

Table S1 The distribution of missing values across multiple variables in the derivation cohort

Variables	Total Entries	Missing Values	Missing Percentage
Gender	130	0	0
Age, years	130	0	0
BMI, kg/m ²	130	3	2.30%
Hypertension	130	0	0
Diabetes	130	0	0
CAD	130	0	0
COPD	130	0	0
Immunocompromised	130	0	0
SOFA*	130	0	0
APACHE II*	130	0	0
Asystole*	130	0	0
PPV*	130	0	0
Muscle Relaxants*	130	2	1.54%
Bicarbonate*	130	2	1.54%
HR*, g/L	130	3	2.30%
MAP*, mmHg	130	3	2.30%
Ppeak*, cmH ₂ O	130	15	11.54%
Pmean*, cmH ₂ O	130	17	13.08%
MV*, L/min	130	20	15.38%
PEEP*, cmH ₂ O	130	2	1.54%
VIS*	130	0	0
pH*	130	0	0
PaCO ₂ *, mmHg	130	0	0
HCO ₃ *, mmol/L	130	0	0
Lac*, mmol/L	130	0	0
PaO ₂ *, mmHg	130	0	0
PFR*	130	0	0
WBC*, 10 ⁹ /L	130	0	0
HB*, g/L	130	0	0
PLT*, 10 ⁹ /L	130	0	0
SCR*, μmol/L	130	0	0
BUN*, mmol/L	130	0	0

*: it means the worst values recorded in the 6 hours prior to the initiation of ECMO for data collection. CAD, coronary artery disease; COPD, chronic obstructive pulmonary disease; Immunocompromised, defined as hematological malignancy, active treatment for solid tumor, solid organ transplant, AIDS, or long-term treatment with corticosteroids or immunosuppressants; MV, minute ventilation; PEEP, positive end-expiratory pressure; PFR, PaO₂/FiO₂; Pmean, mean airway pressure; Ppeak, peak inspiratory pressure; PPV, prone position ventilation; VIS, vasoactive-inotropic score.

Table S2 Univariable and multivariable regression analysis in derivation cohort

Variables	Univariable		Multivariable	
	OR (95% CI)	P	OR (95% CI)	P
Gender (Male)	1.46 (0.66–3.23)	0.35		
Age, years	1.01 (0.98–1.03)	0.57		
BMI, kg/m ²	0.96 (0.87–1.06)	0.44		
Hypertension (Yes)	1.11 (0.51–2.42)	0.79		
Diabetes (Yes)	1.29 (0.58–2.84)	0.54		
CAD (Yes)	10.84 (3.47–33.92)	<0.001	13.93 (4.00–48.51)	<0.001
COPD (Yes)	0.96 (0.31–2.93)	0.94		
Immunocompromised (Yes)	2.22 (1.06–4.65)	0.04	2.04 (0.76–5.46)	0.16
SOFA*	1.33 (1.17–1.51)	<0.001	1.29 (1.12–1.50)	<0.001
APACHE II*	1.02 (0.98–1.07)	0.26		
Asystole*(Yes)	4.00 (0.40–39.52)	0.24		
PPV*(Yes)	1.13 (0.52–2.42)	0.76		
Muscle Relaxants*(Yes)	1.82 (0.90–3.69)	0.09		
Bicarbonate*(Yes)	1.55 (0.77–3.13)	0.22		
HR*, g/L	1.01 (0.99–1.02)	0.23		
SBP*, mmHg	0.99 (0.97–1.01)	0.37		
DBP*, mmHg	0.97 (0.95–1.00)	0.09		
MAP*, mmHg	0.98 (0.95–1.01)	0.14		
Ppeak*, cmH ₂ O	1.02 (0.98–1.07)	0.33		
Pmean*, cmH ₂ O	1.08 (0.95–1.22)	0.25		
MV*, L/min	1.00 (0.86–1.16)	>0.99		
PEEP*, cmH ₂ O	0.95 (0.84–1.08)	0.46		
VIS*	1.00 (1.00–1.01)	0.11		
pH*	0.11 (0.00–2.85)	0.18		
PaCO ₂ *, mmHg	1.01 (0.99–1.03)	0.45		
HCO ₃ *, mmol/L	0.97 (0.91–1.02)	0.23		
Lac*, mmol/L	1.15 (0.91–1.45)	0.24		
PaO ₂ *, mmHg	1.00 (0.99–1.01)	0.43		
FiO ₂ *, %	1.01 (0.99–1.03)	0.25		
PFR*	1.00 (0.99–1.01)	0.99		
WBC*, 10 ⁹ /L	1.01 (0.98–1.04)	0.45		
HB*, g/L	0.98 (0.97–0.99)	0.03	0.98 (0.96–0.99)	0.03
PLT*, 10 ⁹ /L	0.99 (0.99–0.99)	<0.001	0.99 (0.99–0.99)	0.008

