Supplementary Table S1. Characteristics of 21 Patients Who Died from COVID-19 Pneumonia.

Patient No.	Sex	Age (years)	Underlying disease	Treatment	SOFA score	Admission date	Death date
1	Male	82	Hypertension, cardiovascular or cerebrovascular diseases	Oxygen therapy, antibiotics, antiviral drug, glucocorticoids, γ-globulin, mechanical ventilation	14	Jan 24	Jan 26
2	Male	71	Hypertension, cardiovascular or cerebrovascular diseases, diabetes	Oxygen therapy, antibiotics, antiviral drug, glucocorticoids, γ-globulin, mechanical ventilation	3	Jan 15	Jan 26
3	Female	66	Hypertension	Oxygen therapy, antibiotics, antiviral drug, glucocorticoids, γ-globulin, mechanical ventilation	3	Jan 9	Jan 28
4	Male	72	Hypertension, cardiovascular or cerebrovascular diseases, diabetes	Oxygen therapy, antibiotics, antiviral drug, glucocorticoids, γ-globulin, mechanical ventilation	8	Jan 7	Jan 28
5	Male	77	Prostatitis	Oxygen therapy, antibiotics, antiviral drug, glucocorticoids, mechanical ventilation	2	Jan 23	Jan 29
6	Female	51	Hyperlipidemia	Oxygen therapy, antibiotics, antiviral drug, glucocorticoids, γ-globulin, mechanical ventilation	3	Jan 26	Jan 30
7	Female	79	Hypertension, cardiovascular or cerebrovascular diseases, diabetes, chronic digestive disorders, peripheral vascular disease, chronic renal insufficiency	Oxygen therapy, antibiotics, glucocorticoids, mechanical ventilation	7	Jan 20	Jan 26

8	Male	80	Hypertension, cardiovascular or cerebrovascular diseases, diabetes	Oxygen therapy, antibiotics, antiviral drug, mechanical ventilation	4	Jan 22	Jan 27
9	Female	62	Cardiovascular or cerebrovascular diseases, chronic digestive disorders	Oxygen therapy, antibiotics, antiviral drug, glucocorticoids, γ-globulin, mechanical ventilation, ECMO	3	Jan 6	Feb 7
10	Female	68	No	Oxygen therapy, antibiotics, antiviral drug, glucocorticoids, γ-globulin, mechanical ventilation, ECMO	3	Jan 12	Feb 1
11	Male	69	Hypertension, cardiovascular or cerebrovascular diseases, diabetes	Oxygen therapy, antibiotics, antiviral drug, glucocorticoids, γ-globulin, mechanical ventilation	6	Jan 20	Feb 3
12	Female	71	Hypertension, cardiovascular or cerebrovascular diseases, peripheral vascular disease, chronic renal insufficiency, malignancy	Oxygen therapy, antibiotics, antiviral drug, glucocorticoids, γ-globulin, mechanical ventilation	5	Feb 3	Feb 7
13	Male	77	Hypertension, benign prostatic hyperplasia	Oxygen therapy, antibiotics, antiviral drug, glucocorticoids, γ-globulin, mechanical ventilation	4	Jan 28	Feb 6
14	Female	66	Rheumatoid arthritis	Oxygen therapy, antibiotics, antiviral drug, γ-globulin, mechanical ventilation	–	Jan 25	Feb 3
15	Female	62	No	Oxygen therapy, antibiotics, antiviral drug, γ-globulin, mechanical ventilation	–	Jan 24	Feb 2
16	Male	68	Cardiovascular or	Oxygen therapy, antibiotics, antiviral	3	Jan 11	Feb 1

