

**Table S1** Potential predictors to derive the prediction score

No.	Predictors	Terms included before backward elimination	Included in the final model 1	Included in the final model 2
1	Gender	Binary (male; female)	No	Yes
2	Age	Value (unit: year)	No	No
3	SBP	Value (unit: mmHg)	No	No
4	DBP	Value (unit: mmHg)	No	No
5	Breaths	Value (unit: per min)	No	No
6	Pulse	Value (unit: beats per min)	No	Yes
7	Temperature	Binary (=0 if temperature <37.3 °C, =1 if temperature ≥37.3 °C)	Yes	Yes
8	Comorbidity hypertension	Binary (=0 if patient had no hypertension before admission, =1 if patient had hypertension before admission)	No	No
9	Comorbidity diabetes	Binary (=0 if patient had no diabetes before admission, =1 if patient had diabetes before admission)	No	No
10	Comorbidity coronary heart disease	Binary (=0 if patient had no coronary heart disease before admission, =1 if patient had coronary heart disease before admission)	No	No
11	Comorbidity chronic obstructive lung disease	Binary (=0 if patient had no chronic obstructive lung disease before admission, =1 if patient had chronic obstructive lung disease before admission)	No	No
12	Comorbidity cerebrovascular disease	Binary (=0 if patient had no cerebrovascular disease before admission, =1 if patient had cerebrovascular disease before admission)	No	No
13	Comorbidity carcinoma	Binary (=0 if patient had no carcinoma before admission, =1 if patient had carcinoma before admission)	No	No
14	Comorbidity chronic kidney disease	Binary (=0 if patient had no chronic kidney disease before admission, =1 if patient had chronic kidney disease before admission)	No	No
15	White blood cell count	Binary (<3.50×10 <sup>9</sup> /L, 3.50–9.50×10 <sup>9</sup> /L, ≥9.50×10 <sup>9</sup> /L)	No	No
16	Neutrophil count	Binary (<1.80×10 <sup>9</sup> /L, 1.80–6.30×10 <sup>9</sup> /L, ≥6.30×10 <sup>9</sup> /L)	Yes	No
17	Lymphocyte count	Binary (<1.10×10 <sup>9</sup> /L, 1.10–3.20×10 <sup>9</sup> /L, ≥3.20×10 <sup>9</sup> /L)	No	No
18	Hemoglobin	Binary (<130 g/L, 130–175 g/L, ≥175 g/L)	No	No
19	Platelet count	Binary (<125×10 <sup>9</sup> /L, 125–350×10 <sup>9</sup> /L, ≥350×10 <sup>9</sup> /L)	Yes	Yes
20	Albumin	Binary (<40.0 g/L, 40.0–55.0 g/L, ≥55.0 g/L)	No	No
21	Aspartate aminotransferase	Binary (<15 IU/L, 15–40 IU/L, ≥40 IU/L)	No	No
22	Serum creatinine concentration	Binary (<53 μmol/L, 53–106 μmol/L, ≥106 μmol/L)	No	No
23	Creatine kinase	Binary (<171 IU/L, ≥171 IU/L)	No	No
24	High-sensitive cardiac troponin I	Binary (<0.026 μg/L, ≥0.026 μg/L)	No	No
25	D-dimer	Binary (<1.00 mg/L, ≥1.00 mg/L)	Yes	Yes
26	IL-6	Binary (<5.90 pg/mL, ≥5.90 pg/mL)	No	No
27	C3	Binary (<0.90 g/L, 0.90–1.80 g/L, ≥1.80 g/L)	Yes	Yes

SBP, systolic blood pressure; DBP, diastolic blood pressure; IL-6, interleukin-6; C3, complement C3.

