

**Table S1** Preoperative blood test results

Variables	CTL (N=291)	Mi-HCA (N=81)	P
ALT, U/L	22.00 (17.00, 38.00)	24.00 (14.00, 41.00)	0.69
AST, U/L	23.00 (17.00, 33.00)	24.00 (17.00, 32.00)	0.71
BUN, mmol/L	6.20 (5.01, 7.90)	6.22 (5.05, 8.35)	0.72
Cre, $\mu$ mol/L	81.00 (68.30, 104.20)	79.20 (65.70, 110.45)	0.69
TNI, pg/mL	10.00 (0, 50.00)	10.00 (3.10, 40.00)	0.87
Myo, ng/ml	32.90 (20.70, 64.80)	30.30 (18.23, 49.63)	0.26
Ams, U/L	43.95 (34.70, 56.48)	46.10 (32.40, 73.10)	0.26
WBC, $\times 10^9/L$	11.45 (9.20, 14.52)	11.53 (8.48, 14.41)	0.69
CRP, mg/L	19.94 (4.30, 40.84)	7.60 (2.35, 33.50)	0.12
Hb, g/L	140.00 (129.00, 150.00)	140.00 (124.50, 147.00)	0.25
PLT, $\times 10^9/L$	179.00 (144.00, 222.00)	193.00 (160.50, 236.50)	0.08
PT, Sec	12.50 (11.80, 13.10)	12.15 (11.43, 12.88)	0.07
APTT, Sec	30.00 (28.00, 32.30)	30.15 (28.33, 32.05)	0.92
D-Dimer, ng/mL	2090.00 (873.00, 3225.00)	1398.00 (718.00, 2779.50)	0.19
Glu, mg/dL	131.40 (113.00, 154.80)	135.00 (120.30, 161.00)	0.16
Lac, mmol/L	1.50 (0.90, 2.10)	1.60 (1.20, 2.30)	0.05

Data are presented as median (interquartile range). CTL, the control group; Mi-HCA, mild hypothermic circulatory arrest; ALT, alanine aminotransferase; AST, aspartate aminotransferase; BUN, blood urea nitrogen; Cre, creatinine; TNI, troponin I; Myo, myoglobin; Ams, blood amylase; WBC, white blood cell; CRP, C-reactive protein; Hb, hemoglobin; PLT, platelets; PT, prothrombin time; APTT, activated partial thromboplastin time; Glu, blood glucose value; Lac, lactic acid.

**Table S2** Postoperative blood test results

Variables	CTL (N=291)	Mi-HCA (N=81)	P
OI 4 hours, mmHg	569.00 (434.00, 779.00)	635.00 (438.50, 759.50)	0.67
Glu 8 hours, mg/dL	203.00 (170.00, 262.00)	202.00 (173.00, 224.50)	0.68
Lac 8 hours, mmol/L	3.30 (2.10, 5.60)	2.80 (2.10, 4.05)	0.16
OI 8 hours, mmHg	525.00 (414.00, 672.00)	494.00 (391.00, 657.00)	0.35
Glu 12 hours, mg/dL	184.00 (155.00, 214.00)	196.00 (167.50, 214.00)	0.24
Lac 12 hours, mmol/L	2.90 (2.00, 4.20)	2.80 (2.10, 4.20)	0.59
Glu peak value D2, mg/dL	214.00 (181.25, 266.75)	217.00 (190.00, 262.00)	0.72
Lac peak value D2, mmol/L	2.75 (2.00, 3.90)	2.80 (2.05, 3.95)	0.62
Glu peak value D3, mg/dL	220.00 (178.00, 264.50)	239.50 (198.00, 281.25)	0.08
Lac peak value D3, mmol/L	2.30 (1.70, 3.10)	2.55 (1.80, 3.30)	0.23
BUN D1, mmol/L	9.10 (7.50, 11.76)	9.80 (7.18, 13.92)	0.24
WBC D1, $\times 10^9/L$	10.04 (7.92, 12.56)	10.11 (8.39, 12.05)	0.89
PT D1, Sec	13.90 (13.00, 15.00)	13.80 (12.85, 14.75)	0.31
APTT D1, Sec	31.90 (28.75, 36.55)	30.70 (28.10, 34.95)	0.14
BUN D2, mmol/L	13.90 (10.75, 19.10)	14.32 (9.92, 22.26)	0.68
WBC D2, $\times 10^9/L$	16.50 (13.41, 19.99)	15.32 (13.41, 18.59)	0.17
BUN D3, mmol/L	14.10 (9.74, 20.44)	14.50 (9.54, 20.83)	0.90
WBC D3, $\times 10^9/L$	15.23 (11.85, 19.27)	13.69 (11.04, 17.61)	0.06
BUN D4, mmol/L	12.25 (8.29, 17.80)	11.89 (8.81, 18.53)	0.81
Cre D4, $\mu$ mol/L	81.30 (61.68, 122.45)	84.60 (63.90, 130.90)	0.34
ALT D5, U/L	71.00 (37.00, 145.00)	63.50 (30.75, 111.50)	0.19
AST D5, U/L	48.50 (28.50, 88.25)	43.50 (23.75, 79.25)	0.18
BUN D5, mmol/L	11.10 (8.40, 15.20)	11.75 (9.36, 15.91)	0.59
Cre D5, $\mu$ mol/L	77.70 (59.50, 115.10)	83.20 (63.80, 115.60)	0.44

Data are presented as median (interquartile range). CTL, the control group; Mi-HCA, mild hypothermic circulatory arrest; OI, Oxygenation index; Glu, Blood glucose value; Lac, Lactic acid; ALT, alanine aminotransferase; AST, aspartate aminotransferase; BUN, blood urea nitrogen; Cre, creatinine; TNI, troponin I; WBC, white blood cell; Hb, hemoglobin; PLT, platelets; PT, prothrombin time; APTT, activated partial thromboplastin time.

**Table S3** Univariate analysis

Exposure = MAEs	OR	95% CI	P
Age, years	1.04	1.02–1.07	<0.01*
Male	0.48	0.28–0.82	<0.01*
BMI, kg/m <sup>2</sup>	0.97	0.92–1.03	0.36
Classification (ATAAD)	1.15	0.42–3.18	0.78
Marfan syndrome	0.51	0.17–1.51	0.22
History of cerebrovascular disease	2.92	1.17–7.31	0.02*
Hemopericardium	1.31	0.78–2.19	0.31
Pericardial tamponade	1.62	0.78–3.37	0.20
Emergency	0.90	0.32–2.54	0.84
Grouping (Mi-HCA)	0.51	0.26–0.99	<0.05*
Operation duration, h	1.45	1.20–1.74	<0.01*
CPB duration, min	1.01	1.01–1.02	<0.01*
Cross-clamp duration, min	1.01	1.00–1.02	<0.01*
Circulatory arrest duration, min	0.98	0.96–1.01	0.16
ACP duration, min	1.00	0.98–1.02	0.95

\*, P<0.05. MAEs, major adverse events; OR, odds ratio; CI, confidence interval; BMI, body mass index; ATAAD, acute type A aortic dissection; Mi-HCA, mild hypothermic circulatory arrest; CPB, cardiopulmonary bypass; ACP, antegrade cerebral perfusion.