

Table 1. Demographics and clinical characteristics of patients.

Variable	Hemorrhage (n=18)	Group No-hemorrhage Group (n=42)	P-value
Age, years	48.5±11.7	48.0±14.6	0.899
Gender			0.231
Male	12 (66.7%)	34 (81.0%)	
Female	6 (33.3%)	8 (19.0%)	
Comorbidities			
Hypertension	9 (50.0%)	13 (40.1%)	0.161
Diabetes	2 (11.1%)	2 (4.8%)	0.576
Preexisting Cardiac Disorder	8(44.4%)	12 (28.6%)	0.232
COPD	3 (16.7%)	1 (2.4%)	0.077
CKD	2 (11.1%)	0 (0)	0.086
Cancer	1 (5.6%)	1 (2.4)	0.514
Cause of ECMO Therapy			
Cardiogenic Shock	7 (38.9%)	25 (59.5%)	0.142
Respiratory failure	4(22.2%)	2 (4.8%)	0.060
Infectious shock	3 (16.7%)	1(2.4%)	0.077
Traumatic shock	2 (11.1%)	5 (11.9%)	1.000
Electrical injury	0 (0)	2 (4.8%)	1.000
Intoxication	0 (0%)	1 (2.4%)	1.000
Aortic dissection	1 (5.6%)	3 (7.1%)	1.000
Others	1 (5.6%)	3 (7.1%)	1.000
ECPR	8 (44.4%)	19 (45.2%)	0.955
APACHE II	26.2±7.1	24.9±10.2	0.621
Duration of ECMO support, h	141.3 (72.0~288.0)	27.3 (8.8~87.5)	0.001*
Mode			0.008*
V-V ECMO	5 (27.8%)	1 (2.4%)	
V-A ECMO	13 (72.2%)	41 (97.6%)	
Outcome			0.389
Mortality	14 (77.8%)	28 (66.7%)	
Discharge	4 (22.2%)	14 (33.3%)	

Data are mean ± standard, median (IQR), n (%). P values were calculated by Mann-Whitney U test, χ^2 test, or Fisher's exact test, as appropriate. COPD: Chronic Obstructive Pulmonary Disease; CKD: Chronic Kidney Disease; ECPR: External Cardiopulmonary Resuscitation; APACHE: Acute Physiological and Chronic Health Evaluation.

Table 2. Laboratory characteristics of patients.

Variable	Hemorrhage (n=18)	Group No-hemorrhage Group (n=42)	P-value
White blood cell count, $\times 10^9/L$	15.5(13.1~21.2)	12.0(8.8~18.3)	0.084
Neutrophil count, $\times 10^9/L$	11.8(10.9~15.1)	11.0(7.4~14.1)	0.283
Lymphocyte count, $\times 10^9/L$	2.0(1.4~3.8)	1.7(0.8~3.1)	0.545

Red blood cell count, $\times 10^{12}/L$	4.19 (3.86~4.75)	4.43 (4.21~4.93)	0.019*
Hemoglobin, g/L	125.0 (113.5~137.0)	144.0 (135.8~161.8)	0.092
Platelet count, $\times 10^9/L$	148.2 \pm 57.3	183.1 \pm 71.5	0.072
ESR, mm/h	34.5(23.3~68.0)	8.0(3.3~42.4)	0.013
Alanine aminotransferase, IU/L	118.0(46.5~256.3)	36.5(14.5~201.5)	0.045*
Aspartate aminotransferase, IU/L	181.5(62.0~388.8)	114.0(51.8~565.5)	0.821
Serum creatinine, μ mol/L	198.7(145.9~239.4)	111.6(89.4~158.3)	0.191
Lactate dehydrogenase, IU/L	675.5(279.8~1380.5)	595(404.8~1340.5)	0.463
Creatine kinase, IU/L	1201.5(329.5~1659.3)	998.0(356~2325.5)	0.634
α -HBDH	357.0(222.5~900.8)	332.5(214.8~655.0)	0.711
Albumin, g/L	28.5(24.0~31.2)	32.1(25.5~36.8)	0.223
APTT, s	71.3(44.1~105.9)	39.9 (29.7~58.8)	0.015*
PT, s	25.9(18.7~29.2)	12.1(9.3~15.5)	0.578
D-Dimer, μ g/ml	4.0(0.7~10.5)	1.8(0.8~14.7)	0.503
Fibrinogen, g/L	3.1(2.6~4.7)	2.9(2.2~3.6)	0.242
PH	7.34(7.28~7.38)	7.35(7.30~7.38)	0.187
PaO ₂	62.5(25.0~108.5)	63.0(37.0~98.0)	0.296
PaCO ₂	40.5(19.0~69.8)	39.5(13.5~87.6)	0.197

Data are mean \pm standard, median (IQR), n (%). P values were calculated by Mann-Whitney U test, χ^2 test, or Fisher' s exact test, as appropriate. α -HBDH: Alpha-hydroxybutyric Dehydrogenase. APTT: Activated Partial Thromboplastin Time. PT: Prothrombin Time.

Table 3. Logistic regression analysis for the related factors predicting hemorrhage.

Variable	B	S.E.	Wals	OR	95%CI	P-value
Duration of ECMO support, h	0.026	0.008	10.611	1.026	1.010~1.042	0.001
APTT, s	0.043	0.017	6.153	1.044	1.009~1.079	0.013

Table 4. Hemorrhage sites and time from ECMO operated to hemorrhage.

Variable	Total (n=18)
Hemorrhage sites	
Cannula site	11 (61.1%)
Mucosal or dermal hemorrhage	10 (55.6%)
Gastrointestinal hemorrhage	9 (50.0%)
Respiratory hemorrhage	3 (16.7%)
Cerebral hemorrhage	1 (5.6%)
More than one site	10 (55.6%)
Time from ECMO operated to hemorrhage, days	2.1 \pm 0.96

Data are mean \pm standard and n (%).

