

**Supplementary Table 1. The clinical features of COVID-19 patients with mild and severe liver injury during hospitalization**

Variable	COVID-19 patients with mild liver injury during hospitalization (n=103)	COVID-19 patients with severe liver injury during hospitalization (n=30)	P-value
Gender (Male/Female)	44/59	14/16	0.835
Age (year; mean $\pm$ SD)	44.84 $\pm$ 18.17	49.83 $\pm$ 12.26	0.160
Hospitalization time (median [IQR])	17.00 [13.00, 24.00]	17.50 [12.25, 24.00]	0.903
Severe COVID-19 patients	18 (17.5%)	7 (23.3%)	0.648
Co-existing disorder			
Diabetes	9 (8.7%)	4 (13.3%)	0.489
Hypertension	13 (12.6%)	6 (20.0%)	0.374
Coronary heart disease	4 (3.9%)	-	0.574
Cancer	6 (5.8%)	1 (3.3%)	1.000
Chronic obstructive pulmonary disease	4 (3.9%)	-	0.574
Chronic renal disease	1 (1.0%)	1 (3.3%)	0.402
Symptoms			
Fever	58 (56.3%)	16 (53.3%)	0.836
Fatigue	22 (21.4%)	8 (26.7%)	0.620
Cough	44 (42.7%)	12 (40.0%)	0.836
Sputum	45 (43.7%)	13 (43.3%)	1.000
Muscle ache	10 (9.7%)	4 (13.3%)	0.518
Shortness of breath	23 (22.3%)	9 (30.0%)	0.467
Chest tightness	20 (19.4%)	7 (23.3%)	0.615
Hemoptysis	5 (4.9%)	1 (3.3%)	1.000
Dizziness	8 (7.8%)	4 (13.3%)	0.467
Headache	15 (14.6%)	2 (6.7%)	0.358
Runny	10 (9.7%)	1 (3.3%)	0.455
Stuffy nose	2 (1.9%)	2 (6.7%)	0.219
Sore throat	11 (10.7%)	1 (3.3%)	0.297
Anorexia	32 (31.1%)	15 (50.0%)	0.081
Nausea	14 (13.6%)	6 (20.0%)	0.393
Vomiting	11 (10.7%)	1 (3.3%)	0.297
Abdominal pain	3 (2.9%)	1 (3.3%)	1.000
Diarrhea	46 (44.7%)	17 (56.7%)	0.301
Treatment plan			
Ritonavir	83 (80.60%)	29 (96.7%)	0.033
Prezista	13 (12.6%)	4 (13.3%)	1.000

Arbidol	27 (26.2%)	8 (26.7%)	1.000
Ribavirin	34 (33.0%)	8 (26.7%)	0.656
Chloroquine	20 (19.4%)	6 (20.0%)	1.000
Interferon	103 (100.0%)	28 (93.3%)	0.050
Antibiotics	24 (23.3%)	10 (33.3%)	0.341
Mechanical ventilation	12 (11.7%)	2 (6.7%)	0.656
Laboratory test results - (median [IQR])			
White blood cell count, x 10 <sup>9</sup> per L	6.16 [4.69, 8.36]	6.86 [5.71, 9.07]	0.060
Neutrophil count, x 10 <sup>9</sup> per L	3.91 [2.81, 5.90]	4.06 [3.67, 7.29]	0.044
Lymphocyte count, x 10 <sup>9</sup> per L	1.57 [1.27, 2.03]	1.79 [1.35, 2.26]	0.207
Platelet count, x 10 <sup>9</sup> per L	246.00 [197.50, 341.00]	256.50 [229.50, 314.50]	0.596
Haemoglobin, g/L	136.00 [126.50, 149.00]	138.00 [132.25, 150.50]	0.390
Monocyte count, x 10 <sup>9</sup> per L	0.47 [0.38, 0.66]	0.55 [0.48, 0.73]	0.016
Red blood cell count, x 10 <sup>12</sup> per L	4.47 [4.14, 4.84]	4.53 [4.20, 4.90]	0.410
Procalcitonin, ng/mL	0.03 [0.02, 0.06]	0.03 [0.02, 0.09]	0.255
C-reactive protein, mg/L	11.33 [2.91, 32.91]	15.04 [2.80, 64.84]	0.252
D-dimer, µg/mL	0.25 [0.14, 0.68]	0.18 [0.11, 0.54]	0.294
Fibrinogen, g/L	4.37 [3.32, 5.19]	4.53 [3.41, 5.43]	0.382
Prothrombin time, s	12.00 [11.30, 12.50]	12.10 [11.43, 12.83]	0.205
Activated partial thromboplastin time, s	39.70 [36.00, 43.20]	40.50 [37.40, 47.00]	0.191
International normalized ratio	0.96 [0.92, 0.99]	0.97 [0.93, 1.02]	0.174
CD4 <sup>+</sup> T cell, per µl	422.00 [273.50, 607.00]	209.00 [133.00, 331.75]	<0.001
CD8 <sup>+</sup> T cell, per µl	300.00 [182.00, 481.50]	152.50 [121.75, 356.75]	0.002
CD4 <sup>+</sup> T /CD8 <sup>+</sup> T cell	1.42 [1.13, 1.96]	1.21 [0.84, 1.55]	0.036
CD3 <sup>+</sup> T cell, per µl	801.00 [537.00, 1110.50]	398.00 [271.00, 852.50]	<0.001
γ-interferon, pg/mL	1.85 [1.35, 2.75]	1.72 [1.18, 3.00]	0.826
TNF-α, pg/mL	1.58 [0.97, 2.53]	1.29 [0.92, 3.71]	0.723
IL-10, pg/mL	4.77 [2.89, 6.28]	7.36 [5.14, 10.97]	<0.001
IL-6, pg/mL	7.87 [4.06, 12.93]	35.96 [28.32, 54.74]	<0.001
IL-4, pg/mL	1.10 [0.69, 1.72]	1.18 [0.55, 1.84]	0.972
IL-2, pg/mL	1.19 [0.95, 1.59]	1.42 [0.92, 2.35]	0.475
IL-17A, pg/mL	13.53 [5.95, 18.80]	19.51 [6.52, 30.50]	0.109

Note: COVID-19 patients with liver injury during hospitalization were recruited and 12 patients with existing liver disease were excluded in the present study. All the parameters of laboratory test used during hospitalization were the peak values. Patients with severe liver injury were defined as follows: alanine aminotransferase (ALT) and/or aspartate aminotransferase (AST)>3 times upper limit of normal (ULN), alkaline phosphatase (ALP)>2.5 times ULN, and/or total bilirubin (TBIL)>1.5 times ULN. Mild liver injury was defined as any elevation of ALT, AST, ALP and TBIL

above ULN without meeting the criteria for severe liver injury. Categorical variables were presented as number and percentage (no. (%)). Continuous variables were presented as mean  $\pm$  standard deviation (SD) or median with interquartile range (IQR).