

Supplementary Table 1. Valvular dysfunction in BAV patients.

Variable	Non-significant dysfunction	AR-dominant	AS-dominant	P-value
N = 852	N = 467 (54.8%)	N = 201 (23.6 %)	N = 184 (21.6%)	
Demographics and clinical data				
Age, <i>years</i>	46.0 ± 16.6	43.3±16.2	55.1±15.4	0.0001
Male, <i>n</i> (%)	301 (64.4)	169 (84.1)	128 (69.6)	0.0001
Smoking, <i>n</i> (%)	106 (22.7)	57 (28,4)	76 (41,3)	0.001
Hypertension, <i>n</i> (%)	130 (27.8)	55 (27.4)	75 (40.8)	0.014
Diabetes mellitus, <i>n</i> (%)	19 (4.1)	5 (2.6)	20 (10.9)	0.001
Dyslipidaemia, <i>n</i> (%)	77 (16.5)	35 (18.2)	73 (39.7)	0.0001
Valve characteristics				
Valve morphotype				0.08
Not defined, <i>n</i> (%)	37 (7.5)	5 (2.5)	3 (1.6)	
BAV-RL, <i>n</i> (%)	327 (70.0)	146 (72.6)	117 (63.6)	
BAV-RN, <i>n</i> (%)	93 (19.9)	44 (21.9)	58 (31.5)	
BAV-LN, <i>n</i> (%)	12 (2.6)	6 (3.0)	6 (3.3)	
Presence of raphe, <i>n</i> (%)	314 (67.2)	164 (82.8)	166 (90.2)	0.0001
Sigmoid prolapse, <i>n</i> (%)	34 (7.3)	64 (31.8)	12 (6.5)	0.0001
Valve calcification, <i>n</i> (%)	40 (8.6)	28 (13.9)	142 (77.2)	0.0001
Aortic diameter				
Aortic annulus, mm	23.0±2.90	24.8±3.1	22.2±3.9	0.0001

Aortic root, mm	35.8±5.5	39.0± 5.9	36.1± 5.4	0.0001
Ascending aorta, mm	38.9± 7.5	41.5±7.1	43.7± 7.4	0.001
Aortic arch, mm	30.6±5.2	31.6±5.1	33.8±5.9	0.0001
Aortic dilation				
Dilation, <i>n</i> (%)	331 (70.9)	177 (88.1)	155 (84.2)	0.0001
Root dilation, <i>n</i> (%)	140 (30.0)	98 (48.8)	44 (23.9)	0.0001
Ascending aorta dilation, <i>n</i> (%)	313 (67.0)	167 (83.1)	152 (82.6)	0.0001

AS, aortic stenosis; AR, aortic regurgitation; BAV, bicuspid aortic valve

Supplementary Table 2. Distribution of demographic, clinical, valve morphology and aortic dilation according to sex in BAV patients.

Variable	Male	Female	P-value
N = 852	N = 598 (70.2%)	N = 254 (29.8%)	
Demographics and clinical data			
Age, years	46.9±16.9	48.5±16.5	0.183
Smoking, n (%)	194 (35.7)	45 (17.7)	0.001
Hypertension, n (%)	194 (34.3)	66 (25.9)	0.070
Diabetes mellitus, n (%)	32 (5.8)	12 (4.7)	0.865
Dyslipidaemia, n (%)	139 (25.6)	46 (18.1)	0.117
Valve characteristics			
Valve morphotype			0.423
BAV-RL, n (%)	425 (74.2)	163 (64.1)	
BAV-RN, n (%)	132 (23.0)	63 (24.8)	
BAV-LN, n (%)	16 (2.8)	8 (3.0)	
Presence of raphe, n (%)	465 (83.3)	179 (70.4)	0.084
Sigmoid prolapse, n (%)	80 (13.4)	30 (11.8)	0.655
Valve calcification, n (%)	157 (26.3)	53 (20.8)	0.117
Valve function			0.001
Normofunctional, n (%)	301 (50.3)	166 (65.4)	
AS-dominant, n (%)	128 (21.4)	56 (22.0)	
AR-dominant, n (%)	169 (28.3)	32 (12.6)	