Table S2 (*continued*)

Table S2 (continued)

Variables	Univariable		Multivariable	
	OR (95% CI)	P	OR (95% CI)	P
SCR*, $\mu\text{mol/L}$	1.01 (1.01–1.01)	0.02		
BUN*, mmol/L	1.13 (1.06–1.21)	<0.001		

*, it means the worst values recorded in the 6 hours prior to the initiation of ECMO for data collection. CAD, coronary artery disease; CI, confidence interval; COPD, chronic obstructive pulmonary disease; Immunocompromised, defined as hematological malignancy, active treatment for solid tumor, solid organ transplant, AIDS, or long-term treatment with corticosteroids or immunosuppressants; MV, minute ventilation; OR, odds ratio; PEEP, positive end-expiratory pressure; PFR, $\text{PaO}_2/\text{FiO}_2$; Pmean, mean airway pressure; Ppeak, peak inspiratory pressure; PPV, prone position ventilation; VIS, vasoactive-inotropic score.

Table S3 Multivariable regression analysis of the final predictive model

Variables	β	P	OR (95% CI)
Intercept	-0.35	0.82	0.70 (0.03–14.34)
CAD		<0.001	
No			1.00 (Reference)
Yes	2.53		12.58 (3.60–44.03)
SOFA*	0.24	0.001	1.28 (1.10–1.48)
HB*, g/L	-0.02	0.03	0.98 (0.96–0.99)
PLT*, $10^9/\text{L}$	-0.01	0.008	0.99 (0.99–0.99)
BUN*, mmol/L	0.04	0.31	1.04 (0.96–1.13)

*, it means the worst values recorded in the 6 hours prior to the initiation of ECMO for data collection. CHD, coronary artery disease; CI, confidence interval; OR, odds ratio.

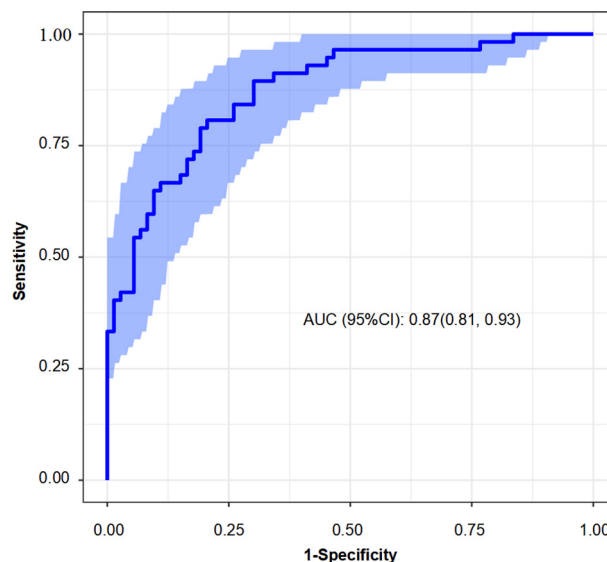


Figure S1 ROC curve for the nomogram generated using bootstrap resampling.