

Viral load dynamics and disease severity in patients infected with SARS-CoV-2 in Zhejiang province, China, January-March 2020: retrospective cohort study

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Table S1. Clinical laboratory characteristics of patients with SARS-CoV-2 infection

Laboratory findings, median [IQR]	Total (n=96)	Mild (n=22)	Severe (n=74)	<i>P</i> values
Leukocyte count, ×10 ⁹ /L	5.7 (3.9-9.3)	5.3 (3.9-7.6)	6.2 (3.9-10.8)	0.19
Lymphocyte count, ×10 ⁹ /L	0.8 (0.5-1.2)	1.2 (0.8-1.5)	0.7 (0.5-1.1)	0.002
Monocytes count, ×10 ⁹ /L	0.4 (0.2-0.5)	0.5 (0.3-0.7)	0.3 (0.2-0.5)	0.005
Hemoglobin, g/L	135 (121.8-149)	134 (126-144)	135 (121-150)	0.85
Platelet count, ×10 ⁹ /L	187 (143-237.5)	187 (159-266)	181 (140-227)	0.37
Albumin, g/L	39.1 (34.5-43.6)	42.4 (37.9-46.1)	37.9 (33.9-42.7)	0.004
Alanine transaminase, U/L	21 (15-30.8)	24 (16-45)	21 (14-27.5)	0.39
Aspartate transaminase, U/L	22 (18-34)	19 (16-34)	23 (18-34.5)	0.24
Creatinine, μmol/L	76 (61.3-89.8)	62 (54-88)	79 (65-91.5)	0.02
Blood urea nitrogen, mmol/L	5 (3.9-6.8)	4 (3.2-5)	5.4 (4.2-7.9)	0.001
Creatine kinase, U/L	69 (49-122.8)	62.5 (42.8-86.3)	78 (52-138)	0.04
Creatine kinase-MB, U/L	20 (17-24)	17 (15.8-19.5)	22 (17-24.5)	0.01
Lactate dehydrogenase, U/L	261.5 (211.8-341.3)	205 (176-224.3)	292.5 (227.3-355.8)	<0.001
Cardiac troponin I, ng/mL	0.004 (0.002-0.009)	0.002 (0.001-0.003)	0.004 (0.002-0.01)	<0.001
Potassium, mmol/L	3.8 (3.5-4.1)	3.6 (3.5-4.2)	3.8 (3.5-4.1)	0.46
Sodium, mmol/L	139 (137-141)	140 (138-141)	138 (136-141)	0.06
Fibrin, g/L	4.5 (4-5.5)	4.0 (2.8-4.3)	4.7 (4.2-5.5)	0.001
D-dimer, ug/IFEU	370 (214-673)	236 (85-391)	429 (260.5-787.5)	0.002
C-reactive protein, mg/L	27.1 (10.8-54.8)	8 (2.2-21.9)	39.9 (16.2-63.7)	<0.001
Procalcitonin, ng/mL	0.06 (0.04-0.1)	0.05 (0.02-0.07)	0.07 (0.04-0.1)	0.02
Interleukin-2, pg/mL	0.5 (0.4-1.5)	0.7 (0.4-1.3)	0.5 (0.4-1.5)	0.93
Interleukin-4, pg/mL	0.9 (0.7-0.9)	0.9 (0.9-0.9)	0.9 (0.7-0.9)	0.04
Interleukin-6, pg/mL	22.5 (10.7-58.3)	18 (6-46.4)	32.7 (12.3-60.5)	0.14
Interleukin-10, pg/mL	5.4 (3-8)	3.7 (2.6-7.5)	5.9 (3-8.4)	0.17
Tumor necrosis factor-α, pg/mL	7.4 (3.3-38)	13.8 (6.1-43)	6.1 (3.3-38)	0.49
Interferon-γ, pg/mL	9.2 (5.1-28.6)	12.2 (5.2-38.5)	9 (4.6-26.3)	0.55
CD45 ⁺ lymphocytes, cell/μL	684.5 (404.3-1205)	1295.5 (764-1774)	629.5 (339.8-1013.3)	0.03
CD3 ⁺ lymphocytes, cell/μL	336.5 (208.8-780.3)	856 (335.5-1382.3)	317 (201.3-661)	0.04
CD4 ⁺ lymphocytes, cell/μL	182.5 (85.5-463.5)	498.5 (165.3-740.8)	171.5 (83.3-372.3)	0.03
CD8 ⁺ lymphocytes, cell/μL	150 (81.8-303.3)	310 (152.8-458.8)	138 (79-227.3)	0.04
CD19 ⁺ lymphocytes, cell/μL	116.5 (70.3-180.8)	139.5 (113.3-243)	108 (67.8-180.3)	0.30
CD56 ⁺ lymphocytes, cell/μL	103.5 (68.3-205.3)	215 (161.8-281.8)	96.5 (60.3-195.8)	0.02

