

Table S1. Classification of Chronic Inflammatory Diseases

Category	Conditions
1. Rheumatoid Arthritis	Rheumatoid Arthritis
2. Vasculitis	Giant Cell Vasculitis
	Takayasu Arteritis
	Granulomatosis with Polyangiitis
	Eosinophilic Granulomatosis with Polyangiitis
	Microscopic Polyangiitis
3. Collagenosis/Connective Tissue Disorders	Systemic Sclerosis
	Systemic Lupus Erythematosus
	Sjögren Syndrome
	Dermatomyositis
	Polymyositis
	Mixed Connective Tissue Disease
	Undifferentiated Connective Tissue Disease
4. Sarcoidosis	Sarcoidosis
5. Polymyalgia Rheumatica	Polymyalgia Rheumatica
6. Psoriasis Arthritis	Psoriatic Arthritis
7. Ankylosing Spondylitis	Ankylosing Spondylitis
8. Chronic Inflammatory Bowel Disease	Crohn Disease
	Ulcerative Colitis

Note: This classification represents an exhaustive list of chronic inflammatory diseases included in the study. This categorization provides a comprehensive overview of the inflammatory conditions analyzed in this research.

Table S2. International Classification of Diseases, 10th Revision Diagnostic and Procedure Codes for Study Variables

Variable Category	ICD-10 Codes
Aortic Stenosis	I35.0
Procedures	
TAVI	02RF3*
SAVR	02RF0*
CABG	0210*, 0211*, 0212*, 0213*
Mitral Valve Surgery	02RG*, 02QG*, 02UG*
Pulmonary Valve Surgery	02RH*, 02QH*, 02UH*
Tricuspid Valve Surgery	02RJ*, 02QJ*, 02UJ*

Aortic Root Surgery	02RX*, 02QX*, 02UX*
Comorbidities	
Congestive heart failure	I09.9, I11.0, I13.0, I13.2, I25.5, I42.0, 142.5-I42.9, I43.x, I50.x, P29.0
Smoking	F17.x, Z72.0, Z87.891
Hypertension	I10.x-I13.x, I15.x
Dyslipidemia	E78.x
Diabetes Mellitus	E10.x-E14.x
Peripheral Vascular Disorders	I70.x, I71.x, I73.1, I73.8, I73.9, I77.1, I79.0, I79.2, K55.1, K55.8, K55.9, Z95.8, Z95.9
Chronic Pulmonary Disease	I27.8, I27.9, J40.x-J47.x, J60.x-J67.x, J68.4, J70.1, J70.3
Renal Failure	I12.0, I13.1, N18.x, N19.x, N25.0, Z49.0-Z49.2, Z94.0, Z99.2
Obesity	E66.x
Medical History	
Prior Stroke	Z86.73
Prior MI	I25.2
Prior PCI	Z95.5
Prior CABG	Z95.1
Medications	
Corticosteroid use	Z79.52
Chronic Inflammatory Diseases	
Rheumatoid Arthritis	M05.x, M06.x
Giant Cell Arteritis	M31.5, M31.6
Takayasu Arteritis	M31.4
Eosinophilic Granulomatosis with Polyangiitis	M31.3, M31.30, M31.31
Eosinophilic Granulomatosis	J82.83
Microscopic Polyangiitis	M31.7
Systemic Sclerosis	M34.x
Systemic Lupus Erythematosus	M32.x
Sjögren Syndrome	M35.0
Dermatomyositis	M33.0, M33.1, M33.9
Polymyositis	M33.2
Mixed Connective Tissue Disease	M35.1
Undifferentiated Connective Tissue	M35.9

Disease	
Sarcoidosis	D86.x
Polymyalgia Rheumatica	M35.3
Psoriatic Arthritis	L40.5
Ankylosing Spondylitis	M45.x
Crohn disease	K50.x
Ulcerative Colitis	K51.x

Note: * indicates that all subsequent digits are included.

