

SUPPLEMENTARY MATERIALS

Table S1: Collinearity Statistics in multivariate logistic regression.

	Tolerance	VIF
Sex	0.771	1.296
SpO2	0.841	1.188
Breath rate	0.856	1.168
Diastolic pressure	0.685	1.460
DR score	0.691	1.446
Neutrophil	0.656	1.525
Lymphocyte	0.833	1.201
C-reactive protein (CRP)	0.767	1.304
Procalcitonin (PCT)	0.851	1.174
Lactate dehydrogenase (LDH)	0.763	1.311
D-dimer	0.750	1.333

Table S2: Dynamic changes in laboratory investigations and DR scores between patients with clinical stability and death events.S

Time from admission (d)	Discharge (n=35)	Death event (n=89)	p value
DR score			
0	11 (8-15)	14 (7-17)	0.398
1 - 3	12 (7-15)	17 (16-20)	0.047
4 - 6	11 (6-15)	17 (14-19)	0.004
7 - 9	12 (8-18)	17 (12-20)	0.035
10 - 12	12 (8-19)	17 (12-20)	0.047
13 - 15	12 (7-14)	16 (12-21)	0.009
≥16	10 (6-14)	19 (13-21)	<0.001
Neutrophil (G/L)			
0	5.09 (3.73-8.26)	7.03 (4.17-10.23)	0.037
1 - 3	4.74 (3.45-6.40)	7.64 (4.78-12.65)	0.002
4 - 6	6.80 (4.76-8.27)	9.76 (6.18-13.10)	0.002
7 - 9	6.40 (3.73-7.66)	9.43 (6.98-13.16)	<0.001
10 - 12	6.12 (4.17-7.95)	11.15 (7.88-13.70)	<0.001
13 - 15	5.40 (3.25-8.71)	11.78 (7.13-16.73)	<0.001
≥16	4.40 (3.23-7.61)	11.84 (7.93-15.57)	<0.001
Lymphocyte (G/L)			
0	0.88 (0.66-1.21)	0.56 (0.39-0.83)	0.001
1 - 3	0.93 (0.70-1.21)	0.51 (0.38-0.73)	<0.001
4 - 6	1.27 (0.68-1.51)	0.47 (0.34-0.71)	<0.001
7 - 9	1.07 (0.74-1.72)	0.49 (0.35-0.72)	<0.001
10 - 12	1.23 (0.69-1.61)	0.48 (0.32-0.75)	<0.001
13 - 15	1.28 (0.79-1.78)	0.48 (0.27-0.86)	<0.001
≥16	1.46 (0.91-1.88)	0.51 (0.25-0.93)	<0.001
C-reactive protein (mg/L)			
0	53.57 (30.28-78.56)	85.86 (51.35-116.83)	0.001
1 - 3	42.82 (12.48-63.71)	79.97 (45.67-117.28)	<0.001
4 - 6	18.67 (4.76-54.59)	85.96 (57.93-109.74)	<0.001
7 - 9	7.11 (2.95-23.39)	73.31 (47.01-114.48)	<0.001
10 - 12	14.33 (3.91-51.00)	62.67 (39.32-130.58)	<0.001
13 - 15	5.45 (3.86-20.22)	77.10 (42.87-144.87)	<0.001
≥16	4.79 (0.36-12.36)	90.62 (64.42-114.31)	<0.001
Procalcitonin (PCT) (µg/L)			
0	0.09 (0.06-0.17)	0.25 (0.12-0.44)	<0.001
1 - 3	0.11 (0.07-0.23)	0.31 (0.18-0.65)	<0.001
4 - 6	0.07 (0.05-0.14)	0.41 (0.16-1.03)	<0.001
7 - 9	0.07 (0.06-0.12)	0.40 (0.15-0.77)	<0.001
10 - 12	0.10 (0.05-0.12)	0.60 (0.20-2.19)	<0.001
13 - 15	0.09 (0.04-0.15)	0.87 (0.17-2.11)	0.001

