

Supplementary

Table S1 Studies included in the meta-analysis.

First author	Year	Weekend effect	Study design	Country	Journal	Sample size	Inclusion period	Age	Male
Anders Ahlsson	2019	Negative	NORCAAD Registry	Multicenter	ATS	1159	2005-2014	61.6±12.2	784 (67.6%)
George Arnaoutakis	2020	Negative	IRAD Registry	Multicenter	JOCS	4186	1996-2019	60.7 ± 14.0	2808 (66.9%)
Simone Gasser	2020	Negative	Case-control study	Austria	ICVTS	319	2000-2018	61 (49–70)	222 (69.6%)
Katsuhito Kato	2021	Positive	JROAD-DPC Registry	Japan	Plos One	7453*, 12798**	2012-2016	71±14**	5869 (45.9%)**
First author	Overall Mortality	NOS score	Event.weekend	n.weekend	Event.weekday	n.weekday	Odds Ratio	95% confidence interval	Note
Anders Ahlsson	204 (18.0%)	9	54	270	150	889	1.04	0.67-1.60	Adjusted
George Arnaoutakis	696 (16.6%)	9	196	1148	500	3038	1.04	0.87-1.25	Calculated using epitools package
Simone Gasser	51 (15.6%)	7	NA	NA	NA	NA	0.96	0.45-1.91	Unadjusted
Katsuhito Kato	3528 (27.6%)**	6	NA	NA	NA	NA	1.41*	1.17-1.68*	Unadjusted

*, surgery cohort; **, overall cohort.

Table S2 The baseline characteristics, operative data, and outcomes by Weekend versus Weekday group.