Abbreviations: ICD-10, International Classification of Diseases, Tenth Revision; TAVI, transcatheter aortic valve implantation; SAVR, surgical aortic valve replacement; MI, myocardial infarction; PCI, percutaneous coronary intervention; CABG, coronary artery bypass grafting.

Table S3. Sex-Based Differences in Baseline Characteristics Among Patients with Chronic Inflammatory Disease Undergoing Transcatheter Aortic Valve Implantation Before and After PSM

Characteristics	Before Matching				After Matching			
	Male (n=1226)	Female (n=1939)	Std Dif f	P Value	Female (n=979)	Male (n=979)	Std Dif f	P Value
Demographics								
Age, y	78.40 ± 7.41	78.33 ± 8.07	0.0 1	0.813	78.40 ± 7.57	78.07 ± 8.65	0.0 4	0.365
Race, %			0.1 7	<0.001 *			0.1 6	0.008*
White	1102 (92.06)	1645 (87.22)			892 (91.11)	861 (87.95)		
Black	33 (2.76)	99 (5.25)			29 (2.96)	53 (5.41)		
Hispanic	31 (2.59)	87 (4.61)			29 (2.96)	44 (4.49)		
Other	31 (2.59)	55 (2.92)			29 (2.96)	21 (2.15)		
Primary Payer, %			0.2 3	<0.001 *			0.1 9	<0.001 *
Medicare/Medicaid	1078 (88.07)	1776 (91.69)			868 (88.66)	869 (88.76)		
Private Insurance	7 (0.57)	23			7	11		

		(1.19)		(0.72)	(1.12)		
Self-pay	94	127		72	91		
	(7.68)	(6.56)		(7.35)	(9.30)		
No charge/Other	45	11		32	8		
	(3.68)	(0.57)		(3.27)	(0.82)		
Median Household			0.1	0.014*		0.1	0.206
Income			2			0	
Quartile, %							
0-25th	189	370		162	198		
	(15.59)	(19.27)		(16.55)	(20.22)		
26-50th	313	470		245	241		
	(25.83)	(24.48)		(25.03)	(24.62)		
51-75th	370	513		286	268		
	(30.53)	(26.72)		(29.21)	(27.37)		
76-100th	340	567		286	272		
	(28.05)	(29.53)		(29.21)	(27.78)		
Hospital							
Characteristics							
Hospital			0.1	0.075		0.1	0.166
Region, %			0			0	
Northeast	341	523		249	238		
	(27.81)	(26.97)		(25.43)	(24.31)		
Midwest	361	642		301	345		
	(29.45)	(33.11)		(30.75)	(35.24)		
South	330	457		264	234		
	(26.92)	(23.57)		(26.97)	(23.90)		
West	194	317		165	162		
	(15.82)	(16.35)		(16.85)	(16.55)		
Hospital Teaching			0.0	0.273		0.0	0.572
Status, %			6			5	
Rural	19	26		15	14		
	(1.55)	(1.34)		(1.53)	(1.43)		
Urban Non-	96	183		78	91		
Teaching	(7.83)	(9.44)		(7.97)	(9.30)		
Urban Teaching	1111	1730		886	874		
	(90.62)	(89.22)		(90.50)	(89.27)		
Hospital Bed			0.0	0.134		0.0	0.781