≥16	0.06 (0.05-0.10)	0.66 (0.29-1.05)	<0.001
Total bilirubin (TB) (μmol/L)			
0	12.1 (7.9-16.4)	14.1 (9.9-21.3)	0.082
1 - 3	10.5 (9.0-17.9)	13.7 (9.7-21.5)	0.129
4 - 6	10.9 (9.1-15.7)	18.2 (12.9-31.8)	<0.001
7 - 9	12.2 (9.0-14.4)	17.7 (12.8-29.5)	0.006
10 - 12	12.4 (8.8-20.1)	17.2 (13.2-25.1)	0.025
13 - 15	12.6 (9.5-15.4)	16.4 (11.2-25.9)	0.007
≥16	10.3 (8.5-13.8)	15.2 (10.1-22.8)	0.009
Alanine aminotransferase (ALT) (U/L)			
0	37 (22-78)	37 (25-56)	0.936
1 - 3	39 (27-81)	40 (27-66)	0.780
4 - 6	45 (25-64)	43 (29-93)	0.527
7 - 9	41 (32-55)	42 (29-75)	0.575
10 - 12	43 (28-56)	43 (26-65)	0.875
13 - 15	42 (27-51)	49 (23-85)	0.321
≥16	29 (26-55)	47 (27-79)	0.087
Aspartate aminotransferase (AST) (U/L)			
0	44 (27-73)	47 (36-67)	0.361
1 - 3	34 (26-78)	47 (36-70)	0.187
4 - 6	26 (20-41)	42 (26-75)	0.004
7 - 9	29 (21-35)	36 (28-61)	0.009
10 - 12	28 (23-37)	39 (23-66)	0.026
13 - 15	27 (20-32)	38 (27-78)	0.004
≥16	23 (21-30)	34 (24-41)	0.003
Lactate dehydrogenase (LDH) (U/L)			
0	393 (244-497)	519 (395-634)	0.001
1 - 3	368 (261-481)	521 (382-650)	0.001
4 - 6	269 (207-414)	560 (392-729)	<0.001
7 - 9	264 (193-309)	467 (363-709)	<0.001
10 - 12	226 (179-251)	435 (354-648)	<0.001
13 - 15	201 (176-247)	432 (293-524)	<0.001
≥16	199 (167-220)	349 (283-410)	<0.001
Serum creatinine (Scr) (μmol/L)			
0	70.0 (54.4-88.2)	75.5 (64.3-102.5)	0.147
1 - 3	72.5 (59.6-84.3)	76.0 (60.9-110.1)	0.337
4 - 6	70.3 (53.4-89.1)	76.4 (60.1-113.7)	0.176
7 - 9	62.6 (53.0-73.9)	78.5 (55.0-153.7)	0.026
10 - 12	63.8 (53.8-78.5)	72.1 (54.9-140.2)	0.172
13 - 15	66.6 (51.2-87.4)	71.6 (57.7-112.3)	0.272
≥16	61.1 (54.1-72.8)	63.1 (52.7-133.3)	0.491
D-dimer (mg/L)			
0	1.12 (0.43-5.42)	3.97 (0.78-8.00)	0.010

1 - 3	1.12 (0.43-3.76)	1.90 (0.62-7.81)	0.235
4 - 6	2.57 (0.85-6.25)	8.00 (5.38-8.00)	0.002
7 - 9	3.17 (0.67-4.89)	7.90 (5.29-8.00)	<0.001
10 - 12	1.75 (0.78-4.42)	7.18 (3.76-8.00)	<0.001
13 - 15	1.18 (0.49-2.79)	5.00 (2.54-8.00)	<0.001
≥16	1.02 (0.57-1.86)	4.23 (2.74-7.10)	<0.001
Cardiac troponin I (cTnI)			
(µg/L)			
0	9.9 (3.4-57.1)	24.1 (9.8-155.8)	0.006
1 - 3	17.0 (6.1-64.3)	30.1 (12.7-160.1)	0.254
4 - 6	22.2 (9.4-1093.6)	38.8 (14.1-328.4)	0.517
7 - 9	10.2 (6.4-45.4)	46.4 (9.9-295.2)	0.070
10 - 12	5.3 (2.7-16.0)	82.8 (10.7-270.4)	<0.001
13 - 15	4.4 (2.8-6.4)	43.6 (10.5-371.0)	<0.001
≥16	6.6 (4.8-19.6)	37.6 (21.7-183.1)	0.001
Brain natriuretic peptide (BNP) (ng/L)			
0	48.6 (21.1-119.5)	88.7 (39.6-192.0)	0.029
1 - 3	37.0 (21.1-68.9)	108.6 (42.7-297.1)	0.046
4 - 6	159.5 (44.0-749.2)	104.4 (53.4-168.9)	0.509
7 - 9	61.4 (45.9-150.1)	95.9 (51.3-286.4)	0.506
10 - 12	31.0 (17.1-46.7)	173.1 (71.7-420.0)	0.002
13 - 15	26.7 (10.0-50.2)	110.7 (63.9-349.0)	0.002
≥16	68.4 (16.6-271.5)	187.6 (92.7-435.4)	0.028

Table S3: Dynamic changes in cytokines and T-lymphocyte subsets analysis between patients with clinical stability and death events.