**Table S2** Rate of missing data

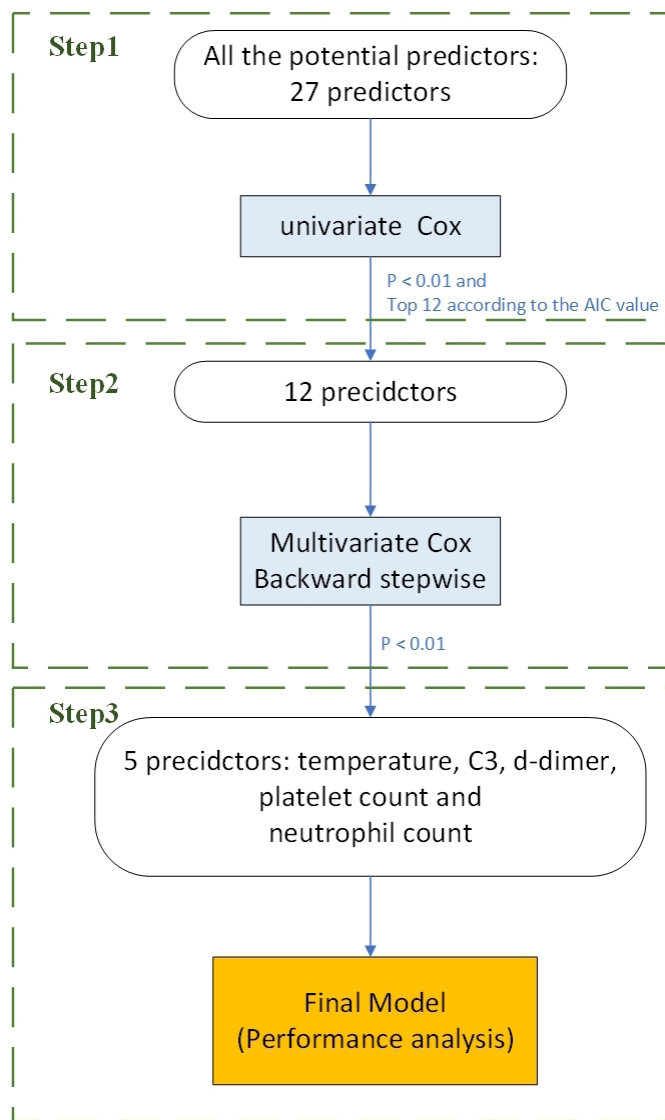
Predictors	Missing rate (%)
Gender	0.00
Age	0.00
SBP	1.64
DBP	1.76
Breaths	0.00
Pulse	0.23
Temperature	0.00
Comorbidity hypertension	0.00
Comorbidity diabetes	0.00
Comorbidity coronary heart disease	0.00
Comorbidity chronic obstructive lung disease	0.00
Comorbidity cerebrovascular disease	0.00
Comorbidity carcinoma	0.00
Comorbidity chronic kidney disease	0.00
White blood cell count	7.03
Neutrophil count	7.03
Lymphocyte count	7.03
Hemoglobin	7.03
Platelet count	7.03
Albumin	9.50
Aspartate aminotransferase	9.50
Serum creatinine concentration	10.20
Creatine kinase	30.95
D-dimer	48.77
High-sensitive cardiac troponin I	55.22
C3	89.21
IL-6	96.95

SBP, systolic blood pressure; DBP, diastolic blood pressure; C3, complement C3; IL-6, interleukin-6.