			cerebrovascular diseases	drug, glucocorticoids, γ-globulin, mechanical ventilation			
17	Male	72	Hypertension	Oxygen therapy, antibiotics, antiviral drug, glucocorticoids, γ-globulin, mechanical ventilation	5	Jan 28	Feb 7
18	Female	60	No	Oxygen therapy, antibiotics, antiviral drug, glucocorticoids, γ-globulin, mechanical ventilation	3	Jan 10	Feb 9
19	Female	69	Hypertension, cardiovascular or cerebrovascular diseases, chronic digestive disorders	Oxygen therapy, antibiotics, antiviral drug, glucocorticoids, γ-globulin, mechanical ventilation	3	Jan 26	Feb 8
20	Female	71	Hypertension, cardiovascular or cerebrovascular diseases	Oxygen therapy, antibiotics, antiviral drug, glucocorticoids, γ-globulin, mechanical ventilation	3	Jan 30	Feb 10
21	Male	81	Hypertension, cardiovascular or cerebrovascular diseases, diabetes, chronic digestive disorders	Oxygen therapy, antibiotics, antiviral drug, glucocorticoids, γ-globulin, mechanical ventilation	3	Jan 30	Feb 10

ECMO, extracorporeal membrane oxygenation. SOFA score, sequential organ failure assessment include oxygenation index, platelet count, cardiovascular system drug dose, glasgow coma score and creatinine.

Supplementary Table S2. Comparison of Demography and Clinical Presentation between Deceased and Gender–, Age–, and Underlying disease–Matched Case-Control Survivors*.

Characteristic	Total (n = 63)	Deceased (n = 21)	Survivors (n = 42)	*P* value
Age, years	69.7±7.7	70.2±7.7	69.5±7.8	0.741
Sex, n (%)				1.000
Male	30 (47.6)	10 (47.6)	20 (47.6)	
Female	33 (52.4)	11 (52.4)	22 (52.4)	
Underlying diseases, n (%)				
Hypertension	36 (57.1)	13 (61.9)	23 (54.8)	0.788
Cardiovascular or cerebrovascular diseases	25 (39.7)	12 (57.1)	13 (31.0)	0.059
Diabetes	20 (31.7)	6 (28.6)	14 (33.3)	0.780
Chronic digestive disorders	8 (12.7)	4 (19.0)	4 (9.5)	0.423
Tuberculosis	3 (4.8)	0 (0)	3 (7.1)	0.545
Peripheral vascular disease	4 (6.3)	2 (9.5)	2 (4.8)	0.595
Chronic hepatic or renal insufficiency	2 (3.2)	2 (9.5)	0 (0)	0.108
Malignancy	2 (3.2)	1 (4.8)	1 (2.4)	1.000
Symptom, n (%)				
Fever	63 (100)	21 (100)	42 (100)	–
Dry Cough	51 (81.0)	14 (66.7)	37 (88.1)	0.085
Dyspnea	45 (71.4)	18 (85.7)	27 (64.3)	0.137
Fatigue	42 (66.7)	13 (61.9)	29 (69.0)	0.584
Sputum production	31 (49.2)	12 (57.1)	19 (45.2)	0.430
Gastrointestinal symptoms	24 (38.1)	8 (38.1)	16 (38.1)	1.000
Myalgia	21 (33.3)	7 (33.3)	14 (33.3)	1.000
Headache	12 (19.0)	5 (23.8)	7 (16.7)	0.513

Hemoptysis	3 (4.8)	0 (0)	3 (7.1)	0.545
Systolic blood pressure, mmHg	–	Not available	121±21	
Diastolic blood pressure, mmHg	–	Not available	76±11	
Temperature, ℃, n (%)				0.053
< 37.3	40 (63.5)	16 (76.2)	24 (57.1)	
≥ 37.3	23 (36.5)	5 (23.8)	18 (42.9)	
Respiratory rate, breath/min	21.0 (20.0–30.0)	20.0(20.0–34.5)	21.0(20.0–26.3)	0.534
Heart rate, beat/min	88.0 (76.5–102.5)	94.0(78.0–109.5)	86.5(72.5–98.0)	0.083

*Data are reported as Mean±SD, median interquartile (IQR), or n (%) as appropriate.

