SUPPLEMENTARY DATA

Further in-hospital and 30-day outcomes of transfemoral transcatheter aortic valve implantation for aortic regurgitation

Rate of bleeding is 2.49% (95%CI, 00.00%-6.56%, Random Model, Heterogeneity: I²=66%, *P*-value=.05) (figure 1A of the supplementary data) with statistically significant heterogeneity, resolved by Leave-one-out sensitivity analysis and removal Vahl et al.¹ 2024. Figure 1B of the supplementary data, while vascular access complication rate is 5.2% (1.74%-9.69%, Random Model, Heterogeneity: I²=61%, *P*-value=.05) (figure 2A of the supplementary data) with statistically significant heterogeneity resolved by removal of Baumbach et al.²2023. (figure 2B of the supplementary data). The pooled rate of AKI is 5.92% (95%CI, 00.00%-13.86%, Random Model, Heterogeneity: I²=72%, *P*-value=.03) (figure 3A of the supplementary data) with statistically significant heterogeneity resolved by removal of either Adam et al.³ 2023 or Vahl et al.¹ 2024 (figure 3B of the supplementary data). The pooled rate of in-hospital mortality of patients with TF Jena valve is 0.00% (95%CI, 0.00%-4.70%, Random Model, Heterogeneity: I²=0%, *P*-value= 1.00) (figure 4 of the supplementary data). 30-day rate of stroke was 1.1% (95%CI, 0.0%-3.2%, I²=0%, *P*-value=.38) (figure 5 of the supplementary data).

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Table 1 of the supplementary data. Quality assessment of the included studies

Study ID	Qual	Quality assessment for single-arm observational studies according to the National Institute of Health (NIH) tool														
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q1 3	Q1 4	Overall Score	Overall quality
Garcia et al. ⁴ 2023	Υ	Υ	Y	Υ	CD	Y	Y	N	Y	N	Y	N	Y	CD	9	Good
Liu et al. ⁵ 2022	Υ	Υ	Υ	Υ	Υ	Υ	Υ	N	Υ	Υ	Υ	CD	Υ	N	11	Good
Liu et al. ⁶ 2020	Υ	Υ	Υ	Υ	Υ	Υ	Υ	N	Υ	N	Υ	N	N	N	9	Good
Huan Liu et al. ⁶ 2020	Υ	Υ	Υ	Υ	Υ	Y	Y	N	Y	Y	Υ	CD	Υ	N	11	Good
Liu et al. ⁷ 2019	Υ	Υ	Υ	Υ	Υ	Υ	Υ	N	Υ	Υ	Υ	CD	Υ	N	11	Good
Adam et al. ³ 2023	Υ	Υ	Υ	Υ	Υ	Y	Υ	N	Y	Y	Υ	N	Υ	N	11	Good
Baldus et al. ⁸ 2019	Υ	Υ	Υ	Υ	Υ	Y	Y	N	Y	Y	Υ	N	Y	N	11	Good
Silachi et al. ⁹ 2018	Υ	Υ	Υ	Υ	CD	Y	Y	N	Y	Y	Υ	CD	CD	N	9	Good
Seiffert et al. ¹⁰ 2014	Υ	Υ	Υ	Υ	CD	Y	Y	N	Y	Υ	Υ	N	Υ	CD	10	Good
Study ID	Qual	ity ass	sessmer	nt for be	efore an	d after	studie	es (pre-p	oost) with no contr	ol accord	ling to t	he NIH t	ool		1	•
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11		Q12		Overall Score	Overall quality
Vahl et al. 12024	Υ	Υ	Υ	Υ	Υ	Υ	Υ	N	Υ	N	NA		NA	•	8	Good
Study ID	Qual	ity as	sessmer	nt for co	mparat	ive obs	ervati	onal stu	idies according to N	Newcastl	e-Ottaw	va Scale	(NOS)	tool		
	Selec	tion							Compatibility	Outco	ome					
	Q1		Q2		Q3		Q4		Q5	Q6		Q7	Q8		Overall Score	Overall quality

