cohort.

	IE-CS, n=20	IE-ABx, n=44	OR (95%-CI) or SMD (95%-CI)	P-value
Indication				
Native valve	19/20 (95.0)	42/44 (95.5)	0.91 (0.08; 10.60)	1.000
valve-in-valve	1/20 (5.0)	2/44 (4.5)		
Type of Valve				
All self-expandable, n (%)	7/20 (35.0)	30/44 (68.2)	0.25 (0.08; 0.77)	0.013
All balloon-expandable, n (%)	13/20 (65.0)	14/44 (31.8)		
Access site				
Trans-femoral, n (%)	15/20 (75.0)	42/44 (95.5)	0.14 (0.03; 0.82)	0.026
Trans-apical, n (%)	5/20 (25.0)	2/44 (4.5)		
Procedure Time [min]	47 (37; 65)	45 (36; 57)	-0.11 (-0.34; 0.34)	0.573
Contrast dye [ml]	113 (71; 138)	112 (95; 144)	0.14 (-0.25; 0.68)	0.487
Post-dilatation, n (%)	2/20 (10.0)	16/41 (39.0)	5.76 (1.18; 28.24)	0.02
Device success, n (%)	18/20 (90.0)	37/44 (84.1)	0.59 (0.11; 3.12)	0.708
Residual AI \geq grade 2, n (%)	0/13 (0)	6/40 (15.0)	n.a.	0.317
Residual mean gradient [mmHg]	11 (8; 16)	9 (7; 15)	-0.02 (-0.42; 0.59)	0.479

Aortic valve area [cm ²]	1.5 (1.2; 2.0)	1.8 (1.5; 2.4)	0.02 (-0.46; 0.78)	0.131
VARC Myocardial infarction, n (%)	0/20 (0)	0/43 (0)	n.a.	n.a.
VARC Stroke, n (%)	2/20 (10.0)	2/44 (4.5)	0.43 (0.06; 3.28)	0.583
VARC Renal Failure, n (%)	2/20 (10.0)	11/44 (25.0)	3.00 (0.60; 15.04)	0.201
VARC Bleeding, n (%)	8/20 (40.0)	14/44 (31.8)	0.70 (0.23; 2.10)	0.523
VARC Access site complication, n (%)	8/40 (40.0)	7/44 (15.9)	0.28 (0.09; 0.95)	0.055
New PPM/ICD, n (%)	5/20 (25.0)	10/44 (22.7)	0.88 (0.26; 3.03)	1.000

Variables are expressed as numbers and percentages or median (25th - 75th percentile) as appropriate. Treatment effect is given as odds ratio (OR) and standardized mean difference (SMD). VARC indicates valve academic research consortium; PPM, permanent pacemaker; ICD, implantable cardioverter defibrillator.

Table S2. Different indications for cardiac surgery in the unmatched and matched cohort.

Indications for cardiac surgery in the unmatched cohort				
	IE-CS, n=20	IE-ABx, n=44	OR (95%-CI)	P- value
Indication Heart failure, n (%)	11/20 (55.0)	17/43 (39.5)	0.54 (0.18; 1.56)	0.250
Indication sepsis/septic shock, n (%)	14/20 (70.0)	22/43 (51.2)	0.45 (0.15; 1.39)	0.160
Indication large vegetation, n (%)	14/20 (70.0)	18/43 (41.9)	0.31 (0.10; 0.96)	0.038
Indication structural complication, n (%)	7/20 (35.0)	11/43 (25.6)	0.64 (0.20; 2.01)	0.441
Indication systemic embolism, n (%)	5/20 (25.0)	7/43 (16.3)	0.58 (0.16; 2.13)	0.496
Indications for cardiac surgery in the matched cohort				
	IE-CS, n=20	IE-ABx, n=20	OR (95%-CI)	P- value
Indication Heart failure, n (%)	11/20 (55.0)	8/20 (40.0)	0.55 (0.16; 1.91)	0.342
Indication sepsis/septic shock, n (%)	14/20 (70.0)	14/20 (70.0)	1.00 (0.26; 3.87)	1.000
Indication large vegetation, n (%)	14/20 (70.0)	13/20 (65.0)	0.80 (0.21; 3.00)	0.736
Indication structural complication, n (%)	7/20 (35.0)	8/20 (40.0)	1.24 (0.34; 4.46)	0.744

Indication systemic embolism, n (%)	5/20 (25.0)	6/20 (30.0)	1.29 (0.32; 5.18)	0.723
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Variables are expressed as numbers and percentages. Treatment effect is given as odds ratio (OR).