Bold texts indicate *P* < .05.

Table S2. The relationship between antiviral drugs and glucocorticoids use and viral duration and viral load in patients with SARS-CoV-2 infection

Variables	Mild (n=22)	Severe (n=74)	<i>P</i> values ^a
Viral duration, d, median [IQR]			
Lopinavir/ritonavir combined Arbidol	12.5 (8.5-14.8)	21 (15-29)	0.001
Other antiviral therapy [*]	23.5 (12.8-31.3)	17 (11-28)	0.50
Illness to antiviral therapy ≤5 days	12 (8-18)	21 (13-29)	0.005
Illness to antiviral therapy >5 days	15 (14-29)	21 (16-28)	0.81
Duration of glucocorticoids ≤10 days [#]	14.5 (5.5-20.8)	16 (12-22.5)	0.39
Duration of glucocorticoids >10 days	20.5 (16.3-24.8)	28 (22.5-32) ^b	0.37
Median viral load, log₁₀ copies/mL, median [IQR]			
Lopinavir/ritonavir combined Arbidol	4.0 (3.3-4.8)	5.2 (4.1-6.0)	0.03
Other antiviral therapy [*]	4.6 (3.7-4.9)	5.5 (4.5-6.2)	0.02
Illness to antiviral therapy ≤5 days	4.3 (3.6-4.9)	5.3 (4.4-6.0)	0.004
Illness to antiviral therapy >5 days	3.9 (3.1-5.9)	5.1 (3.7-6.0)	0.32
Duration of glucocorticoids ≤10 days [#]	4.0 (3.7-4.6)	5.1 (4.0-6.0)	0.10
Duration of glucocorticoids >10 days	4.6 (3.6-5.5)	5.7 (4.7-6.5)	0.28

Bold texts indicate $P < .05$.

Abbreviation: IQR, interquartile range.

^a Comparison between mild and severe groups.

^b Comparison between duration of glucocorticoids ≤10 days and >10 days in severe group is significantly different ($P < 0.001$).

^{*} Other antiviral therapies include interferon alpha inhalation, favipiravir and darunavir/cobicistat.

[#] Glucocorticoids dosage according to the sixth edition Guideline for Diagnosis and Treatment of SARS-CoV-2 issued the National Health Commission of the People's Republic of China.