Variables	Overall	Weekday	Weekend	P value
n	479	347	132	
Baseline characteristics				
Male (%)	404 (84.3)	293 (84.4)	111 (84.1)	1.000
Age (year, median [IQR])	52.0 [45.0, 60.0]	52.0 [45.5, 61.0]	51.0 [44.8, 58.2]	0.515
Height (m, median [IQR])	1.7 [1.6, 1.7]	1.7 [1.6, 1.7]	1.7 [1.6, 1.7]	0.235
Weight (kg, median [IQR])	70.0 [63.0, 79.0]	70.0 [62.8, 79.0]	70.0 [63.0, 80.0]	0.690
BMI (kg/m ² , median [IQR])	24.5 [22.2, 27.1]	24.4 [22.3, 27.0]	24.5 [22.2, 27.3]	0.991
DeBakey II (%)	49 (10.2)	38 (11.0)	11 (8.3)	0.500
Penn Aa (%)	165 (34.4)	124 (35.7)	41 (31.1)	0.393
Penn Ab (%)	301 (62.8)	215 (62.0)	86 (65.2)	0.589
Penn Ab&c (%)	11 (2.3)	7 (2.0)	4 (3.0)	0.749
Penn Ac (%)	2 (0.4)	1 (0.3)	1 (0.8)	1.000
Aortic regurgitation (%)	157 (32.8)	118 (34.0)	39 (29.5)	0.384
Smoking (%)	163 (34.0)	118 (34.0)	45 (34.1)	1.000
Pulmonary artery hypertension (%)	34 (7.1)	23 (6.6)	11 (8.3)	0.551
Hypertension (%)	326 (68.1)	241 (69.5)	85 (64.4)	0.324
Coronary artery disease (%)	46 (9.6)	37 (10.7)	9 (6.8)	0.228
Marfan syndrome (%)	25 (5.2)	15 (4.3)	10 (7.6)	0.169
Hx of cardiovascular surgery (%)	38 (7.9)	28 (8.1)	10 (7.6)	1.000
Diabetes (%)	8 (1.7)	4 (1.2)	4 (3.0)	0.225
COPD (%)	45 (9.4)	38 (11.0)	7 (5.3)	0.078
White blood cell count (*10 ⁹ /L, median [IQR])	12.5 [10.2, 15.2]	12.5 [10.3, 15.3]	12.4 [10.0, 14.8]	0.643
Hemoglobin (g/L, median [IQR])	133.0 [123.0, 145.5]	132.0 [122.0, 144.0]	136.0 [128.0, 146.2]	0.068
Platelet count (*10 ⁹ /L, median [IQR])	184.0 [151.5, 228.0]	185.0 [153.0, 232.5]	179.5 [145.0, 217.8]	0.186
D-dimer (ng/mL, median [IQR])	10130.0 [3540.0, 20000.0]	9610.0 [3385.0, 20000.0]	15185.0 [4020.0, 20000.0]	0.122
Operative data				
Root (%)				0.746
Bentall	110 (23.0)	78 (22.5)	32 (24.2)	
Cabrol	7 (1.5)	6 (1.7)	1 (0.8)	
David	2 (0.4)	2 (0.6)	0 (0.0)	
Root sparing	322 (67.2)	236 (68.0)	86 (65.2)	
Wheat	38 (7.9)	25 (7.2)	13 (9.8)	
Arch (%)				0.902
Arch Sparing	5 (1.0)	4 (1.2)	1 (0.8)	
Hemiarch	11 (2.3)	8 (2.3)	3 (2.3)	
Hybrid TAR	2 (0.4)	1 (0.3)	1 (0.8)	
TAR	461 (96.2)	334 (96.3)	127 (96.2)	
Cannulation (%)				0.634
Arch	47 (9.8)	35 (10.1)	12 (9.1)	
FA	32 (6.7)	24 (6.9)	8 (6.1)	
IA+FA	62 (12.9)	48 (13.8)	14 (10.6)	
RSA	236 (49.3)	172 (49.6)	64 (48.5)	
RSA+FA	102 (21.3)	68 (19.6)	34 (25.8)	
CABG (%)	33 (6.9)	22 (6.3)	11 (8.3)	0.426
FET (%)	463 (96.7)	336 (96.8)	127 (96.2)	0.777
Operation time (min, median [IQR])	470.0 [420.0, 540.0]	470.0 [420.0, 540.0]	467.5 [415.0, 540.0]	0.622
CPB time (min, median [IQR])	241.0 [210.5, 280.0]	243.0 [213.0, 280.0]	232.5 [205.0, 279.2]	0.316
ACC time (min, median [IQR])	132.0 [103.0, 160.0]	132.0 [105.5, 160.0]	130.5 [101.8, 167.2]	0.862
MHCA time (min, median [IQR])	20.0 [16.0, 24.0]	20.0 [16.0, 24.0]	19.0 [16.0, 24.0]	0.727
MHCA (%)	314 (65.6)	233 (67.1)	81 (61.4)	0.238
Outcomes				
Mortality (%)	36 (7.5)	25 (7.2)	11 (8.3)	0.699
Stroke (%)	27 (5.6)	17 (4.9)	10 (7.6)	0.271
Paraplegia (%)	21 (4.4)	11 (3.2)	10 (7.6)	0.045
CRRT (%)	128 (26.7)	96 (27.7)	32 (24.2)	0.489
Re-exploration (%)	7 (1.5)	6 (1.7)	1 (0.8)	0.679
Delayed chest closure (%)	37 (7.7)	31 (8.9)	6 (4.5)	0.127
Acute lung injury (%)	132 (27.6)	94 (27.1)	38 (28.8)	0.732
Hospital stay (day, median [IQR])	23.0 [18.0, 31.0]	24.0 [18.0, 32.0]	23.0 [17.0, 30.0]	0.168
ICU stay (day, median [IQR])	7.7 [4.8, 12.3]	7.7 [4.8, 12.4]	7.7 [4.8, 11.5]	0.831
Mechanical ventilation time (hour, median [IQR])	97.0 [47.0, 169.0]	96.0 [46.5, 178.5]	112.0 [58.8, 162.0]	0.766

BMI, Body mass index; IQR, interquartile range; Hx, History; COPD, chronic obstructive pulmonary disease; TAR, total arch replacement; FA, femoral artery; IA, innominate artery; RSA, right subclavian artery; CABG, coronary artery bypass graft; FET, frozen elephant trunk; CPB, cardiopulmonary bypass; ACC, aortic cross-clamp; MHCA, moderate hyperthermic cardiac arrest; CRRT, continuous renal replacement therapy; ICU, intensive care unit.