Table S3. Procedural characteristics for TAVR in the matched cohort.

	IE-CS, n=20	IE-ABx, n=20	OR (95%-CI) or SMD (95%-CI)	P-value
Indication				
Native valve	19/20 (95.0)	20/20 (100)	n.a.	1.000
valve-in-valve	1/20 (5.0)	0/20 (0)		
Type of Valve				
All self-expandable, n (%)	7/20 (35.0)	15/20 (75.0)	0.18 (0.05; 0.70)	0.011
All balloon-expandable, n (%)	13/20 (65.0)	5/25 (25.0)		
Access site				
Trans-femoral, n (%)	15/20 (75.0)	20/20 (100)	n.a.	0.047
Trans-apical, n (%)	5/20 (25.0)	0/20 (0)		
Procedure Time [min]	47 (37; 65)	45 (34; 53)	-0.04 (-0.43; 0.57)	0.597
Contrast dye [ml]	113 (71; 138)	121 (89; 149)	0.23 (-0.23; 0.86)	0.357
Post-dilatation, n (%)	2/20 (10.0)	8/17 (47.1)	8.00 (1.40; 45.76)	0.023
Device success, n (%)	18/20 (90.0)	19/20 (95.0)	2.11 (0.18; 25.35)	1.000
Residual AI \geq grade 2, n (%)	0/13 (0)	1/18 (5.6)	n.a.	1.000
Residual mean gradient [mmHg]	11 (8; 16)	10 (7; 15)	-0.08 (-0.47; 0.52)	0.769
Aortic valve area [cm ²]	1.5 (1.2; 2.0)	1.9 (1.5; 2.3)	0.15 (-0.41; 1.02)	0.252

VARC Myocardial infarction, n (%)	0/20 (0)	0/20 (0)	n.a.	n.a.
VARC Stroke, n (%)	2/20 (10.0)	1/20 (1.000)	0.47 (0.04; 5.69)	1.000
VARC Renal Failure, n (%)	2/20 (10.0)	3/20 (15.0)	1.59 (0.24; 10.70)	1.000
VARC Bleeding, n (%)	8/20 (40.0)	9/20 (45.0)	1.23 (0.35; 4.31)	0.749
VARC Access site complication, n (%)	8/40 (40.0)	3/20 (15.0)	0.27 (0.06; 1.21)	0.077
New PPM/ICD, n (%)	5/20 (25.0)	4/20 (20.0)	0.75 (0.17; 3.33)	1.000

Variables are expressed as numbers and percentages or median (25th - 75th percentile) as appropriate. Treatment effect is given as odds ratio (OR) and standardized mean difference (SMD). VARC indicates valve academic research consortium; PPM, permanent pacemaker; ICD, implantable cardioverter defibrillator.

Table S4. Characteristics according to 1-year mortality (unmatched cohort).

	alive, n=21	dead, n=43	OR (95%-CI) or SMD (95%-CI)	p-value
Baseline (at diagnosis of IE)				
Age [years]	80.0±6.1	80.3±5.8	0.01 (-0.31; 0.45)	0.836
Male Sex [n/%]	16/21 (76.2)	22/43 (51.2)	0.33 (0.10; 1.05)	0.056
Body Mass Index [kg/m ²]	28.0 (24.2; 31.8)	28.3 (24.4; 32.1)	-0.04 (-0.30; 0.49)	0.838
STS-Score [%]	16.1 (8.8; 25.6)	21.8 (14.5; 35.1)	0.53 (0.05; 1.11)	0.025
NYHA III/IV, n (%)	17/20 (85.0)	29/41 (70.7)	0.43 (0.11; 1.73)	0.344
CAD, n (%)	8/21 (38.1)	24/43 (55.8)	2.05 (0.71; 5.97)	0.183
Diabetes mellitus, n (%)	7/21 (33.3)	23/43 (53.5)	2.30 (0.78; 6.82)	0.129
Atrial fibrillation, n (%)	10/21 (47.6)	31/42 (73.8)	3.10 (1.03; 9.30)	0.040
Prev. stroke, n (%)	5/21 (23.8)	5/43 (11.6)	0.42 (0.11; 1.66)	0.275
PAD, n (%)	3/21 (14.3)	13/43 (30.2)	2.60 (0.65; 10.38)	0.167
COPD, n (%)	8/21 (38.1)	10/43 (23.3)	0.49 (0.16; 1.52)	0.215
CKD stage ≥3b	7/20 (35.0)	26/41 (63.4)	3.22 (1.05; 9.84)	0.037
Immunosuppressive Therapy	3/21 (14.3)	8/43 (18.6)	1.37 (0.32; 5.81)	1.000
LV-ejection fraction [%]	57 (51; 65)	52 (43; 64)	-0.01 (-0.34; 0.44)	0.352