Size, %			7				3	
Small	97 (7.91)	136 (7.01)			78 (7.97)	77 (7.87)		
Medium	306 (24.96)	436 (22.49)			201 (20.53)	189 (19.31)		
Large	823 (67.13)	1367 (70.50)			700 (71.50)	713 (72.83)		
Clinical								
Characteristics								
Current Smoking	628 (51.22)	574 (29.60)	0.4 5	<0.001 *	427 (43.62)	420 (42.90)	0.0 1	0.749
Corticosteroid Use	223 (18.19)	276 (14.23)	0.1 1	0.003*	133 (13.59)	151 (15.42)	0.0 5	0.248
Comorbidities, %								
Congestive Heart Failure	611 (49.84)	974 (50.23)	0.0 1	0.829	506 (51.69)	488 (49.85)	0.0 4	0.416
Hypertension	1041 (84.91)	1701 (87.73)	0.0 8	0.023*	873 (89.17)	847 (86.52)	0.0 8	0.072
Dyslipidemia	920 (75.04)	1269 (65.45)	0.2 1	<0.001 *	709 (72.42)	701 (71.60)	0.0 2	0.687
Diabetes Mellitus	421 (34.34)	560 (28.88)	0.1 2	0.001*	331 (33.81)	312 (31.87)	0.0 4	0.361
Prior Stroke	146 (11.91)	231 (11.91)	0.0 0	0.997	113 (11.54)	134 (13.69)	0.0 6	0.153
Prior MI	174 (14.19)	171 (8.82)	0.1 7	<0.001 *	120 (12.26)	110 (11.24)	0.0 3	0.483
Prior PCI	235 (19.17)	237 (12.22)	0.1 9	<0.001 *	173 (17.67)	163 (16.65)	0.0 3	0.549
Prior CABG	193 (15.74)	83 (4.28)	0.3 9	<0.001 *	81 (8.27)	78 (7.97)	0.0 1	0.804
Peripheral Vascular Disease	267 (21.78)	363 (18.72)	0.0 8	0.036*	206 (21.04)	197 (20.12)	0.0 2	0.615
Chronic Pulmonary Disease	325 (26.51)	595 (30.69)	0.0 9	0.012*	276 (28.19)	283 (28.91)	0.0 2	0.726
Renal Failure	404 (32.95)	573 (29.55)	0.0 7	0.044*	327 (33.40)	328 (33.50)	0.0 0	0.962

Obesity	220 (17.94)	432 (22.28)	0.1 1	0.003*	198 (20.22)	204 (20.84)	0.0 2	0.737
Clinical								
Outcomes, %								
AIS	29 (2.37)	26 (1.34)	0.0 8	0.032*	27 (2.76)	12 (1.23)	0.1 1	0.015*
In-Hospital Mortality	9 (0.73)	19 (0.98)	0.0 3	0.472	8 (0.82)	8 (0.82)	0.0 0	1.000
Length of Stay, d	2.97 ± 3.50	3.37 ± 3.58	0.1 1	<0.001 *	3.11 ± 3.66	3.16 ± 3.33	0.0 1	0.748
Total Charges, \$	202,904 ± 130,640	210,212 ± 122,825	0.0 6	0.047*	206,43 8 ± 135,57	207,47 3 ± 116,94	0.0 1	0.857
					4	3		

Data are presented as mean ± SD or n (%).

Abbreviations: AIS, acute ischemic stroke; MI, myocardial infarction; PCI, percutaneous coronary intervention; CABG, coronary artery bypass grafting; SD, standard deviation; Std Diff, standardized difference; TAVI, transcatheter aortic valve implantation.

*Indicates statistically significant differences at P<0.05.

Table S4. Associations Between Sex and Clinical Outcomes in Patients with Chronic Inflammatory Disease Undergoing Transcatheter Aortic Valve Implantation after PSM

Outcome	Male	Female	P Value
AIS			
Non-adjusted OR (95% CI)	Ref.	0.44 (0.22–0.87)	0.018*
Adjusted Model OR (95% CI)	Ref.	0.44 (0.22–0.87)	0.018*
In-hospital Mortality			
Non-adjusted OR (95% CI)	Ref.	1.00 (0.37–2.68)	1.000
Adjusted Model OR (95% CI)	Ref.	0.97 (0.36–2.61)	0.957

Adjusted Model: Adjusted for Propensity Score

Abbreviations: AIS, acute ischemic stroke; PSM, propensity score matching; CI, confidence interval; OR, odds ratio.