Aortic dilation			
Dilation at any level, <i>n</i> (%)	469 (79.8)	194 (76.3)	0.999
Root dilation, <i>n</i> (%)	209 (35.5)	73 (28.7)	0.127
Ascending aorta dilation, <i>n</i> (%)	442 (75.2)	190 (78.5)	0.325
Aortic root morphotype, <i>n</i> (%)	106 (18.0)	15 (5.9)	0.001
Ascending aorta mophotype, <i>n</i> (%)	363 (61.7)	178 (70.0)	0.001

AS, aortic stenosis; AR, aortic regurgitation; BAV, bicuspid aortic valve

Supplementary Table 3. Univariate and multivariate analysis for aortic dilation in BAV patients

Variable	AORTIC ROOT DILATION						ASCENDING AORTA DILATION							
	Univariate analysis			Multivariate analysis			Univariate analysis			Multivariate analysis				
	Dilated	Non-dilated	P-value	OR	CI 95% OR		P-value	Dilated	Non-dilated	P-value	OR	CI 95% OR		P-value
				Lower	Upper						Lower	Upper		
	N=282 (33.9%)	N=551 (66.1%)						N=632 (76.1%)	N=198 (23.9%)					
Age, years	48.2±16.8	46.8±16.8	0.299					47.9±16.9	45.4±16.4	0.074	1.01	0.99	1.02	0.063
Male, n (%)	209 (74.1)	380 (69.0)	0.127	1.24	0.87	1.78	0.223	442 (69.9)	146 (73.7)	0.325				
Hypertension, n (%)	98 (35.4)	162 (29.4)	0.205	1.28	0.89	1.84	0.168	206 (33.5)	53 (28.8)	0.244	1.12	0.72	1.75	0.603
Diabetes mellitus, n (%)	10 (3.7)	34 (6.7)	0.103	0.65	0.29	1.44	0.292	30 (5.0)	14 (8.2)	0.132	0.44	0.22	1.02	0.250
Dyslipidaemia, n (%)	58 (21.6)	127 (23.0)	0.252	0.86	0.56	1.30	0.483	147 (24.5)	38 (20.0)	0.684				
Smoking, n (%)	79 (28.0)	160 (29.0)	0.514					184 (29.1)	54 (27.2)	0.777				
Sigmoids prolapse, n (%)	41 (14.5)	69 (12.5)	0.449					90 (14.2)	20 (10.1)	0.150	1.16	0.66	2.05	0.586

Presence of raphe, <i>n</i> (%)	214 (78.1)	430 (83.7)	0.066	0.67	0.44	1.01	0.060	498 (81.1)	144 (74.3)	0.373				
Valve morphotype			0.0001							0.408				
BAV-RL, <i>n</i> (%)	226 (80.1)	360 (65.3)						460 (74.1)	125 (63.1)					
BAV-RN, <i>n</i> (%)	36 (13.1)	159 (29.9)		0.35	0.23	0.54	0.001	143 (23.0)	50 (25.2)					
BAV-LN, <i>n</i> (%)	12 (4.4)	12 (2.3)		1.45	0.61	3.44	0.394	18 (2.9)	6 (3.3)					
Valve dysfunction			0.0001							0.0001				
Normofunctional, <i>n</i> (%)	140 (49.6)	308 (55.9)						313 (49.5)	133 (67.2)					
AS-dominant, <i>n</i> (%)	44 (15.6)	140 (25.4)		0.77	0.50	1.18	0.237	152 (24.1)	32 (16.2)		1.59	1.00	2.52	0.046
AR-dominant, <i>n</i> (%)	98 (34.8)	103 (18.7)		2.05	1.41	2.98	0.001	167 (26.4)	33 (16.7)		1.80	1.13	2.87	0.012

AS: aortic stenosis; AR: aortic regurgitation

Supplementary Table 4. Univariate and multivariate analysis for demographic, cardiovascular risk factors and valve characteristics depending on aortic root dilation and ascending aorta dilation > 45 mm.