p mean aortic valve prosthesis, mmHg	10 (7; 20)	11 (7; 19)	-0.02 (-0.37; 0.49)	0.792
AI \geq 2, n (%)	4/21 (19.0)	1/38 (2.6)	0.12 (0.01; 1.11)	0.049
MI \geq 2, n (%)	1/21 (4.8)	10/38 (26.3)	7.14 (0.85; 60.36)	0.077
TI \geq 2, n (%)	2/21 (9.5)	7/37 (18.9)	2.22 (0.42; 11.81)	0.465
Procedural characteristics for TAVR				
Indication				
Native valve	19/21 (90.5)	42/43 (97.7)	0.23 (0.02; 2.65)	0.249
valve-in-valve	2/21 (9.5)	1/43 (2.3)		
Type of Valve				
All self-expandable, n (%)	10/21 (47.6)	27/43 (62.8)	0.54 (0.19; 1.55)	0.249
All balloon-expandable, n (%)	11/21 (52.4)	16/43 (37.2)		
Access site				
Trans-femoral, n (%)	19/21 (90.5)	38/43 (88.4)	1.25 (0.22; 7.05)	1.000
Trans-apical, n (%)	2/21 (9.5)	5/43 (11.6)		
Procedure Time [min]	41 (33; 48)	50 (38; 59)	0.37 (-0.10; 0.98)	0.138
Contrast dye [ml]	105 (88; 123)	120 (90; 160)	0.37 (-0.05; 0.90)	0.097
Post-dilatation, n (%)	6/19 (31.6)	12/42 (28.6)	0.87 (0.27; 2.81)	0.811
Device success, n (%)	15/21 (71.4)	40/43 (93.0)	5.33 (1.18; 24.09)	0.049

Residual AI \geq grade 2, n (%)	3/19 (15.8)	3/34 (8.8)	0.52 (0.09; 2.85)	0.655
Residual mean gradient [mmHg]	10 (7; 16)	9 (7; 14)	-0.05 (-0.38; 0.41)	0.933
Aortic valve area [cm ²]	1.7 (1.5; 2.6)	1.7 (1.4; 2.0)	-0.16 (-0.50; 0.36)	0.473
VARC Myocardial infarction, n (%)	0/21 (0)	0/42 (0)	n.a.	n.a.
VARC Stroke, n (%)	2/21 (9.5)	2/43 (4.7)	0.46 (0.06; 3.54)	0.592
VARC Renal Failure, n (%)	4/21 (19.0)	9/43 (20.9)	1.13 (0.30; 4.19)	1.000
VARC Bleeding, n (%)	4/21 (19.0)	18/43 (41.9)	3.06 (0.88; 10.64)	0.071
VARC Access site complication, n (%)	6/21 (28.6)	9/43 (20.9)	0.66 (0.20; 2.19)	0.540
New PPM/ICD, n (%)	4/21 (19.0)	11/43 (25.6)	1.46 (0.40; 5.29)	0.562
Endocarditis features				
Definite Endocarditis, n (%)	19/21 (90.5)	39/43 (90.7)	1.03 (0.17; 6.11)	1.000
Early Endocarditis, n (%)	15/21 (71.4)	29/43 (67.4)	0.83 (0.27; 2.60)	0.747
Time from TAVR, days	149 (39; 401)	197 (29; 594)	0.16 (-0.20; 0.63)	0.436
Nosocomial / health care associated, n (%)	6/21 (28.6)	21/43 (48.8)	2.39 (0.78; 7.31)	0.123
Initial symptoms				
Predisposition, n (%)	21/21 (100)	43/43 (100)	n.a.	n.a.