*Indicates statistically significant differences at P<0.05.

Table S5. Sex-Based Differences in Baseline Characteristics among Patients with Arthritis Inflammatory Disease Undergoing Transcatheter Aortic Valve Implantation after PSM

Characteristic	Male	Female	Std	P	Male	Female	Std	P
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	(n=657)	(n=1,035)	Dif	Value	(n=523)	(n=523)	Dif	Value
)	f				f	
Demographic Characteristics								
Age, years	77.95 ± 6.93	78.42 ± 7.85	0.06	0.210	77.93 ± 7.27	77.89 ± 8.16	0.01	0.933
Race, %			0.21	<0.001*			0.12	0.281
White	595 (92.11)	860 (85.57)			476 (91.01)	469 (89.67)		
Black	19 (2.94)	59 (5.87)			16 (3.06)	24 (4.59)		
Hispanic	17 (2.63)	53 (5.27)			16 (3.06)	21 (4.02)		
Other	15 (2.32)	33 (3.28)			15 (2.87)	9 (1.72)		
Socioeconomic Characteristics								
Primary Payer, %			0.27	<0.001*			0.24	0.002*
Medicare/Medicaid	582 (88.72)	950 (91.88)			467 (89.29)	470 (89.87)		
Private Insurance	5 (0.76)	14 (1.35)			5 (0.96)	4 (0.76)		
Self-pay	39 (5.95)	65 (6.29)			30 (5.74)	45 (8.60)		
No charge/Other	30 (4.57)	5 (0.48)			21 (4.02)	4 (0.76)		
Median Household Income			0.19	0.003*			0.10	0.500
Quartile, %								
0–25th percentile	104 (15.95)	231 (22.56)			92 (17.59)	106 (20.27)		
26–50th percentile	178 (27.30)	261 (25.49)			149 (28.49)	137 (26.20)		
51–75th percentile	208 (31.90)	267 (26.07)			143 (27.34)	131 (25.05)		
76–100th percentile	162 (24.85)	265 (25.88)			139 (26.58)	149 (28.49)		
Hospital								

Characteristics								
Hospital			0.1	0.012*			0.0	0.675
Region, %			7				8	
Northeast	183	227			119	124		
	(27.85)	(21.93)			(22.75)	(23.71)		
Midwest	205	376			175	188		
	(31.20)	(36.33)			(33.46)	(35.95)		
South	169	248			144	128		
	(25.72)	(23.96)			(27.53)	(24.47)		
West	100	184			85	83		
	(15.22)	(17.78)			(16.25)	(15.87)		
Hospital			0.1	<0.00			0.1	0.010
Teaching			9	1*			9	*
Status, %								
Rural	8 (1.22)	16 (1.55)			6 (1.15)	9 (1.72)		
Urban Non-	36 (5.48)	110			31 (5.93)	57		
Teaching		(10.63)				(10.90)		
Urban Teaching	613	909			486	457		
	(93.30)	(87.83)			(92.93)	(87.38)		
Hospital Bed			0.1	0.017*			0.0	0.940
Size, %			4				2	
Small	52 (7.91)	83 (8.02)			48 (9.18)	47 (8.99)		
Medium	170	207			101	97		
	(25.88)	(20.00)			(19.31)	(18.55)		
Large	435	745			374	379		
	(66.21)	(71.98)			(71.51)	(72.47)		
Clinical								
Characteristics								
Current	356	338	0.4	<0.00	238	228	0.0	0.534
Smoking	(54.19)	(32.66)	4	1*	(45.51)	(43.59)	4	
Corticosteroid	126	134	0.1	<0.00	63	81	0.1	0.106
Use	(19.18)	(12.95)	7	1*	(12.05)	(15.49)	0	
Comorbidities								
Congestive	331	522	0.0	0.983	284	257	0.1	0.095
Heart Failure	(50.38)	(50.43)	0		(54.30)	(49.14)	0	
Hypertension	540	907	0.1	0.002*	468	443	0.1	0.021
	(82.19)	(87.63)	5		(89.48)	(84.70)	4	*

