

Supplementary material

Table S1. Univariate Cox regression analysis to predict time to clinical improvement.

Variables	Hazard ratio (95% confidence interval)	p-value
Convalescent plasma therapy, (refer: no)	0.75 (0.41-1.37)	0.35
Convalescent plasma with high neutralizing antibody titers $\geq 1:160$, (refer: no)	0.71 (0.32-1.56)	0.40
Age, year	0.97 (0.95-0.99)	0.003
Male, n (%)	1.15 (0.42-3.18)	0.78
Body mass index, kg.m^{-2}	1.00 (0.95-1.04)	0.91
SOFA	0.93 (0.86-0.99)	0.04
SAPS II	0.97 (0.95-0.99)	0.005
Patients with comorbidities, (refer: no)	0.79 (0.47-1.31)	0.37
Comorbidities distribution, (refer: no)		
Diabetes mellitus	0.84 (0.51-1.39)	0.50
Hypertension	0.73 (0.44-1.23)	0.24
Chronic artery disease	1.04 (0.38-2.85)	0.94
Chronic kidney disease	1.53 (0.55-4.21)	0.41
Time from symptoms onset to ICU admission, day	1.01 (0.95-1.08)	0.73
Time from symptoms onset to CP administration, day	0.96 (0.91-1.02)	0.22
Vital signs on ICU admission		
Temperature (max), $^{\circ}\text{C}$	1.45 (0.88-2.39)	0.15
Heart rate, beats.min^{-1}	1.00 (0.99-1.01)	0.77
Respiratory rate, breaths.min^{-1}	1.00 (0.97-1.03)	0.89
Laboratory data on ICU admission		
C-reactive protein, mg.L^{-1}	1.00 (1.00-1.00)	0.41
Leucocytes count, $\times 10^9.\text{L}^{-1}$	0.94 (0.89-0.99)	0.034
Lymphocytes count, $\times 10^9.\text{L}^{-1}$	0.63 (0.34-1.17)	0.14
Platelet count, $\times 10^9.\text{L}^{-1}$	1.00 (1.00-1.00)	0.76
Procalcitonin, ng.mL^{-1}	1.00 (0.99-1.01)	0.94
INR	0.60 (0.19-1.93)	0.39
Activated partial thromboplastin time; s	0.99 (0.95-1.02)	0.56
D-dimer, $\mu\text{g.mL}^{-1}$	0.78 (0.65-0.93)	0.006
Fibrinogen, g.L^{-1}	0.98 (0.84-1.13)	0.75
Ferritin, $\mu\text{g.L}^{-1}$	1.00 (1.00-1.00)	0.84
Interleukin 6, ng.L^{-1}	1.00 (1.00-1.00)	0.18

Alanine aminotransferase, IU.mL ⁻¹	1.00 (0.99-1.00)	0.93
Aspartate aminotransferase, IU.mL ⁻¹	0.99 (0.99-1.00)	0.08
Total bilirubin, µmol.L ⁻¹	0.98 (0.96-1.00)	0.13
Creatinine, µmol.L ⁻¹	1.00 (1.00-1.00)	0.65
PaO ₂ /FiO ₂ ratio, mmHg	1.004 (1.001-1.007)	0.008
Lactate, mmol.L ⁻¹	0.49 (0.28-0.87)	0.01
Treatments (refer: no)		
Invasive mechanical ventilation (reference: HFNO/NIV)	0.31 (0.18-0.51)	<0.001
Vasopressor support	0.26 (0.16-0.44)	<0.001
Renal replacement therapy	0.30 (0.16-0.57)	<0.001
Extracorporeal membrane oxygenation	-	
Tocilizumab	0.89 (0.42-1.88)	0.77
Hydroxychloroquine	1.41 (0.86-2.33)	0.17
Favipiravir	1.14 (0.65-2.01)	0.65
Lopinavir/ritonavir	1.22 (0.71-2.10)	0.46
Methylprednisolone	1.00 (0.61-1.63)	0.99
WHO scale 5 (refer: WHO scale 4)	0.69 (0.41-1.14)	0.14

SOFA, Sequential Organ Failure Assessment; SAPS, Simplified Acute Physiology Score; ICU, intensive care unit; PaO₂, arterial oxygen pressure; FiO₂, inspiratory oxygen fraction; INR, international normalized ratio; WHO, World Health Organization; HFNO, high flow nasal oxygen; NIV, non-invasive therapy.

Table S2. Multivariable Cox regression analysis to predict time to clinical improvement.

Variables	Hazard ratio	95% Confidence interval	P-value
Convalescent plasma with high neutralizing antibody titers ≥ 1:160 (refer: no)	1.05	0.40-2.72	0.92
Age, year	0.97	0.95-1.00	0.063
Male, (refer: female)	1.10	0.26-4.66	0.89
BMI, kg.m ⁻²	0.99	0.92-1.06	0.72
SOFA score	1.03	0.90-1.18	0.68
Lactate, mmol.L ⁻¹	0.73	0.38-1.38	0.33
Leucocytes count, × 10 ⁹ .l ⁻¹	1.02	0.94-1.10	0.68
PaO ₂ /FiO ₂ ratio, mmHg	1.00	0.99-1.00	0.94
D-dimer, µg.mL ⁻¹	1.00	0.74-1.38	0.95
Aspartate aminotransferase, IU.mL ⁻¹	0.99	0.98-1.00	0.051
Time from symptoms onset to convalescent plasma infusion, day	0.98	0.90-1.06	0.60
Invasive mechanical ventilation, (refer: HFNO/NIV)	0.59	0.23-1.48	0.26
Vasopressor support (refer: no)	0.45	0.21-0.99	0.047
Renal replacement therapy (refer: no)	0.44	0.15-1.26	0.13
Methylprednisolone, (refer: no)	0.99	0.55-1.80	0.98
Tocilizumab, (refer: no)	1.21	0.38-3.78	0.75
Extracorporeal oxygenation membrane, (refer: no)	-	-	-
Comorbidities, (refer: no)	0.79	0.43-1.45	0.44

HFNO, high flow oxygen; NIV, non-invasive ventilation; PaO₂, arterial oxygen pressure; FiO₂, inspiratory oxygen fraction; SOFA, Sequential Organ Failure Assessment. Test of proportional-hazards assumption (Shoenfeld residuals test): p=0.23.

Table S3. Weighted standardized differences.

Variables	Weighted standardized differences (%)
Age, year	14
Male	1
BMI, kg.m ⁻²	0.8
SOFA score	5.7
Lactate, mmol.L ⁻¹	7.8
Leucocytes count, × 10 ⁹ .l ⁻¹	1.4
PaO ₂ /FiO ₂ ratio, mmHg	18.5
D-dimer, µg.mL ⁻¹	8.8
Aspartate aminotransferase, IU.mL ⁻¹	10.0
Time from symptoms onset to convalescent plasma infusion, day	15.0
Invasive mechanical ventilation	15.4
Vasopressor support	8.0
Renal replacement therapy	18.9
Methylprednisolone	16.0
Tocilizumab	20
Extracorporeal oxygenation membrane	0.02
Comorbidities	19.5

PaO₂, arterial oxygen pressure; FiO₂, inspiratory oxygen fraction; SOFA, Sequential Organ Failure Assessment.