Fever >38.0%, n (%)	20/21 (95.2)	34/42 (81.0)	0.21 (0.03; 1.83)	0.251
Vascular phenomena, n (%)	3/21 (14.3)	9/43 (20.9)	1.59 (0.38; 6.61)	0.736
Heart Failure, n (%)	10/21 (47.6)	28/42 (66.7)	2.20 (0.76; 6.41)	0.145
Sepsis/septic shock, n (%)	2/21 (9.5)	22/42 (52.4)	10.45 (2.16; 50.63)	0.001
Indication for cardiac surgery, n (%)	12/21 (57.1)	38/42 (90.5)	7.13 (1.86; 27.34)	0.006
Indication Heart failure, n (%)	7/21 (33.3)	21/42 (50.0)	2.00 (0.67; 5.95)	0.209
Indication sepsis/septic shock, n (%)	7/21 (33.3)	29/42 (69.0)	4.46 (1.46; 13.65)	0.007
Indication large vegetation, n (%)	6/21 (28.6)	26/42 (61.9)	4.06 (1.31; 12.62)	0.013
Indication structural complication, n (%)	4/21 (19.0)	14/42 (33.3)	2.13 (0.60; 7.52)	0.237
Indication systemic embolism, n (%)	2/21 (9.5)	10/42 (23.8)	2.97 (0.59; 15.01)	0.307
Microbiological findings				
All <i>staphylococci</i> , n (%)	5/21 (23.8)	18/43 (41.9)	2.30 (0.71; 7.44)	0.158
Coagulase positive <i>staphylococci</i> , n (%)	4/21 (19.0)	13/43 (30.2)	1.84 (0.52; 6.55)	0.341
Coagulase negative <i>staphylococci</i> , n (%)	1/21 (4.8)	5/43 (11.6)	2.63 (0.29; 24.09)	0.654

<i>enterococci</i> , n (%)	8/21 (38.1)	16/43 (37.2)	0.96 (0.33; 2.83)	0.945
<i>streptococci</i> , n (%)	5/21 (23.8)	2/43 (4.7)	0.16 (0.03; 0.89)	0.034
fungi, n (%)	0/21 (0)	2/44 (4.7)	n.a.	0.542
others, n (%)	1/21 (4.8)	2/43 (4.7)	0.98 (0.08; 11.41)	1.000
BCNIE, n (%)	2/21 (9.5)	3/43 (7.0)	0.71 (0.11; 4.63)	1.000
Echocardiographic findings				
PVE +/- other valve	19/21 (90.5)	34/43 (79.1)	0.40 (0.08; 2.03)	0.341
Periannular abscess, n (%)	4/21 (19.0)	14/43 (32.6)	2.05 (0.58; 7.25)	0.259
Other valve, no PVE, n (%)	2/21 (9.1)	6/42 (14.3)	n.a.	0.704
Other valve + lead, no PVE, n (%)	0/21 (0)	3/43 (7.0)	n.a.	0.545
Complications during IE treatment				
Any complication, n (%)	10/21 (47.6)	31/42 (73.8)	3.10 (1.03; 9.30)	0.040
Need for haemodialysis, n (%)	2/21 (9.5)	17/42 (40.5)	6.46 (1.33; 31.42)	0.012
Cerebral embolism, n (%)	0/21 (0)	6/41 (14.6)	n.a.	0.088
Peripheral embolism, n (%)	2/21 (9.5)	9/41 (22.0)	2.67 (0.52; 13.69)	0.305
Limb ischemia, n (%)	0/21 (0)	2/41 (4.9)	n.a.	0.545
Bowl ischemia, n (%)	0/21 (0)	2/41 (4.9)	n.a.	0.545

CPR, n (%)	1/21 (4.8)	6/41 (14.6)	3.43 (0.39; 30.55)	0.406
>6 RBC within 24 h, n (%)	0/21 (0)	7/41 (17.1)	n.a.	0.084
ARDS, n (%)	0/21 (0)	1/41 (2.4)	n.a.	1.000
LCO, n (%)	1/21 (4.8)	6/41 (14.6)	3.43 (0.39; 30.55)	0.406
Critical illness PNP, n (%)	1/22 (4.5)	1/41 (2.4)	0.50 (0.03; 8.42)	1.000
Seizures, n (%)	2/21 (9.5)	2/41 (4.9)	0.49 (0.06; 3.73)	0.599
Therapy				
surgery	7/21 (33.3)	14/21 (66.7)	1.15 (0.38; 3.52)	0.802
Antibiotics only	13/43 (30.2)	30/43 (69.8)		