**Table S3** Results of univariate Cox models and the multivariate Cox model with backward stepwise procedure

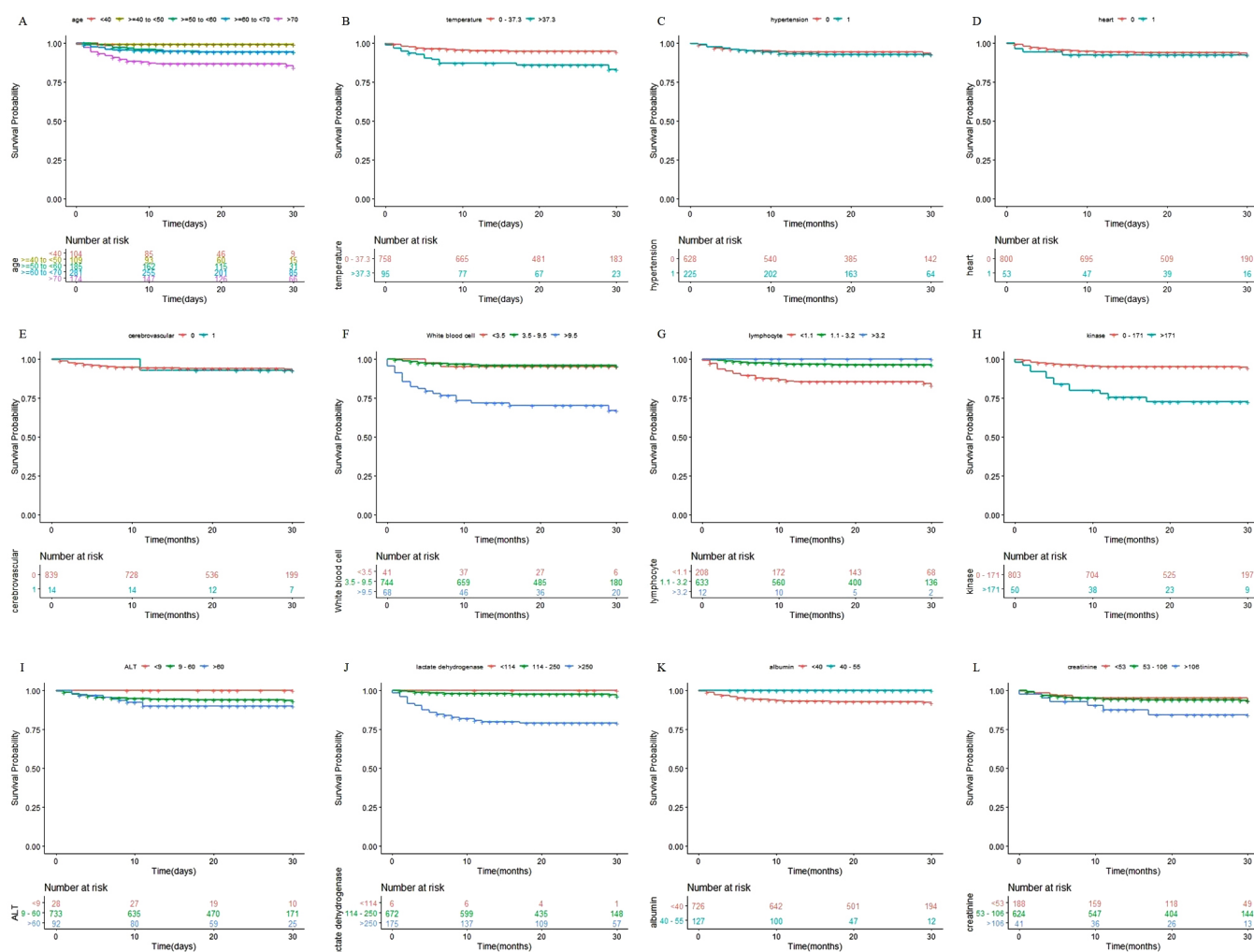
Predictors	HR (95% CI) in univariate Cox models (step 1)	P value of univariate Cox models	AIC of univariate Cox models	Included in the multivariate Cox model	HR (95% CI) in multivariate Cox model with backward stepwise procedure (step 2)	P value of multivariate Cox model	Included in the final model
Gender	2.197 (1.253–3.852)	<0.01	698.136	Yes	2.079 (1.145–3.774)	<0.05	No
Age	1.055 (1.031–1.079)	<0.001	682.16	Yes			No
SBP	1.006 (0.99–1.022)			No			No
DBP	0.997 (0.973–1.021)			No			No
Breaths	1.027 (1.002–1.052)	<0.05		No			No
Pulse	1.029 (1.012–1.047)	<0.001	696.372	Yes	1.019 (0.999–1.04)	<0.1	No
Temperature	3.122 (1.67–5.838)	<0.001	695.807	Yes	3.299 (1.673–6.503)	<0.001	Yes
Comorbidity hypertension	1.176 (0.654–2.114)			No			No
Comorbidity diabetes	1.993 (1.002–3.967)	<0.05		No			No
Comorbidity coronary heart disease	1.232 (0.445–3.415)			No			No
Comorbidity chronic obstructive lung disease	5.949 (1.446–24.465)	<0.05		No			No
Comorbidity cerebrovascular disease	1.053 (0.145–7.62)			No			No
Comorbidity carcinoma	0 (0–Inf)			No			No
Comorbidity chronic kidney disease	0 (0–Inf)			No			No
White blood cell count							
>9.5	7.342 (1.721–31.335)	<0.01	662.797	Yes			No
3.5–9.5	0.83 (0.198–3.475)						No
Neutrophil count							
>6.3	9.993 (2.364–42.244)	<0.01	654.499	Yes	8.286 (1.833–37.446)	<0.01	Yes
1.8–6.3	1.077 (0.255–4.537)				1.49 (0.348–6.379)		
Lymphocyte count							
>3.2	0 (0–Inf)				0 (0–Inf)		No
1.1–3.2	0.207 (0.119–0.359)	<0.001	674.913	Yes	0.493 (0.278–0.874)	<0.05	No
Hemoglobin							
>175	61.593 (8.034–472.199)	<0.001	701.846	No			No
130–175	0.986 (0.57–1.704)			No			No
Platelet count							
>350	0.117 (0.038–0.363)	<0.001	685.45	Yes	0.096 (0.028–0.326)	<0.001	Yes
125–350	0.16 (0.084–0.308)	<0.001	685.45	Yes	0.209 (0.106–0.411)	<0.001	Yes
Albumin							
40–55	0 (0–Inf)			No			No
Aspartate aminotransferase							
>40	11.191 (1.511–82.872)	<0.05		No			No
15–40	2.466 (0.336–18.105)			No			No
Serum creatinine concentration							
>106	2.778 (1.009–7.643)	<0.05		No			No
53–106	1.116 (0.555–2.244)			No			No
High-sensitive cardiac troponin I							
>0.026	6.311 (3.543–11.241)	<0.001	676.809	Yes	1.609 (0.843–3.072)		No
Creatine kinase							
>171	5.761 (3.081–10.775)	<0.001	684.566	Yes			No
D-dimer							
>1	9.915 (4.981–19.736)	<0.001	647.472	Yes	7.835 (3.737–16.423)	<0.001	Yes
IL-6							
>5.9	1.063 (0.602–1.877)			No			No
C3							
0.9–1.8	0.423 (0.239–0.747)	<0.01	698.217	Yes	0.268 (0.143–0.504)	<0.001	Yes