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Kong al. ¹¹ 2022	et	*	*	*	*		**	*		*	8	Good
Sawaya et al. 2017	.12	*	*	*	*		**	*		*	8	Good
Yoon et al. 2017	.13	*	*	*	*		**	*	*	*	9	Good
Study ID	Quality assessment for case-series studies according to the NIH tool											
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Overall Score	Overall quality
Schlingloff al. ¹⁴ 2014	et	Υ	Υ	Υ	Υ	Υ	Υ	Υ	N	Υ	8	Good
Baumbach al. ¹⁵ 2023	et	Υ	Υ	CD	N	Υ	Υ	Υ	N	Υ	6	Fair
Ranard al. ¹⁶ 2022	et	Υ	Υ	CD	N	CD	Υ	Υ	Υ	N	6	Fair

NIH tool for single-arm observational studies: Q1: Was the study question or objective clearly stated? Q2: Was the study population clearly specified and defined? Q3: Was the participation rate of eligible persons at least 50%? Q4: Were all the subjects selected or recruited from the same or similar populations (including the same time period)? Were inclusion and exclusion criteria for being in the study prespecified and applied uniformly to all participants?, Q5: Was a sample size justification, power description, or variance and effect estimates provided?, Q6: For the analyses in this paper, was the exposure(s) of interest measured prior to the outcome(s) being measured?, Q7: Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?, Q8: For exposures that can vary in amount or level, did the study examine different levels of the exposure as related to the outcome (e.g., categories of exposure, or exposure measured as a continuous variable)?, Q9: Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?, Q10: Was the exposure(s) assessed more than once over time?, Q11: Were

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the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?, Q12: Were the outcome assessors blinded to the exposure status of participants?, Q13: Was loss to follow-up after baseline 20% or less?, Q14: Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)? NOS tool for Comparative Observational studies: Three domains: Selection, Compatibility and Outcome domains. Q1: Representativeness of the sample, Q2: Selection of the non-exposed cohort, Q3: Ascertainment of Exposure, Q4: Demonstration that that outcome of interest was not present at the start of the study, Q5: comparability Of cohorts on the basis of design or analysis controlled for confounders, Q6: Assessment of outcome, Q7: was follow up long enough for outcomes to occur, Q8: Adequacy of Follow-up. NIH tool for Case-series: Q1: Was the study question or objective clearly stated?, Q2:study population clearly and fully described, including a case definition?, Q3:Were the cases consecutive?, Q4; Were the subjects comparable?, Q5: Was the intervention clearly described? Q6: consistently across all study participants?, Q7: Was the length of follow-up adequate?, Q8:statistical methods well-described?, Q9: Were the results well-described? CD, cannot be determined; N, no; NA, not applicable; NIH, National Institutes of Health; NOS, Newcastle-Ottawa Scale; Y, yes.

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Figure 1 of the supplementary data. A. Bleeding. B. Leave-one-out sensitivity analysis of bleeding.

Α

Study or Subgroup	Events	Total	Weight	Proportion [95% CI]	Proportion,Random,95% CI
Adam 2023	0	58	49.3%	0.0000 [0.0000; 0.0616]	F-1
Baumbach 2023	1	12	6.1%	0.0833 [0.0021; 0.3848]	• • • • • • • • • • • • • • • • • • •
Vahl 2024	8	180	44.6%	0.0444 [0.0194; 0.0857]	
Total of subgroup	9	250	100.0%	0.0249 [0.0000; 0.0656]	
Heterogeneity: Tau ² = 0.0	0007; Chi ² = 5.91	, df = 2 (P = 0.	05); I ² = 66%		
Total (95% CI)	9	250	100.0%	0.0249 [0.0000; 0.0656]	-
Prediction interval				[0.0000; 0.4585]	
Heterogeneity: Tau ² = 0.0	0007; Chi ² = 5.91	, df = 2 (P = 0.	05); I ² = 66%		0 0.1 0.2 0.3 0.4
Test for subgroup differe	nces: Chi ² = 0.00), df = 0 (P = N	(A)		

B.