Variables are expressed as numbers and percentages, means \pm standard deviation or median (25th - 75th percentile) as appropriate. Treatment effect is given as odds ratio (OR) and standardized mean difference (SMD). BCNIE indicates blood culture negative infective endocarditis; CAD, coronary artery disease; CKD stage, chronic kidney disease stage; COPD, chronic obstructive lung disease; ICD, implantable cardioverter defibrillator; NYHA class, New York Heart Association class; PAD, peripheral artery disease; PPM, permanent pacemaker; PCI, percutaneous coronary intervention; RBC; red packed blood cells; STS, Society of Thoracic Surgeons score.

Table S5. Predictors of 1-year mortality (unmatched cohort).

	Univariate	p-value	Multivariate	p-value
	HR (95%-CI)		HR (95%-CI)	
Baseline (at diagnosis of IE)				
Age (per 1 year increase)	0.99 (0.95; 1.04)	0.815		
Male Sex	0.68 (0.37; 1.24)	0.205		
BMI (per 1 kg/m ² increase)	1.00 (0.94; 1; .05)	0.851		
STS-Score (per 10% increase)	1.17 (1.04; 1.31)	0.011	1.02 (0.99; 1.04)	0.105
NYHA III/IV	0.65 (0.33; 1.27)	0.208		
CAD	1.63 (0.89; 2.98)	0.113		
Diabetes mellitus	1.67 (0.91; 3.07)	0.095		
Atrial fibrillation/flutter	1.83 (0.91; 3.66)	0.088		
Prev. stroke	0.65 (0.20; 2.10)	0.470		
PAD	1.48 (0.77; 2.83)	0.241		
COPD	0.66 (0.33; 1.35)	0.257		
CKD stage ≥3b	2.69 (1.40; 5.16)	0.003	1.68 (0.82; 3.42)	0.157
Immunosuppressive Therapy	1.40 (0.65; 3.02)	0.391		
LV-ejection fraction (per 10% decrease)	1.09 (0.85; 1.39)	0.502		
AI ≥2	0.18 (0.03; 1.34)	0.095		

MI ≥2	2.82 (1.34; 5.92)	0.006	2.91 (1.33; 6.37)	0.008
TI ≥2	1.28 (0.56; 2.92)	0.562		
Balloon vs. self-expandable	0.65 (0.35; 1.21)	0.178		
Access site	0.94 (0.37; 2.40)	0.903		
Post-dilatation	1.06 (0.54; 2.08)	0.858		
VARC success	2.58 (0.80; 8.38)	0.114		
Endocarditis features				
Initial Heart failure	1.70 (0.89; 3.24)	0.107		
Initial Sepsis	4.12 (2.20; 7.72)	<0.001	4.03 (1.97; 8.24)	<0.001
Definite Endocarditis	0.70 (0.25; 2.00)	0.510		
Early Endocarditis	1.09 (0.58; 2.07)	0.784		
Nosocomial / health care associated	2.04 (1.11; 3.77)	0.022	1.12 (0.54; 2.31)	0.766
OP indications				
Any Indication for cardiac surgery	4.17 (1.48; 11.76)	0.007	6.20 (1.80; 21.41)	0.004
Microbiological findings				
<i>Staphylococci</i> vs. others	1.75 (0.95; 3.22)	0.072		
Echocardiographic findings				
PVE vs. other location	0.62 (0.30; 1.30)	0.205		

Periannular abscess	1.61 (0.85; 3.05)	0.147		
Complications prior to death				
Any complication	2.36 (1.18; 4.73)	0.015	1.79 (0.86; 3.71)	0.118
Therapy				
Antibiotics vs. surgery	1.29 (0.67; 2.48)	0.444	1.66 (0.77; 3.59)	0.196

BMI indicates body mass index; CAD, coronary artery disease; CKD stage, chronic kidney disease stage; COPD, chronic obstructive lung disease; NYHA class, New York Heart Association class; PAD, peripheral artery disease; PVE, prosthetic valve endocarditis; STS, Society of Thoracic Surgeons score; VARC, valve academic research consortium.