Time from admission (d)	Discharge (n=29)	Death event (n=48)	p value
IL-2 (ng/L)			
≤10	2.77 (2.56-2.88)	2.59 (2.43-3.26)	0.815
11 - 13	2.68 (2.53-2.87)	2.70 (2.60-2.88)	0.758
14 - 16	2.56 (2.43-2.63)	2.57 (2.36-2.97)	0.610
17 - 19	2.40 (2.28-2.80)	2.50 (2.29-4.00)	0.734
20 - 22	2.84 (2.51-3.59)	3.42 (2.43-3.85)	0.810
23 - 25	3.80 (3.06-4.19)	4.53 (4.40-5.47)	0.073
26 - 28	3.48 (3.39-4.36)	3.89 (2.95-5.22)	0.953
≥29	3.84 (3.27-4.48)	4.02 (3.90-4.85)	0.275
IL-4 (ng/L)			
≤10	2.18 (1.67-2.40)	2.16 (1.67-2.48)	0.868
11 - 13	1.90 (1.76-2.36)	1.90 (1.71-2.26)	0.918
14 - 16	1.85 (1.57-2.42)	2.10 (1.58-2.76)	0.544
17 - 19	1.90 (1.49-2.16)	1.81 (1.43-3.28)	0.945
20 - 22	2.42 (1.90-4.20)	2.48 (1.67-3.90)	0.885
23 - 25	4.45 (2.74-5.62)	4.26 (3.34-5.48)	0.927
26 - 28	3.00 (2.93-4.40)	3.59 (2.92-4.61)	0.859
≥29	3.31 (2.22-4.26)	3.76 (3.49-5.22)	0.351
IL-6 (ng/L)			
≤10	5.71 (4.38-18.30)	61.80 (21.00-907.53)	<0.001
11 - 13	4.97 (3.39-19.20)	48.46 (20.34-321.86)	0.002
14 - 16	14.79 (7.47-18.97)	22.27 (15.06-112.87)	0.039
17 - 19	7.88 (5.56-8.99)	109.38 (11.32-533.01)	0.014
20 - 22	6.32 (5.69-8.53)	128.30 (28.06-1308.50)	<0.001
23 - 25	9.51 (4.33-12.41)	223.81 (48.16-2460.85)	<0.001
26 - 28	8.78 (5.76-11.97)	682.38 (61.53-2602.46)	<0.001
≥29	6.18 (5.23-11.44)	2837.94 (217.95-4846.50)	<0.001
IL-10 (ng/L)			
≤10	3.46 (2.99-4.26)	5.41 (4.28-38.22)	0.010
11 - 13	3.75 (3.44-4.77)	4.97 (3.81-7.69)	0.142
14 - 16	4.29 (3.19-5.25)	5.91 (3.24-9.74)	0.162
17 - 19	4.15 (2.99-5.56)	5.51 (3.98-7.80)	0.365
20 - 22	3.70 (3.11-3.91)	5.95 (4.48-20.73)	0.049
23 - 25	5.88 (3.43-8.27)	8.15 (4.18-11.05)	0.412
26 - 28	5.88 (4.78-9.77)	14.01 (5.65-31.30)	0.129
≥29	6.97 (4.78-8.67)	46.70 (18.01-79.14)	0.003
TNF-α (ng/L)			
≤10	2.26 (1.93-2.57)	2.10 (1.92-3.20)	0.973
11 - 13	1.97 (1.77-2.27)	2.22 (1.84-2.73)	0.408