Variable	Aorta root dilation > 45 mm							Ascending aorta dilation > 45 mm						
	Univariate analysis			Multivariate analysis				Univariate analysis			Multivariate analysis			
	No	Yes	P-value	OR	CI 95% OR		P-value	No	Yes	P-value	OR	CI 95% OR		P-value
	N = 768 (92.1%)	N = 66 (7.9%)			Lower	Upper		N = 619 (74.5%)	N = 212 (25.5%)			Lower	Upper	
Age, years	46.7±16.8	53.9±15.8	0.001	1.03	1.01	1.05	0.002	43.7±16.3	57.9±13.6	0.001	1.06	1.04	1.07	0.001
Male, n (%)	527 (68.6)	63 (95.5)	0.001	6.94	2.09	22.99	0.002	428 (69.1)	161 (75.9)	0.066	1.65	1.07	2.54	0.022
Hypertension, n (%)	230 (31.2)	30 (46.9)	0.012	1.12	0.58	2.16	0.730	158 (26.9)	101 (47.9)	0.001	0.98	0.64	1.49	0.943
Diabetes mellitus, n (%)	43 (6.0)	1 (1.6)	0.248	0.14	0.01	1.23	0.077	27 (4.8)	17 (8.2)	0.080	0.71	0.33	1.49	0.368

Dyslipidaemia, <i>n</i> (%)	166 (23.4)	19 (30.6)	0.215	1.05	0.53	2.07	0.873	108 (17.4)	77 (37.0)	0.001	1.20	0.78	1.84	0.397
Smoker, <i>n</i> (%)	218 (30.8)	21 (33.3)	0.672					166 (29.6)	72 (34.8)	0.187	0.89	0.60	1.33	0.580
Calcification, <i>n</i> (%)	187 (24.3)	23 (34.8)	0.075	1.98	0.92	4.22	0.077	133 (21.5)	77 (36.3)	0.001	0.76	0.46	1.28	0.315
Sigmoids prolapse, <i>n</i> (%)	99 (12.9)	11 (16.7)	0.349					90 (14.5)	20 (9.4)	0.061	1.16	0.62	2.15	0.635
Presence of raphe, <i>n</i> (%)	595 (82.3)	49 (75.4)	0.180	0.60	0.29	1.23	0.16	466 (81.0)	176 (83.8)	0.405	0.94	0.57	1.53	0.815
Valve morphotype			0.013							0.058				
BAV-RL, <i>n</i> (%)	533 (71.9)	54 (83.1)						419 (70.8)	167 (79.1)					
BAV-RN, <i>n</i> (%)	188 (25.4)	7 (10.8)		0.28	0.10	0.74	0.011	153 (25.8)	40 (19.0)		0.59	0.37	0.92	0.022
BAV-LN, <i>n</i> (%)	20 (2.7)	4 (6.2)		1.48	0.40	5.44	0.554	20 (3.4)	4 (1.9)		0.36	0.11	1.18	0.094
Valve function			0.001							0.001				
Non-significant valve dysfunction, <i>n</i> (%)	429 (55.9)	20 (30.3)						363 (58.6)	84 (39.6)					
AS-dominant, <i>n</i> (%)	173 (22.5)	11 (16.7)		0.75	0.28	1.98	0.564	108 (17.4)	76 (35.8)		2.44	1.40	4.25	0.002
AR-dominant, <i>n</i> (%)	166 (21.6)	35 (53.0)		3.97	2.06	7.65	0.001	148 (23.9)	52 (24)a		1.62	1.02	2.60	0.041

AS, aortic stenosis; AR, aortic regurgitation.