Figure S1. Flow chart of outcome among patients with SARS-CoV-2 infected

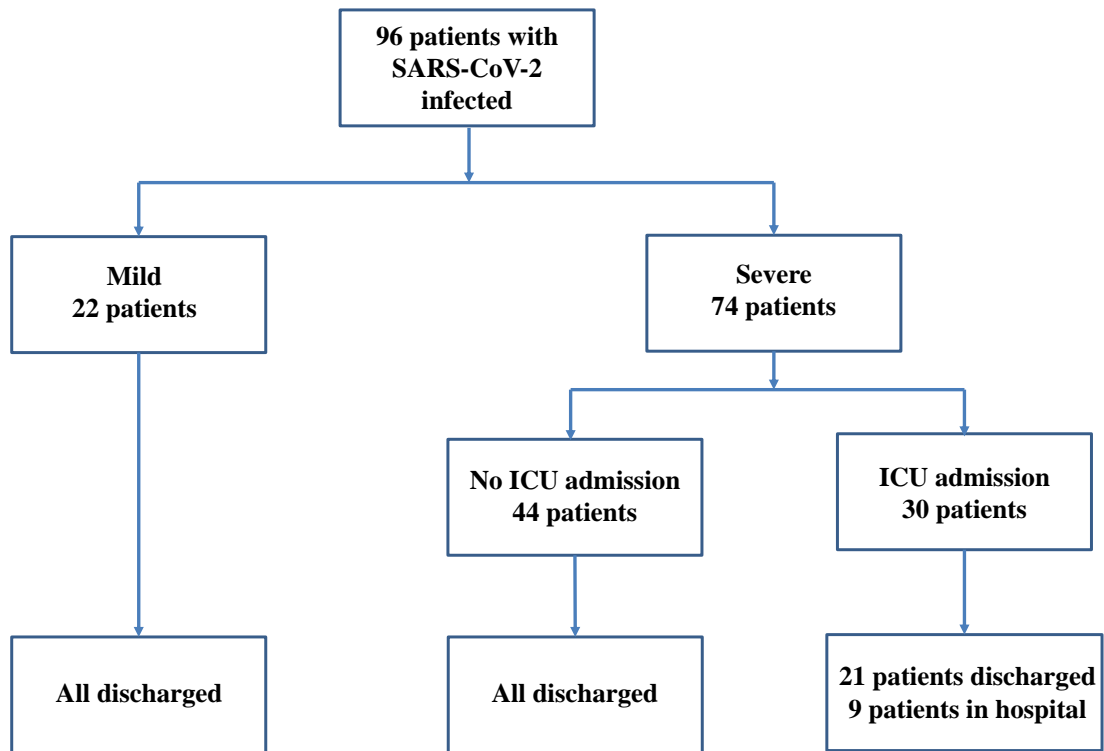


Figure S2. The daily samples collection of different sample types by days from illness onset

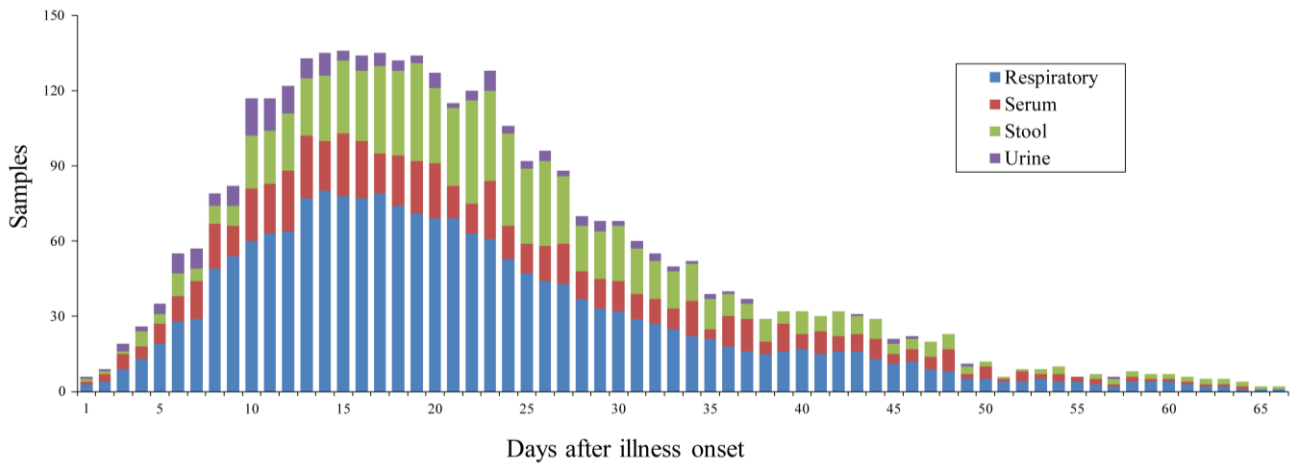


Figure S3. Timeline of real-time RT-PCR results from respiratory, blood and stool samples during the hospitalization for 22 mild patients