Study		Proportion	95%-CI P-va	ue Tau2	Tau	12
Omitting Adam 2023 Omitting Baumbach 2023 Omitting Vahl 2024	- 	0.0167	[0.0163; 0.0754] [0.0000; 0.0352] [0.0000; 0.0250]	. 0.0008 . 0.0002		81%
Common effect model	-0.06-0.04-0.02 0 0.02 0.04 0.06	0.0176	[0.0000; 0.0360]	. 0.0007	0.0271	66%

95%CI, 95% confidence interval. The bibliographical references mentioned in this figure correspond to:

Adam et al.³ 2023, Baumbach et al.¹⁵ 2023, Vahl et al.¹ 2024.

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Figure 2 of the supplementary data. A. Vascular access complication. B. Leave-one-out sensitivity analysis of need of vascular access complication.

A.

Study or Subgroup	Events	Total	Weight	Proportion [95% CI]	Proportion,Random,95% CI
Adam 2023	4	58	26.9%	0.0690 [0.0191; 0.1673]	<u>.</u>
Baumbach 2023	5	12	2.0%	0.4167 [0.1517; 0.7233]	:
Baldus 2019	1	12	6.1%	0.0833 [0.0021; 0.3848]	
Vahl 2024	7	180	65.1%	0.0389 [0.0158; 0.0785]	≓
Total of subgroup	17	262	100.0%	0.0572 [0.0174; 0.0969]	
Heterogeneity: $Tau^2 = 0$.	0004; Chi ² = 7.7,	df = 3 (P = 0.0	5); I ² = 61%		•
Total (95% CI)	17	262	100.0%	0.0572 [0.0174; 0.0969]	÷
Prediction interval				[0.0000; 0.1816]	
Heterogeneity: $Tau^2 = 0$.	0004; Chi ² = 7.70), df = 3 (P = 0.	05); I ² = 61%		0 0.1 0.2 0.3 0.4 0.5 0.6 0.7
Test for subgroup differe	ences: Chi ² = 0.0	0. df = 0 (P = N	IA)		

В

Study		Proportion	95%-CI P-value	Tau2	Tau	12
Omitting Adam 2023 Omitting Baumbach 2023 Omitting Baldus 2019 Omitting Vahl 2024		0.0447 0.0468	[0.0191; 0.0703] [0.0210; 0.0726]	0.0223 0 0.0204 0.0164	0 0.1427	0% 73%
Common effect model	-0.1 -0.05 0 0.05 0.1	0.0478 [[0.0223; 0.0733]	0.0004	0.0206	61%

95%CI, 95% confidence interval. The bibliographical references mentioned in this figure correspond to:

Adam et al.³ 2023, Baumbach et al.¹⁵ 2023, Baldus et al.⁸ 2019, Vahl et al.¹

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Figure 3 of the supplementary data. A: AKI. B. Leave-one-out sensitivity analysis of need of vascular access complication. B. Leave-one-out sensitivity analysis of AKI.

A.

Study or Subgroup	Events	Total	Weight	Proportion [95% CI]	Proportion,Random,95% CI
Adam 2023	7	58	32.6%	0.1207 [0.0499; 0.2330]	
Baumbach 2023	1	12	17.1%	0.0833 [0.0021; 0.3848]	
Vahl 2024	2	180	50.3%	0.0111 [0.0013; 0.0396]	
Total of subgroup	10	250	100.0%	0.0592 [0.0000; 0.1386]	
Heterogeneity: $Tau^2 = 0.0$	0032; Chi ² = 7.08	df = 2 (P = 0)	03); I ² = 72%		
Total (95% CI)	10	250	100.0%	0.0592 [0.0000; 0.1386]	÷
Prediction interval				[0.0000; 0.9430]	
Heterogeneity: $Tau^2 = 0.0$			• •		0 0.2 0.4 0.6 0.8
Test for subgroup differe	nces: Chi ² = 0.00	0, df = 0 (P = N)	IA)		

B.

Study		Proportion	95%-CI	P-value	Tau2	Tau	12
Omitting Adam 2023 Omitting Baumbach 2023 Omitting Vahl 2024	B B B B B B B B B B B B B B B B B B B	0.0146	[0.0000; 0.0270] [0.0000; 0.0297] [0.0385; 0.1862]	-	0 0.0051 0	0 0.0711 0	0% 84% 0%
Common effect model	-0.15 -0.1 -0.05 0 0.05 0.1 0.15	0.0153	[0.0003; 0.0303]		0.0032	0.0566	72 %

95%CI, 95% confidence interval.