HR, hazard ratio; CI, confidence interval; AIC, Akaike's information criterion; SBP, systolic blood pressure; DBP, diastolic blood pressure; IL-6, interleukin-6; C3, complement C3.



AIC = Akaike information criterion

**Figure S1** Workflow diagram for predictors screening. C3, complement C3.



**Figure S2** Kaplan-Meier curves for respiratory distress in 30 days following admission based on demographic and clinical data. (A) The median follow-up times for patients <40 years of age (n=104), 40–50 years of age (n=109), 50–60 years of age (n=185), 60–70 years of age (n=281) and >70 years of age (n=174) were 16.5 (IQR, 11–24.25), 20 (IQR, 13–27), 23 (IQR, 15–27), 25 (IQR, 19–30) and 27 (IQR, 19–30) days, respectively; (B) the median follow-up times for patients with temperature >37.3 (n=95) and with temperature ≤37.3 (n=758) were 24 (IQR, 15–29) and 24 (IQR, 18–29) days, respectively; (C) the median follow-up times for patients with (n=225) and without (n=628) hypertension were 25 (IQR, 19–30) and 23 (IQR, 14–29) days, respectively; (D) the median follow-up times for patients with (n=53) and without (n=800) coronary heart disease were 25 (IQR, 19–30) and 24 (IQR, 14.75–29) days, respectively; (E) the median follow-up times for patients with (n=14) and without (n=839) cerebrovascular disease were 29.50 (IQR, 26–30) and 24 (IQR, 15–29) days, respectively; (F) the median follow-up times for patients with white blood cell count <3.5×10<sup>9</sup>/L (n=41), 3.5–9.5×10<sup>9</sup>/L (n=744), and >9.5×10<sup>9</sup>/L (n=68) were 24 (IQR, 19–26), 24 (IQR, 15–29), and 22 (IQR, 7–30) days, respectively; (G) the median follow-up times for patients with lymphocyte count <1.1×10<sup>9</sup>/L (n=208), 1.1–3.2×10<sup>9</sup>/L (n=633), and >3.2×10<sup>9</sup>/L (n=12) were 26 (IQR, 16.75–30), 23 (IQR, 15–29), and 17.50 (IQR, 12.25–26.50) days, respectively; (H) the median follow-up times for patients with creatine kinase <171 IU/L (n=803) and ≥171 IU/L (n=50) were 24 (IQR, 15–29) and 18.5 (IQR, 10.25–27.50) days, respectively; (I) the median follow-up times for patients with ALT <9 IU/L (n=28), 9–60 IU/L (n=733), and >60 IU/L (n=92) were 22.5 (IQR, 13–30), 24 (IQR, 15–29), and 25 (IQR, 14.75–30) days, respectively; (J) the median follow-up times for patients with lactate dehydrogenase <114 IU/L (n=6), 114–250 IU/L (n=672), and >250 IU/L (n=175) were 25 (IQR, 18.25–26.75), 24 (IQR, 15–29), and 25 (IQR, 12–30) days, respectively; (K) the median follow-up times for patients with albumin <40.0 g/L (n=726), and 40.0–55.0 g/L (n=127) were 25 (IQR, 17–30), and 15 (IQR, 11–23) days, respectively; (L) the median follow-up times for patients with serum creatinine concentration <53 μmol/L (n=188), 53–106 μmol/L (n=624), and >106 μmol/L (n=41) were 24 (IQR, 13–30), 24 (IQR, 15–29), and 23 (IQR, 14–30) days, respectively. IQR, interquartile range.