Dyslipidemia	502 (76.41)	698 (67.44)	0.2 0	<0.00 1*	381 (72.85)	381 (72.85)	0.0 0	1.000
Diabetes Mellitus	235 (35.77)	329 (31.79)	0.0 8	0.090	196 (37.48)	189 (36.14)	0.0 3	0.654
Prior Stroke	78 (11.87)	114 (11.01)	0.0 3	0.588	65 (12.43)	54 (10.33)	0.0 7	0.284
Prior MI	94 (14.31)	108 (10.43)	0.1 2	0.017*	70 (13.38)	55 (10.52)	0.0 9	0.153
Prior PCI	117 (17.81)	130 (12.56)	0.1 5	0.003*	90 (17.21)	85 (16.25)	0.0 3	0.679
Prior CABG	100 (15.22)	52 (5.02)	0.3 4	<0.00 1*	54 (10.33)	46 (8.80)	0.0 5	0.400
Peripheral Vascular Disease	151 (22.98)	184 (17.78)	0.1 3	0.009*	113 (21.61)	112 (21.41)	0.0 0	0.940
Chronic Pulmonary Disease	190 (28.92)	340 (32.85)	0.0 9	0.089	155 (29.64)	170 (32.50)	0.0 6	0.316
Renal Failure	189 (28.77)	313 (30.24)	0.0 3	0.518	161 (30.78)	153 (29.25)	0.0 3	0.589
Obesity	127 (19.33)	269 (25.99)	0.1 6	0.002*	114 (21.80)	118 (22.56)	0.0 2	0.766
Clinical Outcomes								
AIS	16 (2.44)	10 (0.97)	0.1 1	0.017*	15 (2.87)	5 (0.96)	0.1 4	0.024 *
In-Hospital Mortality	2 (0.30)	11 (1.06)	0.0 9	0.082	2 (0.38)	7 (1.34)	0.1 0	0.094
Length of Stay, days	2.85 ± 3.34	3.29 ± 3.65	0.1 3	0.013*	3.05 ± 3.53	3.11 ± 3.44	0.0 2	0.788
Total Charges, \$	198,508. ± 58	211,926. ± 26	0.1 1	0.026*	201,531. ± 39	209,314. ± 80	0.0 7	0.287
	111,514. ± 21	125,413. ± 99			115,209. ± 46	120,459. ± 41		

Data are presented as mean ± SD or n (%).

Abbreviations: AIS, acute ischemic stroke; MI, myocardial infarction; PCI, percutaneous coronary intervention; CABG, coronary artery bypass grafting; SD, standard deviation; Std Diff, standardized

difference; TAVI, transcatheter aortic valve implantation.

*Indicates statistically significant differences at $P < 0.05$.

Table S6. Association Between Sex and Clinical Outcomes in Patients with Inflammatory Arthritis Disease Undergoing Transcatheter Aortic Valve Implantation after PSM

Outcome	Male	Female	<i>P</i> Value
AIS			
Non-adjusted OR (95% CI)	Ref.	0.33 (0.12–0.91)	0.032*
Adjusted Model OR (95% CI)	Ref.	0.33 (0.12–0.90)	0.031*
In-hospital Mortality			
Non-adjusted OR (95% CI)	Ref.	3.53 (0.73–17.09)	0.117
Adjusted Model OR (95% CI)	Ref.	3.34 (0.69–16.25)	0.135

Adjusted Model: Adjusted for Propensity Score

Abbreviations: AIS, acute ischemic stroke; PSM, propensity score matching; CI, confidence interval; OR, odds ratio.

*Indicates statistically significant differences at $P < 0.05$.