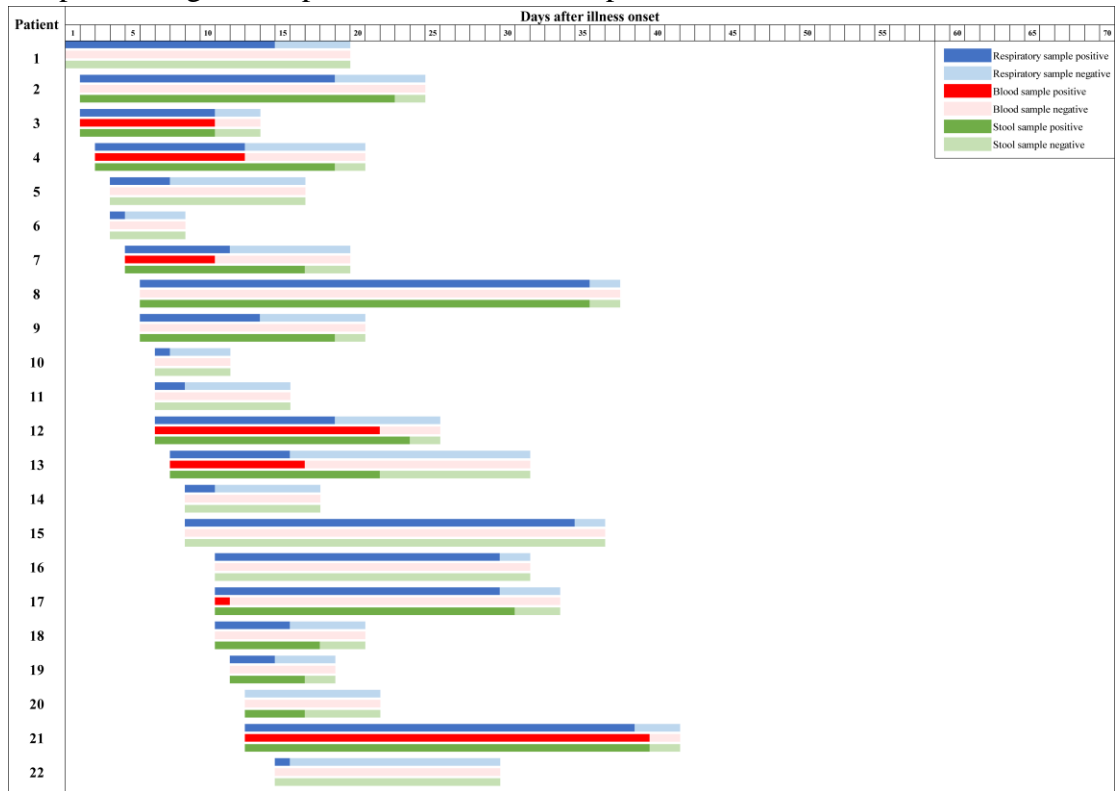


Figure S4. Timeline of real-time RT-PCR results from respiratory, blood and stool samples during the hospitalization for 44 severe patients without intensive care unit admission