14 - 16	2.14 (1.88-2.64)	2.10 (1.68-2.71)	0.753
17 - 19	1.93 (1.88-2.09)	2.06 (1.65-3.05)	<0.001
20 - 22	1.89 (1.65-2.39)	2.74 (2.05-3.68)	0.080
23 - 25	3.98 (3.11-4.12)	4.34 (3.34-5.18)	0.412
26 - 28	2.30 (2.16-3.02)	3.34 (3.09-3.68)	0.099
≥29	3.29 (2.44-5.16)	3.46 (3.34-4.02)	0.393
IFN-γ (ng/L)			
≤10	1.98 (1.94-2.04)	1.82 (1.72-2.34)	0.441
11 - 13	1.92 (1.61-2.21)	1.92 (1.80-2.08)	<0.001
14 - 16	1.91 (1.76-2.25)	1.86 (1.47-2.46)	0.753
17 - 19	1.99 (1.96-2.04)	1.96 (1.39-3.19)	<0.001
20 - 22	2.22 (1.75-2.66)	2.52 (1.84-3.23)	0.665
23 - 25	4.17 (2.99-4.81)	4.14 (3.02-4.72)	0.788
26 - 28	3.45 (3.45-3.88)	3.25 (3.02-4.07)	0.768
≥29	2.92 (2.32-4.92)	3.40 (3.07-3.72)	0.757
CD3+ T-lymphocyte ratio (%)			
≤10	72.58 (60.93-79.97)	66.38 (60.04-74.90)	0.464
11 - 13	68.67 (53.91-80.11)	70.36 (60.11-72.65)	0.867
14 - 16	78.03 (70.44-82.48)	60.84 (56.42-66.48)	<0.001
17 - 19	66.91 (62.63-74.13)	68.35 (58.98-79.41)	0.959
20 - 22	76.18 (72.48-78.84)	63.62 (59.88-77.03)	0.119
23 - 25	78.21 (71.15-85.41)	67.48 (62.29-69.45)	0.015
26 - 28	84.45 (80.42-84.92)	61.95 (58.01-64.98)	0.001
≥29	72.98 (55.28-85.53)	58.06 (51.79-73.56)	0.336
CD4+ T-lymphocyte ratio (%)			
≤10	50.61 (36.22-57.53)	42.46 (36.89-51.01)	0.356
11 - 13	51.81 (33.82-54.41)	51.88 (40.63-56.36)	0.397
14 - 16	47.44 (45.23-50.28)	40.46 (34.86-47.15)	0.010
17 - 19	38.01 (36.22-45.32)	52.18 (44.53-58.76)	0.048
20 - 22	52.49 (51.35-55.89)	42.20 (34.36-56.14)	0.098
23 - 25	43.65 (29.41-50.25)	43.78 (32.94-49.66)	0.871
26 - 28	50.20 (32.79-52.27)	46.13 (34.59-46.58)	0.513
≥29	40.23 (30.52-43.50)	36.84 (30.52-54.20)	0.779
CD8+ T-lymphocyte ratio (%)			
≤10	17.02 (9.67-26.18)	16.88 (14.22-24.77)	0.621
11 - 13	18.29 (12.14-22.92)	15.35 (8.31-16.77)	0.336
14 - 16	23.74 (19.48-29.35)	17.83 (14.83-21.19)	0.007
17 - 19	23.57 (23.18-27.87)	13.81 (8.74-19.52)	0.004
20 - 22	17.60 (16.50-19.39)	18.44 (12.35-26.69)	0.612
23 - 25	28.47 (19.22-47.04)	17.48 (15.30-25.48)	0.350

26 - 28	27.73 (22.43-47.45)	16.20 (12.10-21.41)	0.013
≥29	29.21 (19.16-34.03)	15.52 (14.56-24.76)	0.054
CD4+/CD8+ lymphocyte ratio			
≤10	2.72 (1.75-5.67)	2.39 (1.67-3.67)	0.436
11 - 13	3.10 (1.48-3.89)	3.58 (2.67-7.46)	0.189
14 - 16	2.01 (1.65-2.855)	2.17 (1.88-2.74)	0.113
17 - 19	1.61 (1.56-1.63)	4.175 (2.74-5.49)	0.004
20 - 22	3.11 (2.71-3.25)	2.7 (1.45-3.38)	0.349
23 - 25	1.64 (0.945-2.64)	2.44 (1.31-3.2)	0.477
26 - 28	1.88 (0.69-2.52)	2.775 (1.79-3.82)	0.206
≥29	1.42 (1.10-2.00)	1.87 (1.55-2.93)	0.152