Supplementary Table S3. Comparison of Laboratory Findings between Deceased and Age-Gender Matched Case-Control Survivors *.

Characteristic	Total (n = 63)	Deceased (n = 21)	Survivors (n = 42)	*P* value
White blood cell counts, × 10^9/L	6.6 (4.1–9.7)	8.9 (4.8–13.1)	5.8 (3.8–8.8)	0.052
Neutrophils, × 10^9/L	5.6 (2.9–8.3)	7.7 (3.0–11.5)	4.8 (2.8–7.4)	0.085
Lymphocytes, × 10^9/L	0.7 (0.5–0.9)	0.7 (0.5–0.8)	0.6 (0.5–1.0)	0.873
T cell subsets				
$CD3^+CD4^+$ T cells, cell/μL	92.6 (62.8–185.6)	68.0 (55.1–148.8)	114.6 (75.0–195.2)	0.068
$CD3^+CD8^+$ T cells, cell/μL	70.1 (33.3–113.6)	47.9 (25.4–73.8)	97.2 (55.4–132.1)	0.005
C-reactive protein, mg/L	65.8 (27.8–101.4)	86.4 (37.9–105.5)	58.1 (26.3–95.2)	0.124
Procalcitonin, ng/mL	0.1 (0.0–0.3)	0.1 (0.1–0.5)	0.1 (0.0–0.2)	0.032
Cardiac troponin I, ng/mL	0.0 (0.0–0.1)	0.1 (0.0–0.8)	0.0 (0.0–0.1)	0.001
Myoglobin, ng/mL	60.3 (34.3–190.5)	162.0 (48.5–342.8)	47.5 (28.0–142.0)	0.027
Brain natriuretic peptide, pg/mL	946.5 (444.0-1700.0)	970.0 (620.5-3531.0)	882.0 (399.5-1393.0)	0.212
Albumin, g/L	33.0 (30.6–35.7)	33.2 (31.2–35.6)	31.6 (30.0–36.1)	0.473
Total bilirubin, μmol/L	9.6 (8.2–15.4)	9.6 (8.3–16.3)	9.4 (8.1–15.5)	0.729
Direct bilirubin, μmol/L	3.4 (2.2–6.1)	3.1 (2.3–6.1)	3.6 (2.2–6.1)	0.808
Alanine aminotransferase, U/L	29.0 (20.0–43.0)	27.0 (20.0–37.0)	31.0 (18.5–44.8)	0.855
Aspartate aminotransferase, U/L	40.0 (24.0–57.0)	40.0 (27.0–61.5)	39.5 (20.8–52.5)	0.362

γ-Glutamyltranspeptidase, U/L	30.0 (19.0–43.0)	23.0 (16.5–42.0)	32.0 (19.8–54.0)	0.290
Creatinine, μmol/L	64.0 (56.0–87.0)	95.0 (63.0–112.0)	60.0 (54.8–74.3)	0.001
D-dimer, mg/L	0.6 (0.4–2.9)	1.1 (0.4–10.5)	0.6 (0.4–1.2)	0.075
Prothrombin time, s	13.3 (12.3–15.3)	13.9 (12.3–16.3)	13.2 (12.3–14.5)	0.420
Activated partial thromboplastin time, s	35.0 (32.1–39.7)	37.8 (30.8–41.5)	34.6 (32.4–39.0)	0.385
PaO_2, mmHg	59.0 (49.0 – 74.0)	56.0 (49.0 – 71.0)	64.5 (49.0–80.5)	0.358
$PaCO_2$, mmHg	36.0 (31.5–41.0)	34.0 (29.0–41.0)	36.5 (33.0–41.0)	0.169
PaO_2:F_IO_2 < 200 mmHg	47.6	29.2	2.204 (0.854−5.684)	0.102

*Data are reported as median interquartile (IQR).

PaO_2 = Arterial partial pressure of oxygen, $PaCO_2$ = Arterial partial pressure of carbon dioxide, F_IO_2 = fraction of inspiration O_2.