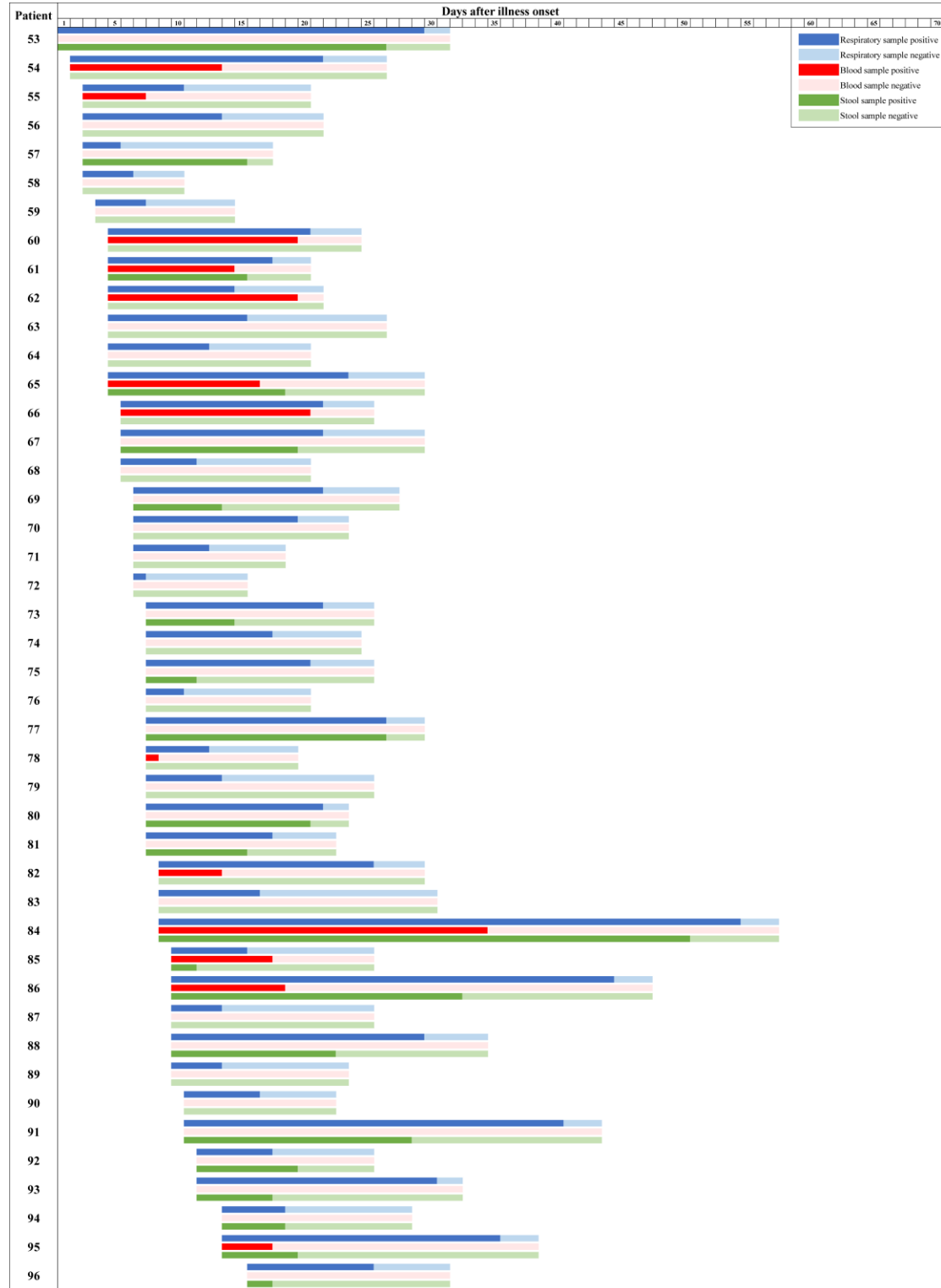


Figure S5. Timeline of real-time RT-PCR results from respiratory, blood and stool samples during the hospitalization for 30 severe patients with intensive care unit admission