The bibliographical references mentioned in this figure correspond to: Adam et al.³ 2023, Baumbach et al.¹⁵ 2023, Vahl et al.¹ 2024.

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Figure 4 of the supplementary data. In-hospital mortality.

Study or Subgroup	Events	Total	Weight	Proportion [95% CI]	Proportion,Random,95% CI
Adam 2023	0	58	9.6%	0.0000 [0.0000; 0.0616]	
Baldus 2019	0	12	0.5%	0.0000 [0.0000; 0.2646]	<u> </u>
Vahl 2024	0	180	89.9%	0.0000 [0.0000; 0.0203]	<u> </u>
Total of subgroup	0	250	100.0%	0.0000 [0.0000; 0.0073]	Ç
Heterogeneity: Tau ² = 0;	$Chi^2 = 0$, $df = 2$ (F	$P = 1.00$); $I^2 = 0$	9%		
Total (95% CI)	0	250	100.0%	0.0000 [0.0000; 0.0073]	•
Prediction interval				[0.0000; 0.0470]	<u> </u>
Heterogeneity: Tau ² = 0;	$Chi^2 = 0.00$, df = 3	2 (P = 1.00); I ²	= 0%		0 0.05 0.1 0.15 0.2 0.25
Test for subgroup differe	ences: Chi ² = 0.00), df = 0 (P = N	A)		

95%CI, 95% confidence interval. The bibliographical references mentioned in this figure correspond to:

Adam et al.³ 2023, Baldus et al.⁸ 2019, Vahl et al.¹ 2024.

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Figure 5 of the supplementary data. 30 days stroke.

Study or Subgroup	Events	Total	Weight	Proportion [95% CI]	Proportion,Random,95% CI
Adam 2023	0	58	45.8%	0.0000 [0.0000; 0.0616]	<u> </u>
Baldus 2019	0	12	3.7%	0.0000 [0.0000; 0.2646]	+-
Vahl 2024	4	180	50.5%	0.0222 [0.0061; 0.0559]	
Total of subgroup	4	250	100.0%	0.0112 [0.0000; 0.0316]	
Heterogeneity: Tau ² = <	0.0001; Chi ² = 1.9	93, df = 2 (P =	0.38); $I^2 = 0\%$		
Total (95% CI)	4	250	100.0%	0.0112 [0.0000; 0.0316]	-
Prediction interval				[0.0000; 0.1914]	
Heterogeneity: Tau ² < 0.	0001; Chi ² = 1.93	s, df = 2 (P = 0.	38); I ² = 0%		0 0.05 0.1 0.15 0.2 0.25
Test for subgroup differe	ences: Chi ² = 0.00	0, df = 0 (P = N	IA)		

95%CI, 95% confidence interval. The bibliographical references mentioned in this figure correspond to:

Adam et al.³ 2023, Baldus et al.⁸ 2019, Vahl et al.¹ 2024.

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Figure 6 of the supplementary data. Leave-one-out sensitivity analysis of 30 days mild PVR.

Study		Proportion	95%-CI P-valu	ie Tau2	Tau	12
Omitting Adam 2023 Omitting Baumbach 2023 Omitting Ranard 2022 Omitting Baldus 2019 Omitting Vahl 2024		0.0977 0.1125 0.0988	[0.0979; 0.1932] [0.0611; 0.1342] [0.0743; 0.1506] [0.0623; 0.1354] [0.0000; 0.0952]	. 0.0059 . 0.0059	0.0861 0.0771 0.0767 0.0821 0.0029	79% 76% 81%
Common effect model	-0.15-0.1-0.05 0 0.05 0.1 0.15	0.1010	[0.0649; 0.1371]	. 0.0061	0.0781	75%

PVR: The bibliographical references mentioned in this figure correspond to: Adam et al.³ 2023, Baumbach et al.¹⁵ 2023, Ranard et al.¹⁶ 2022, Baldus et al.⁸ 2019, Vahl et al.¹ 2024.

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